HOURS OF WORK AND THE FAIR LABOR STANDARDS ACT: A STUDY OF RETAIL AND

WHOLESALE TRADE, 1938-1950

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ABSTRACT

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When the Fair Labor Standards was first implemented, a 5 percent reduction in the length of the standard work week reduced by at least 18 percent the proportion of men and women working more than 40 hours per week. In the south, the impact of the Act was even larger. The proportion of men working over 40 hours fell by 23 percent and the proportion of women by 43 percent. Although employers in the north responded to the overtime provisions of the Act by adjusting straight-time wages, southern firms were less able to adjust straight-time wages because the minimum wage provisions of the Act were much more binding in the south than in the north.

The wages, standard hours, and overtime premia of workers in the United States are regulated by the Fair Labor Standards Act of 1938 and by subsequent amendments to the Act. One of the aims of the Act in imposing a federal minimum wage and an overtime premium of one and a half times the straight-time wage for all hours above 40 was to eliminate "labor conditions detrimental to the maintenance of the minimum standard of living necessary for health, efficiency, and the general well-being of workers."[1] Another goal was to increase employment by spreading the amount of available work.[2] This goal still motivates most proposals to reduce standard hours or raise the overtime premium both in the United States and in Europe. Economic theory tells that a necessary, but not sufficient, condition for employment to increase is that hours must fall, but that the effect of reductions in the standard work week on hours worked is ambiguous.

This paper evaluates whether the Fair Labor Standards Act reduced weekly hours between 1938 and 1950 by comparing trends in weekly hours between workers in wholesale and retail trade. Workers in wholesale trade were covered by the Act in 1938 whereas retail workers, because of the successful lobbying efforts of the American Retail Federation, did not begin to be covered until 1961. Weekly hours were well above 40 in both of these sectors at a time when average hours in manufacturing were less than 40. I am therefore able to examine the effect of a substantial decline in the statutory work week on hours worked. I am also able to examine whether hours are less likely to fall when employers cannot adjust straight-time wages because the minimum wage was more binding in the south than in the north.

Past empirical work on the impact of reductions in the standard work week on hours

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[1]"Finding and Declaration of Policy," Fair Labor Standards Act of 1938, Public Act No. 718, 75th Congress, enacted June 25, 1938.

[2]In 1937 Roosevelt decried the increase in average hours per week between 1934 and 1936 because it "tends toward stepping up production without an equivalent stepping up of employment" (cited in Hunnicutt 1988: 242). However, in its final form, the Fair Labor Standards Act fell far short of the 30-hour week advocated by proponents of work-sharing.

worked is mixed. Using establishment level data for the United States Ehrenberg and Schumann (1982) find that the use of overtime is positively related to the ratio of quasi-fixed labor costs to the overtime wage. Trejo (1991, 1997) concludes from individual level data that expansions in overtime pay coverage from amendments to the Fair Labor Standards Act and from Supreme Court decisions in the 1970s had little effect on the weekly hours of the majority of workers because straight-time wages adjusted but did affect the weekly hours of minimum wage workers. His identification comes from a comparison of workers in the covered and non-covered sectors, but in the 1970s the covered sector may have been large enough to affect wages and hours of work in the non-covered sector. Covered individuals may also have been very different from those in the non-covered sector. Hamermesh and Trejo (forthcoming) find that when California's overtime penalty for all hours per day beyond 8 covering women was extended to men, the amount of daily overtime by California men fell substantially compared to that of men in other states and to women in California. Using data on British metal working firms Hart and Wilson (1988) found that a one hour decrease in the standard work week reduced work hours by 0.77 hours. Hunt (1999) finds that the move to a 35 hour work week in Germany led to sharp declines in actual hours worked, with a one hour fall in standard hours leading to a 0.85 to 1 hour fall in actual hours worked.

The paper begins with a discussion of the economics of reductions in the standard work week. It then uses this theory to predict the likely impact of the Fair Labor Standards Act on hours worked. The next two sections of the paper describe the identification strategy and present estimates of the effect of the Fair Labor Standards Act on hours worked and on the fraction of workers working over 40 hours. The next section examines whether firms partially offset the overtime provisions of the Act by adjusting straight-time wages and whether this adjustment was less in the south where the minimum wage was more binding. The paper concludes with some suggestive evidence on the impact of the Fair Labor Standards on employment.

1 Theory

The impact of reductions in the standard work week on hours worked and on employment is theoretically ambiguous and depends upon the hours of firms relative to both the old and new statutory work week and upon scale effects, substitution from workers to capital, and substitution between workers and hours.[3] Consider the case in which a firm takes the statutory work week, the straight-time hourly wage, and the rental rate of capital as given and chooses hours, employment, and capital when faced with a fixed cost of employment and an overtime premium. There are three possible types of firms: those who have already chosen hours below the new statutory work week (case 1); those who have already chosen hours below the old standard but above the new (case 2); and those who have already chosen hours above the old standard (case 3). For case 1 firms the new standard will have no immediate effect on hours worked and hence on employment. For case 2 firms the marginal cost of additional hours relative to the cost of hiring an additional worker would rise thus decreasing hours and increasing employment. For case 3 firms the marginal cost of additional overtