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**THE EFFECT OF STATE MAXIMUM-HOURS  
LAWS ON THE EMPLOYMENT OF  
WOMEN IN 1920**

**ELISABETH M. LANDES**

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## The Effect of State Maximum-Hours Laws on the Employment of Women in 1920

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This paper investigates the effect of early twentieth-century state maximum-hours laws on the employment of women in manufacturing. Maximum-hours laws are found to have reduced not only women's hours of work in 1920 but their employment as well. Further, the effect was not uniform by race and nativity: While the employment of foreign-born women was significantly reduced—by as much as 30 percent in the most restrictive states—the employment of native white women was largely unaffected. This and other evidence adduced in the paper suggest that early support for maximum-hours legislation for women, especially by the emerging American labor movement, may have been motivated in part by the well-documented hostility to immigration during this period.

In 1900 only 11 states had laws specifically restricting the number of hours adult women could work.<sup>1</sup> In the next 20 years, 29 additional states plus the District of Columbia had passed hours laws, so that by 1919, only eight states were without such legislation.<sup>2</sup> What accounts

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<sup>1</sup> Maine, Connecticut, New Hampshire, New York, New Jersey, Pennsylvania, Virginia, Louisiana, Nebraska, Massachusetts, and Rhode Island. Other states, such as Minnesota and North and South Dakota, had passed laws making it illegal for an employer to "compel" women to work more than a certain maximum number of daily hours. However, such laws were presumably unenforceable.

<sup>2</sup> Indiana, Iowa, Oklahoma, West Virginia, Georgia, Florida, Alabama, and New Mexico. New Mexico enacted a law setting maximum daily hours limits for several industries in 1921. The limits varied across industries, but a maximum weekly limit of 56 hours was set for all, with the exception of telephone exchanges.

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for the overwhelming adoption of this legislation in such a short period of time?

The stated reasons for such legislation were that long hours of work directly injured the health of women workers, the health and productivity of their offspring, and the quality of family life in general.<sup>3</sup> The general welfare of society, therefore, was injured by permitting women to work long hours and was in need of protection by the courts against the demands of the marketplace. In the landmark Supreme Court case, *Muller v. Oregon*, Louis D. Brandeis argued that "this needed protection of women can be afforded only through shortening the hours of labor" (Brandeis and Goldmark 1969, p. 56).

Alternatively, these laws can be viewed as the result of a political process, in which the interests of particular groups in society who stood to gain from such laws (e.g., men) were able to prevail over the interests of the groups who stood to lose (women).

In Section I of this paper, I sketch a simple model of a labor market in which two types of labor are employed as perfect substitutes. I show that a legal reduction in the hours of work one group may offer at any wage rate reduces the equilibrium employment of workers in that group for reasonable values of the elasticity of demand for labor. Hence maximum-hours restrictions for women should have reduced their employment in the covered sectors as well as their average hours of work. This result is important for the empirical work in Section II, because I am able to observe only employment and not hours worked by sex for the period in which these laws were important.

Section II investigates the direct effect of state maximum-hours laws on the employment of women in manufacturing. Using data from the census of manufactures (U.S. Department of Commerce 1928) and the census of population for 1900, 1910, and 1920 (U.S. Department of Commerce 1904, 1914, 1922, and 1923), I find that maximum-hours legislation significantly reduced the employment of women in manufacturing. However, the effect was not uniform across race and nativity classes. The relative employment of foreign-born and first-generation American women in manufacturing was depressed by these laws, especially in the more restrictive states. The employment of native white women, on the other hand, was largely unaffected.

Immigrant women flowing into the United States during the late nineteenth and early twentieth centuries typically had higher labor-

<sup>3</sup> These arguments are presented at length in Brandeis and Goldmark (1969, pp. 11-113). Paradoxically, it was recognized that although longer hours of work may have resulted in higher infant mortality, the extra income more than offset this detriment. In fact, infant mortality was negatively correlated with mother's work status.

force participation rates than native U.S. women.<sup>4</sup> The impact of state laws restricting the hours that could be worked by "all" women might have been expected to fall primarily on immigrant women, since most native women workers were probably working at or below the legislated maximum prior to legislation. Hence these laws might have been expected to reduce competition by immigrant women and perhaps even future immigration to these states.

Some evidence supporting this thesis is adduced in the third section of the paper. I briefly examine contemporary accounts of immigration and the labor movement in the nineteenth and twentieth centuries. These document the opposition of American labor toward immigration throughout the period of massive immigration experienced by the United States, but especially between 1890 and the passage of the Immigration Act of 1924.

In this section I also investigate the incidence, restrictiveness, and timing of state maximum-hours laws. Here I find that the greater the manufacturing employment of foreign-born women in a state as of 1900, the earlier that state passed a maximum-hours law for women.

#### **I. The Impact of a Maximum-Hours Law on the Constrained Group: A Model of Supply and Demand**

Assume an industry labor market in which two groups of workers are employed. The workers are perfect substitutes in production, so that total hours of work in the industry can be expressed along one supply curve. A shift in the underlying hours schedule of either group shifts aggregate supply and, therefore, equilibrium industry hours and wages.

The supply schedules for each group of workers are characterized by (1) and (2) below, where  $\epsilon_{L_i}$  and  $\epsilon_{h_i}$  denote the supply elasticities for labor and hours, respectively.

$$L_i = (wh_i)^{\epsilon_{L_i}} \quad i = 1, 2, \quad (1)$$

$$h_i = w^{\epsilon_{h_i}} \quad i = 1, 2. \quad (2)$$

The number of workers within each group willing to enter the industry,  $L_i$ , is a positive function of their expected earnings in that industry,  $wh_i$ . Hours typically offered per worker within each group,  $h_i$ , is a positive function of the industry wage rate. Note again that workers

<sup>4</sup> The labor-force participation rates of foreign-born white women in 1900 ranged from 1.8 times that of native white women with native parents in Wisconsin to 4.2 times the rate of native white women with native parents in Utah. In New England and the North Atlantic states, this ratio averaged about 2.5.

are assumed to be perfect substitutes, so the hourly wage rate is the same for all workers.<sup>5</sup>

Assuming constant elasticity of demand for labor services (hours) in the industry, the market relationships can be simply expressed as:

$$D = w^{-\eta}, \quad (3)$$

$$S = h_1 L_1 + h_2 L_2. \quad (4)$$

A maximum-hours constraint imposed on workers of group 1 in this industry affects their supply schedule in two ways— $h_1$  is immediately reduced and  $\epsilon_{h_1}$  becomes identically equal to 0 in the range beyond the maximum imposed.

Totally differentiating (3) and (4) with respect to  $h_1$  and setting  $\epsilon_{h_1} = 0$  results in the following equilibrium relationships:

$$\frac{dS}{dh_1} = \frac{\eta(1 + \epsilon_1)L_1}{\eta + \epsilon_1 s_1 + \epsilon_2 s_2} > 0.$$

$$\frac{dw}{dh_1} = \frac{-w}{S} \cdot \frac{(1 + \epsilon_1)L_1}{\eta + \epsilon_1 s_1 + \epsilon_2 s_2} < 0,$$

$$\frac{dL_1}{dh_1} = \frac{\epsilon_1 L_1}{h_1} \cdot \frac{\eta + \epsilon_2 s_2 - s_1}{\eta + \epsilon_1 s_1 + \epsilon_2 s_2} \geq 0 \text{ as } \eta + \epsilon_2 s_2 - s_1 \geq 0,$$

$$\frac{dL_2}{dh_1} = \frac{-(\epsilon_2 - \epsilon_{h_2})L_2}{S} \cdot \frac{(1 + \epsilon_1)L_1}{\eta + \epsilon_1 s_1 + \epsilon_2 s_2} < 0,$$

$$\frac{dh_2}{dh_1} = \frac{\epsilon_{h_2} \cdot h_2}{S} \cdot \frac{(1 + \epsilon_1)L_1}{\eta + \epsilon_1 s_1 + \epsilon_2 s_2} < 0,$$

where  $\epsilon_1 = \epsilon_{L_1}$  (note  $\epsilon_{h_1} \equiv 0$ ),  $\epsilon_2 = \epsilon_{L_2} + \epsilon_{h_2} + \epsilon_{L_2} \cdot \epsilon_{h_2}$ , and  $s_1 = h_1 L_1 / S$ ,  $s_2 = h_2 L_2 / S$ .

An exogenous reduction in  $h_1$  decreases total hours supplied, increases the equilibrium hourly wage and, as a result, both the number and average hours of workers from group 2. The equilibrium employment of workers from group 1 rises or falls as the absolute value of the elasticity of demand for labor plus the hours share of group 2 workers weighted by their total hours elasticity of supply falls short of or exceeds the hours share in employment of group 1 workers.<sup>6</sup>

Since women workers comprised roughly 15 percent of adult manufacturing workers in 1910, a binding maximum-hours constraint

<sup>5</sup> Hourly earnings of women in manufacturing were actually lower than those of men. However, this analysis applies as long as the hourly earnings of women, quality adjusted, were the same for men and women.

<sup>6</sup> Abowd and Ashenfelter (1979) model a similar supply shift in the more current setting of hours constrained by anticipated layoff.

would have resulted in their reduced employment as long as the elasticity of demand for labor in manufacturing at that time exceeded 0.15 in absolute value. Estimates of elasticity of demand constructed from production function studies of American manufacturing done by Paul H. Douglas and his associates from 1904, 1909, and 1914 suggest that the elasticity of demand for labor in manufacturing during this time period was greater than unity (Douglas 1976, p. 906).

## II. The Effect of State Maximum-Hours Laws for Women: Empirical Results

Maximum-hours laws for women varied considerably across states in both date of introduction and degree of restrictiveness.<sup>7</sup> Legislated maximum hours varied between 8 and 11 hours daily and between 48 and 70 hours weekly. Table 1 presents a summary of the relevant state laws regulating the hours women could work in manufacturing. Two states listed as being without laws in 1914, Arizona and South Carolina, had statutes regulating the hours of adult women in mercantile establishments. Arizona did not regulate the hours of women in manufacturing until 1927, and by 1929 South Carolina still had not.

### *The Effect of Maximum-Hours Laws on the Hours and Employment of Women*

#### Hours

A regression of average weekly hours in manufacturing in 1919 reveals that maximum-hours laws did constrain the hours worked by women as a group:

$$\begin{aligned} \text{HRS19} = & 53.3 + 1.72\text{SD} - .05\text{PURB} + .11\text{PMFF20} \\ & (69.09)(3.43) \quad (-3.72) \quad (1.93) \\ & - .08\text{PMFF20} \cdot \text{DUM}, \\ & (-1.81) \end{aligned}$$

<sup>7</sup> Measuring the enforcement of laws is more problematic than measuring their existence, and I have not tried to do so in this paper. All the laws carried what appear to be considerable penalties for violation. Economic intuition suggests that individual enforcement by workers or competitors is probably more important for such laws than government enforcement. In any event, I have found no data on violations reported or even budgets devoted to enforcement activities. Notice that minimum wage laws were not an important factor in regulating the employment conditions of women in the period up to 1920. Only 11 states had the power to regulate women's wages prior to 1919, and of these only seven had done so by that date.

$R^2 = .67$ ; where HRS19 = average weekly hours worked in manufacturing in 1919;<sup>8</sup> SD = 1 if state is in South, 0 otherwise; PURB = percentage of state's population residing in urban areas in 1920; PMFF20 = percentage of manufacturing workers in 1920 who were women; and DUM = 1 if the state had passed a maximum-hours law covering the employment of women in manufacturing by 1914, 0 otherwise.

The regression coefficients imply that women worked 8 hours a week fewer in states with maximum-hours laws than in states without them.<sup>9</sup>

### Employment

To estimate the effect of the varying state laws on the employment of female workers, I regress the employment share in 1920 of women in manufacturing, the major covered sector of the economy, on a set of variables designed to measure the existence and restrictiveness of state maximum-hours laws, and on a set of standardizing variables.<sup>10</sup> Regression results are presented in full in table 2.<sup>11</sup>

The dependent variable in each regression is expressed as an employment share—for example, the percentage of adult workers in manufacturing in 1920 in a particular state who were women.

Two variables are used to describe state maximum-hours laws for

<sup>8</sup> Hours worked in the census of manufactures (U.S. Department of Commerce 1928) are actually "prevailing" hours of work as reported by work places.

<sup>9</sup> I also ran the same regression for 1909; average hours worked per week in 1909 (HRS09):

$$\text{HRS09} = 58.5 + .60\text{SD} - .05\text{PURB} + .05\text{PMFF10} - .04\text{PMFF10} \cdot \text{DUM} \\ (64.5)(1.05) \quad (-2.51) \quad (.77) \quad (-.91)$$

$R^2 = .43$ , where PMFF10 is the percentage of all manufacturing workers in 1910 who were female. The coefficients on PMFF10 and PMFF10 · DUM are neither as large nor as significant as those in the 1919 regression, suggesting that the state differences in hours worked did not exist prior to legislation.

<sup>10</sup> The data reported in these censuses are not directly comparable across years or even in any given year because of differences in instructions given to the census takers. It is generally conceded that the 1910 census of population overreports the employment of women and children relative to 1900 and 1920. However, the census of population underreports the employment of women and children relative to the census of manufactures, since the latter is a census of employers and the former of households, in which it is suspected that census takers did not always ask about the employment of women and children in the household. There is no reason to believe that the errors caused either by the overreporting of 1910 or the general underreporting of the census of population relative to the census of manufactures differ systematically by state.

<sup>11</sup> I exclude the mountain states from the sample of observations because of their relative unimportance in manufacturing; they produced less than 1.5 percent of total manufacturing output in 1920. However, unreported regressions with the eight mountain states in the sample were similar to those reported here.



TABLE 1  
SUMMARY OF RELEVANT STATE LAWS REGULATING EMPLOYMENT CONDITIONS OF WOMEN

State	FIRST LAW LIMITING HOURS OF EMPLOYMENT IN MANUFACTURING FOR ADULT WOMEN				HOURS LAWS IN EFFECT IN 1914			NIGHT WORK LAW IN 1914	MINIMUM WAGE LAW	
	Date Passed (1)	Daily Hours Limit (2)	Weekly Hours Limit (3)	Enforce- able (4)	Year Passed (5)	Daily Limit (6)	Hourly Limit (7)		Date Passed (9)	Date First Decreed in Manufacturing (10)
Alabama	1887*	9	56	No	...	...	...	...	...	...
Arizona	1927	8	48	Yes	...	...	...	...	...	...
Arkansas	1915	9	54	Yes	...	...	...	...	1915	1920
California	1911	8	48	Yes	1913	8	48	...	1913	1917
Colorado	1903	8	56	No	1913	8	56	...	1913	...
Connecticut	1887	10	60	Yes	1907	10	56	Yes	...	...
Delaware	1913	10	55	Yes	1913	10	55	Yes	...	...
District of Columbia	1914	8	48	Yes	1914	8	48	...	1918	1920
Georgia	...	...	...	...	...	...	...	...	...	...
Florida	...	...	...	...	...	...	...	...	...	...
Idaho	1913	9	63	Yes	1913	9	63	...	...	...
Illinois	1893†	8	48	Yes	1911	10	70	...	...	...
Indiana	...	...	...	...	...	...	...	Yes	...	...
Iowa	...	...	...	...	...	...	...	...	...	...
Kansas	1919	8	55	Yes	...	...	...	...	1915	1919
Kentucky	1912	10	60	Yes	1912	10	60	...	...	...
Louisiana	1886	10	60	No	1908	10	60	...	...	...
Maine	1887	10	60	Yes	1909	10	58	...	...	...
Maryland	1912	10	60	Yes	1912	10	60	...	...	...
Massachusetts	1879	10	60	Yes	1913	10	54	Yes	1912	1916

Michigan	1907	10	60	Yes	1909	9	54	...	...
Minnesota	1909	10	58	Yes	1913	9	54	...	1913
Mississippi	1914	10	60	Yes	1914	10	60	...	1914
Missouri	1909	...	54	Yes	1913	9	54	...	...
Montana	1913	9	63	Yes	1913	9	63	...	...
Nebraska	1899	10	60	Yes	1913†	9	54	Yes	1913
Nevada	1917	8	56	Yes	...	...	...	...	...
New Hampshire	1887	10	60	Yes	1913	10	55	Yes	...
New Jersey	1892	10	55	Yes	1912	10	60	...	...
New Mexico	1921	10	56	Yes	...	...	...	...	...
New York	1899	10	60	Yes	1913	9	54	Yes	...
North Carolina	1915	11	60	Yes	...	...	...	...	...
North Dakota	1888	10	70	No	1889	10	70	...	1919
Ohio	1852	10	70	No	1913	10	54	...	...
Oklahoma	1890*	10	70	No	...	...	...	...	...
Oregon	1903	10	70	Yes	1909*	10	60	Yes	1913
Pennsylvania	1897	12	84	Yes	1913	10	54	Yes	...
Rhode Island	1885	10	60	Yes	1913	10	54	...	...
South Carolina	...	...	...	...	...	...	...	...	...
South Dakota	1898	10	70	No	1913	10	70	...	...
Tennessee	1907	...	62	Yes	1913	10½	58	...	...
Texas	1913	10	54	Yes	1910	10	54	...	1919
Utah	1911	9	54	Yes	1911	9	54	...	...
Vermont	1912	11	58	Yes	1912	11	58	...	...
Virginia	1890	10	70	Yes	1912	10	70	...	...
Washington	1901	10	70	Yes	1911	8	56	...	1913
West Virginia	...	...	...	...	...	...	...	...	...
Wisconsin	1867	8	56	No	1911	10	55	Yes	1913
Wyoming	1915	10	56	Yes	...	...	...	...	1919

SOURCES.—Cohs. 1-8, U.S. Women's Bureau 1929; coh. 9 and 10, U.S. Women's Bureau 1929b.  
 \* Repealed in 1894.  
 † Declared unconstitutional in 1895; 1909 law is next attempt to regulate.  
 ‡ Amended in 1915 to apply only to employment in "metropolitan cities and cities of first class."  
 § First adopted by Territory of Dakota in 1863.  
 ¶ Repealed in 1909.  
 More restrictive legislation applied only to women employed in Portland.

TABLE 2

THE EMPLOYMENT SHARE OF WOMEN IN MANUFACTURING, 1920

	A	B	C	D
Constant	-1.68 (-1.11)	-1.70 (-1.15)	8.71 (4.39)	8.65 (4.42)
EMP <sub>-1</sub>	.79 (9.66)	.79 (9.82)	...	...
SD	.05 (.06)	.03 (.04)	.74 (.44)	.61 (.37)
PURB	.05 (2.26)	.05 (2.29)	.15 (4.14)	.15 (4.16)
DUM	-.12 (-.14)	...	-.68 (-.41)	...
REST	-2.53 (-1.49)	-2.60 (-1.63)	-7.84 (-2.58)	-8.27 (-2.94)
R <sup>2</sup>	.83	.83	.39	.38
F <sub>β<sub>5</sub>, β<sub>6</sub></sub>	1.38	...	4.54	...

NOTE.—Numbers in parentheses are *t*-values.

women: a continuous variable (REST) which measures the restrictiveness of the law in 1914; and a dummy variable (DUM) which takes the value one if the law was first passed between 1905 and 1914, zero otherwise. The measure of restrictiveness is the percentage of adult manufacturing workers in 1909 who worked longer hours than the 1914 legislated maximum for women. For example, if the 1914 legislated maximum for women in a state was 10, REST = the percentage of all adult manufacturing workers who worked more than 10 hours a day (60 hours a week) in 1909.

This variable has the advantage that it naturally takes the value zero for states without maximum-hours laws for women, since the decision not to legislate a maximum is conceptually the same as the decision to legislate a maximum at or beyond the maximum determined by the market.<sup>12</sup>

Several standardizing variables are also introduced into the equation: (1) a dummy variable, SD, which takes the value one if a state is in the South, zero otherwise—the lesser industrialization in the southern states may have influenced the demand for female labor; (2) percentage of the state's population residing in urban areas in 1910, PURB—labor-force participation rates, and hence employment, of women have historically been higher in more urbanized states; and (3) employment share of women in manufacturing in 1900—this variable

<sup>12</sup> This was suggested to me by Peter Linneman. It should be noted that REST is constructed from hours worked by *all labor* in manufacturing establishments in a state in 1909, the earliest date for which hours data were available, and the legislated maximum for women. A superior measure of the restrictiveness of maximum-hours legislation for women would result from using hours worked by *women* in 1909, but information on hours worked is not available by sex.

is included to standardize for the industrial mix within states that would affect the employment of women in manufacturing. Results are also reported in table 2 for regressions excluding lagged employment share.

These variables are introduced into the regression because of their expected correlations with the legal variables. For example, southern and less urbanized states were less likely to have passed maximum-hours laws by 1914 (see tables 5 and 6). Similarly, those states in which women were employed in relatively greater numbers in 1900 may have had other unobserved characteristics correlated with the likelihood of passing maximum-hours laws for women (see tables 5 and 6).

The regression equations are of the form:  $EMP = \beta_1 + \beta_2 EMP_{-1} + \beta_3 SD + \beta_4 PURB + \beta_5 DUM + \beta_6 REST + u$ , where  $EMP$  = employment share of women in 1920;  $EMP_{-1}$  = employment share of women in 1900;  $SD$  = a dummy variable which takes the value one if the state is in the South, as defined by the census, zero otherwise;  $PURB$  = percentage of state population residing in urban areas in 1910;  $DUM$  = a dummy variable which takes the value one if the state passed its first enforceable maximum-hours law between 1905 and 1914; and  $REST$  = proportion of adult manufacturing workers in 1909 who worked longer than the 1914 legislated maximum. If no law was in existence in a state by 1914, this variable naturally takes the value zero.

It is apparent from table 2 that maximum-hours laws reduced the employment of women in manufacturing as well as their hours worked. This is surprising in light of contemporary support for these laws by women and contemporary accounts which reported that the employment of women was not adversely affected by state maximum-hours laws.

Census data on hours worked in manufacturing suggest that foreign-born white women worked longer hours on average than did other women.<sup>13</sup> I now turn to investigate the effect of maximum-hours laws on the employment of women by race and nativity.

<sup>13</sup> A regression of mean hours worked in manufacturing in 1919 on percent female and percent female interacted with the percent female in each race-nativity class generated the following coefficients:

$$\begin{aligned} HRS09 = & 58.89 - .056PMFF10 - .004PMFF10 \cdot NWFP + .009PMFF10 \cdot FBW \\ & (-.57) \quad (-.45) \quad (1.52) \\ & + .024PMFF10 \cdot NG - .125SD - .054PURB; R^2 = .48. \\ & (1.40) \quad (-.16) \quad (-3.04) \end{aligned}$$

$$\begin{aligned} HRS09 = & 59.92 + .001PMFF10 \cdot NWNP - .007PMFF10 \cdot NWFP + .007PMFF10 \cdot FBW \\ & (.24) \quad (-.99) \quad (1.36) \\ & + .016PMFF10 \cdot NG - .094SD - .050PURB; R^2 = .48. \\ & (.99) \quad (-.12) \quad (-2.74) \end{aligned}$$

*The Effect of Maximum-Hours Laws for Women on the Employment of Women in Manufacturing by Race and Nativity*

To estimate the effect of state maximum-hours laws on the employment of women workers within race and nativity classes, I regress the employment share of women *within* each race-nativity class on the legal variables and the same set of standardizing variables as for women as a group (except that lagged employment share is now specific to the particular race-nativity group). Table 3 presents the coefficient on DUM and REST in these regressions.

An interesting pattern appears in table 3. While the manufacturing employment of both foreign-born and first-generation American women was significantly reduced by maximum-hours legislation, the employment of native white women of native parentage, the largest part of women workers in 1900 and 1920, was largely unaffected.

The mean value of REST for the 28 states which had passed laws by 1914 was .27 (standard deviation .29). To assess the quantitative importance of the laws, I divide the 28 states into four subsets: those with values of REST within one-half standard deviation above .27, those within one-half standard deviation below .27, those more than one-half standard deviation above .27, and those more than one-half standard deviation below .27.

Panels A and B of table 4 include only states with values of REST exceeding the mean, .27. Employment of first-generation American women in manufacturing was about 37 percent lower in the states in panel A and about 30 percent lower in the states in panel B than it would have been in the absence of the laws (col. 3), while employment of foreign-born white women was reduced by about 30 percent and 20 percent in these states, respectively.

The even stronger decline in the employment of first-generation American women (NWFP) than of immigrant women (FBW) may have been caused partly by the impact of the laws on immigrant women. Immigration decisions affected by maximum-hours laws would affect the ex post distribution of first-generation American women as well.

Another way to explore the effect of maximum-hours laws is to ask what would be the effect of passing a law in states which had no legislation in 1914. Imposing a maximum-hours law with REST = .46 (the mean for states in panel B, table 3) in each of these states would have reduced the 1920 manufacturing employment of foreign-born white women by more than 90 percent ( $t = -1.99$ ) and would have eliminated that of first-generation American women ( $t = -3.30$ ).<sup>14</sup>

<sup>14</sup> Unreported regressions suggest that the employment of immigrant women in domestic and personal service, the major uncovered sector of the labor force, was

TABLE 3  
COEFFICIENTS ON DUM, REST IN REGRESSIONS BY RACE AND NATIVITY CLASS

REGRESSION	NATIVE WHITE NATIVE PARENTS (NWNP)		NATIVE WHITE FOREIGN PARENTS (NWFN)		FOREIGN- BORN WHITE (FBW)		NEGRO (NG)	
	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$	$\beta$	$t$
A1:								
DUM	.71	1.24	-.78	-1.77	-.26	-1.12	.13	.53
REST	-.90	-.84	-1.46	-1.79	-.58	-1.31	-.46	-1.01
$R^2$	.79	...	.88	...	.95	...	.87	...
$F_{DUM/REST}$	.93	...	5.83	...	2.15	...	.35	...
A2:								
REST	-.46	-.45	-2.08	-2.73	-.72	-1.67	-.37	-.89
$R^2$	.78	...	.87	...	.94	...	.86	...
B1:								
DUM	.26	.24	.30	.46	-.91	-1.49	-.27	-.69
REST	-2.65	-1.30	-3.60	-3.01	-2.37	-2.11	.56	.79
$R^2$	.20	...	.71	...	.62	...	.64	...
$F_{DUM/REST}$	.92	...	3.43	...	5.32	...	.44	...
B2:								
REST	-2.45	-1.32	-3.41	-3.07	-2.96	-2.76	.39	.59
$R^2$	.20	...	.71	...	.59	...	.63	...

Note.—Other variables in the regression are: panel A—SD, PURB, EMP.; panel B—SD, PURB.

TABLE 4

EMPLOYMENT SHARES OF WOMEN IN MANUFACTURING, 1900 AND 1920, BY NATIVITY, IN STATES WITH MAXIMUM-HOURS LAWS FOR WOMEN AND ESTIMATED IMPACT OF MAXIMUM-HOURS LAWS, BY RESTRICTIVENESS

NATIVITY CLASS	EMPLOYMENT SHARE (%)		ESTIMATED IMPACT OF LAWS			
	1900 (1)	1920 (2)	(3)*		(4)†	
			$\beta$	$t$	$\beta$	$t$
A. $REST \geq .56$ ; $\mu_{REST} = .73$ ( $N = 6$ )						
NWNP	5.49	3.92	.05	.07	-1.69	-1.11
NWFP	5.15	3.21	-1.85	-3.23	-2.35	-2.63
FBW	2.44	1.48	-.69	-1.99	-2.65	-3.16
NG	1.12	.87	-.21	-.65	.15	.28
B. $.27 \leq REST < .56$ ; $\mu_{REST} = .46$ ( $N = 4$ )						
NWNP	7.88	5.88	.30	.49	-.96	-.81
NWFP	5.58	3.33	-1.45	-3.30	-1.35	-1.97
FBW	2.36	2.13	-.53	-1.99	-2.00	-3.08
NG	2.20	2.11	-.08	-.34	-.01	-.02
C. $.123 \leq REST < .27$ ; $\mu_{REST} = .17$ ( $N = 3$ )						
NWNP	9.68	8.37	.56	1.04	-.18	-.17
NWFP	1.03	.43	-1.02	-2.55	-.30	-.50
FBW	.59	.41	-.36	-1.59	-1.31	-2.28
NG	2.54	3.16	.05	.22	-.17	-.48
D. $REST < .123$ ; $\mu_{REST} = .056$ ( $N = 15$ )						
NWNP	7.53	6.22	.66	1.19	.11	.11
NWFP	7.26	6.20	-.86	-2.04	.09	.15
FBW	4.89	4.00	-.30	-1.28	-1.04	-1.77
NG	.21	.66	.10	.44	-.23	-.63

\*Estimated from regressions which included lagged employment among the independent variables.

†Estimated from regressions which excluded lagged employment from the independent variables.

### III. Maximum-Hours Laws and Immigration

Twenty-eight million people immigrated to the United States between 1820 and 1910, 18 million of them in the 30-year period between 1880 and 1910 alone. Before 1870, immigrants from southern and eastern Europe never comprised more than 2 percent of all immigrants to the United States (Bernard 1950, p. 8, table 1). This picture changed rapidly after 1870, as the proportion of all immigrants to the

significantly higher in states with maximum-hours laws ( $\beta = 2.15$ ,  $t = 2.46$ ) but was unrelated to the degree of restrictiveness ( $\beta = -0.57$ ,  $t = -0.42$ ), when the regression equation included the lagged value of employment share.

United States from southern and eastern Europe rose from 1.5 percent in 1861-70 to 7.2 percent in 1871-80, 18.3 percent in 1881-90, 51.9 percent in 1891-1900, and 70.8 percent in 1901-10 (Bernard 1950, p. 40, table 5).

The emerging American labor movement supported several measures during this period to restrict immigration, ranging from an outright prohibition on all immigration to the institution of a literacy test. The latter measure was hoped to selectively restrict immigration from southern and eastern Europe.<sup>15</sup>

The opposition of American labor was not confined to male immigrants but extended to immigrant women who were more willing than American women to work long hours at low pay and even to engage in homework. Again, this was especially true of the "new" immigrant from eastern and southern Europe. With respect to the "old" immigrants, who came primarily from the Anglo-Saxon and Nordic countries of Canada, the British Isles, France, Germany, and Scandinavia, Alice Henry states in her book on the women's trade union movement that "most of those who have been here some time, and invariably the children of the first-comers, are Americans through and through" (Henry 1925, p. 127). But "with respect to the foreign peoples that we have with us today, the situation is somewhat different. . . . They meet the demands of a new country, asking for labor . . . and . . . *are being used to lower yet further wages for themselves and others*" (Henry 1925, p. 127, emphasis added). She sums up her chapter on "The Immigrant Women and Organization" by stating, "I cannot see any prospect of organizing them in any reasonable number at present. The one thing we can do to alleviate their hard lot is to secure legislation—*legislation for shorter hours and for the minimum wage*" (Henry 1925, p. 141, emphasis added).

According to contemporary accounts, the American labor movement also played a major part in supporting restrictive hours legislation for women. In a U.S. Women's Bureau publication tracing the chronological development of protective legislation for women, Claire Beyer states that "taken as a whole, probably the largest single factor making for the passage of labor legislation for women has been organized labor . . . it initiated most of the laws limiting the hours of women in factories and mechanical establishments . . . [and] it represented the bulk of the political strength that made legislators fear to run counter to measures designed to benefit the laboring classes . . ." (U.S. Women's Bureau 1932, p. 2).

Maximum-hours laws for women received strong support from the emerging women's trade union movement as well as from the

<sup>15</sup> See Hourwich (1912) for a discussion of labor's opposition to immigration.



men's<sup>16</sup>—presumably because most women were already working at or below the prospective maximum.

A U.S. Women's Bureau report on the effects of protective labor legislation on women's employment opportunities concluded that maximum-hours legislation did not constrain hours for the majority of women: "As regards the application of hours laws to women in five important women-employing industries, this investigation has shown that such legal limitations of women's hours of work have not brought about any degree of substitution of men for women" (U.S. Women's Bureau 1928b, p. 13).

Although the employment of women as a group may have been unaffected by maximum-hours laws, the results discussed above indicate that the employment of foreign-born and first-generation American women in manufacturing was reduced.

The hostility of labor to immigration suggests that their strong support for maximum hours laws for women may have been motivated in part by the expectation that only a distinct, alien group of women workers would be affected by them, and perhaps even by the hope that further immigration would be stemmed. To the extent that these motivating forces were important, states in which foreign-born women were threatening to become an important group in manufacturing employment would have been more likely to pass such laws and would have had more effective, that is, better enforced and more restrictive, legislation. Similarly, the more urban states, in which workers were better organized among trade unions through which they could channel political pressures, would have been more likely to pass such laws by 1914 and should have had more effective legislation.

In table 5 I investigate the underlying motivation for maximum-hours laws. I regress REST, the degree of legal restriction, and DATE, the year in which a maximum-hours law for women was first passed, on the following variables: PMFF00, the percentage of manufacturing workers in 1900 who were women; FBW, the percentage of manufacturing workers in 1900 who were foreign-born women; SD; and PURB.

The equations are of the form:

$$\text{REST} = \beta_{10} + \beta_{11}\text{PMFF00} + \beta_{12}\text{FBW} + \beta_{13}\text{SD} + \beta_{14}\text{PURB} + u_1,$$

$$\text{DATE} = \beta_{20} + \beta_{21}\text{PMFF00} + \beta_{22}\text{FBW} + \beta_{23}\text{SD} + \beta_{24}\text{PURB} + u_2.$$

<sup>16</sup> In *The Trade Union Woman*, Alice Henry (1925) states that "in New York and Boston, Chicago and St. Louis, and Kansas City the local leagues have in every case had a marked effect upon industrial legislation for women. They have been prime movers in the campaign for . . . limitations of hours of working women in the states of New York, Massachusetts, Illinois and Missouri, and for minimum wage legislation in Massachusetts" (p. 20).

TABLE 5  
DEGREE OF RESTRICTIVENESS AND DATE OF PASSAGE  
OF MAXIMUM-HOURS LEGISLATION FOR WOMEN

	REST			DATE		
	Sample			Sample		
	A	B	C	A	B	C
PMFF00	-.012 (-1.27)	-.019 (-1.32)	-.037 (-1.67)	.07 (.17)	-.02 (-.46)	.21 (.32)
FBW	-.021 (-1.06)	-.018 (-.68)	.008 (.22)	-2.12 (-2.68)	-1.80 (-2.20)	-2.34 (-2.19)
SD	-.092 (-.88)	-.072 (-.55)	-.016 (-.09)	.16 (.39)	-.98 (-2.24)	.76 (.16)
PURB	.005 (2.39)	.005 (2.16)	.003 (1.25)	-.17 (-2.06)	-.12 (-1.63)	0 (.01)
C	.286 (1.94)	.408 (2.27)	.727 (2.82)	43.27 (7.42)	39.83 (6.87)	29.37 (3.91)
R <sup>2</sup>	.22	.24	.28	.51	.51	.53
N	41	34	28	41	34	28

NOTE.—Sample A = all states (excluding mountain states); sample B = all states which ever passed maximum-hours laws; sample C = all states which had passed maximum-hours laws by 1917. Numbers in parentheses are *t*-values.

If the intent of maximum-hours legislation was to benefit women in general by protecting them from the harsh demands of the marketplace, states in which a greater proportion of manufacturing workers were women (i.e., in which there was a relatively large group who stood to gain from the laws) should have passed more restrictive laws and should have passed them earlier ( $\beta_{11} > 0$  and  $\beta_{21} < 0$ ). On the other hand, if the intent of the laws was to suppress potential competition from immigrant women, states in which foreign-born women were a larger part of manufacturing employment in the early period should have passed earlier and more restrictive laws ( $\beta_{12} > 0$  and  $\beta_{22} < 0$ ).

In the northern and more urbanized states, the cost of organizing support for maximum-hours legislation should have been lower; hence maximum-hours legislation should both have been adopted earlier and have been more restrictive in these states than in the South and less urbanized states ( $\beta_{13} < 0$ ,  $\beta_{23} > 0$ ,  $\beta_{14} > 0$ ,  $\beta_{24} < 0$ ).

These regressions were estimated for three samples: sample A, the 41 states previously analyzed; sample B, states which had passed maximum-hours laws by 1929; sample C, only those states which had passed such a law by 1914.

The hypothesis that the laws were indeed benevolent and designed to protect women does not seem to be supported by the data. The size of the group expected to benefit from protection is unrelated to the

TABLE 6

DEGREE OF RESTRICTIVENESS AND DATE OF PASSAGE  
OF MAXIMUM-HOURS LEGISLATION FOR WOMEN

	REST			DATE		
	Sample			Sample		
	A	B	C	A	B	C
PMFF00	-.007 (-.01)	-.007 (-.50)	-.014 (-.67)	.10 (.23)	-.07 (-.13)	.42 (.59)
FBW	-.003 (-.69)	.005 (.21)	.022 (.66)	-1.71 (-2.00)	-1.70 (-1.92)	-1.96 (-1.73)
SD	-.083 (-.14)	0 (0)	-.022 (-.12)	-.34 (-.08)	-1.92 (-.41)	4.47 (.70)
PURB	.002 (.69)	-.001 (-.24)	-.003 (-.83)	-.21 (-1.74)	-.10 (-.80)	-.11 (-.88)
RANK	-.069 (-1.42)	-.120 (-2.05)	-.125 (-1.67)	-.81 (-4.0)	.64 (.30)	-3.00 (-1.18)
TAFT	-.011 (-2.35)	-.014 (-2.76)	-.018 (-3.02)	-.25 (-1.34)	-.10 (-.56)	-.12 (-.59)
C	.652 (3.02)	.934 (3.71)	1.26 (4.09)	50.39 (5.60)	39.83 (4.39)	37.37 (3.58)
R <sup>2</sup>	.34	.42	.50	.54	.52	.56
N	41	34	28	41	34	28

NOTE.—See note to table 5.

speed with which states adopted maximum-hours laws in any sample and is negatively related to the degree of protection (restriction) adopted by states, at least as measured in 1914.

The hypothesis that the legislation was motivated in part by antiimmigration sentiment receives somewhat more support. The greater the relative employment of immigrant women in manufacturing as early as 1900, the earlier states were to pass maximum-hours laws. The coefficient FBW on DATE is negative and significant in all three samples. However, the manufacturing employment of foreign-born women in 1900 is unrelated to the degree of restrictiveness, at least as measured in 1914.

The percentage of state population residing in urban areas, PURB, is positively related to restrictiveness and negatively related to date of adoption, as expected. This may reflect in part that unions, alleged to be a major political force in support of maximum-hours laws for women, were more important in more urbanized states or that the electorate in these states held more interventionist political views.

In table 6 I introduce two new variables into the regression equations for REST and DATE to capture the effects of unionization and the political climate in a state. The variable RANK measures the rank ordering of states by percentage of the nonagricultural labor

force that is unionized in 1964. Direct information on unionization by state is not available before 1964 (U.S. Department of Labor 1966, p. 58, table 9-A). However, if the rank order of states remained relatively stable over the 50 years between 1914 and 1964, the later period data may provide useful information for explaining the incidence and restrictiveness of maximum-hours laws.

The variable TAFT measures the percentage of state popular vote won by Taft in the 1912 presidential election. It should reflect (inversely) the precedence of interventionist views among the state's electorate.

We can see from table 6 that both RANK and TAFT contribute to the explanation of REST, the restrictiveness of maximum-hours legislation in 1914, but neither contributes much to the explanation of DATE, the initial date of adoption. The lower the rank order of a state with respect to unionization in 1964—that is, the *higher* the percentage unionized—the more restrictive was the maximum-hours legislation in 1914. Similarly, the less interventionist the political views of the electorate, as measured by the vote for Taft in 1912, the less restrictive the legislation.

The qualitative effects of all other variables are unchanged by the introduction of RANK and TAFT, although the coefficients on PMFF00, FBW, and PURB became less significant.

In summary, maximum-hours laws for women were passed earlier in more urban states with higher concentrations of foreign-born women in manufacturing. Similarly, the laws were more restrictive, as measured in 1914, in more urban states, and in states where the electorate was more interventionist and where unions had more political power. These results suggest that the laws may have been motivated, at least in part, by antiimmigration sentiment.

#### IV. Conclusions

The period studied in this paper, 1900–1920, is particularly appropriate for an investigation of the impact of “protective” labor legislation because it is relatively free of other complicating legal and institutional factors that are prevalent today, such as an effective minimum wage, the income tax, affirmative action, and even an important union presence. Of course, this advantage is offset by the problems presented by historical data which were poorly reported and for which reporting conventions changed from census to census. Still, it would be difficult to isolate the effect of a labor policy today even as cleanly as I am able to do here for the early twentieth century.

The pattern of results is consistent with the hypothesis that support for early maximum-hours laws for women was motivated in part by a

desire to suppress competition by foreign-born women. Further, they demonstrate that one of the important features of much "protective" legislation today—from the minimum wage to occupational safety laws—has been an integral part of protective legislation from its earliest beginnings; namely, that the groups "protected" by these laws are not generally homogeneous in their perceived self-interest, and therefore the laws are designed to "protect" some more than others.

### References

- Abowd, John, and Ashenfelter, Orley. "Unemployment and Compensating Wage Differentials." Center for Mathematical Studies in Business and Economics Report 7923. Univ. Chicago, June 1979.
- Bernard, William S., ed. *American Immigration Policy: A Reappraisal*. New York: Harper, 1950.
- Brandeis, Louis D., and Goldmark, Josephine. *Women in Industry*. New York: Arno, 1969.
- Douglas, Paul H. "The Cobb-Douglas Production Function Once Again: Its History, Its Testing, and Some New Empirical Values." *J.P.E.* 84, no. 5 (October 1976): 903–16.
- Henry, Alice. *The Trade Union Woman*. New York: Appleton, 1925.
- Hourwich, Isaac A. *Immigration and Labor: The Economic Aspects of European Immigration to the United States*. New York: Putnam's, 1912.
- U.S. Department of Commerce, Bureau of the Census. *Occupations at the Twelfth Census*. Twelfth Census of the United States 1900 Special Reports. Washington: Government Printing Office, 1904.
- . *Population 1910 Occupation Statistics*. Vol. 4. Thirteenth Census of the United States 1910. Washington: Government Printing Office, 1914.
- . *Population 1920*. Fourteenth Census of the United States. Vol. 3. *Composition and Characteristics of the Population by States*. Washington: Government Printing Office, 1922.
- . *Population 1920*. Fourteenth Census of the United States. Vol. 4. *Occupations*. Washington: Government Printing Office, 1923.
- . *Population 1920*. Fourteenth Census of the United States. *Manufactures, 1919*. Washington: Government Printing Office, 1928.
- U.S. Department of Labor, Bureau of Labor Statistics. *Directory of National and International Labor Unions in the United States, 1965*. Bulletin no. 1493. Washington: Government Printing Office, 1966.
- U.S. Women's Bureau. *The Development of Minimum Wage Laws in the United States, 1912 to 1927*. Bulletin no. 61a. Washington: Government Printing Office, 1928. (a)
- . *Summary: The Effects of Labor Legislation on the Employment Opportunities for Women*. Bulletin no. 68. Washington: Government Printing Office, 1928. (b)
- . *Chronological Development of Labor Legislation for Women in the United States*. Bulletin no. 66. Washington: Government Printing Office, 1929.
- . *History of Labor Legislation for Women in Three States*. Bulletin no. 66-I. Washington: Government Printing Office, 1932.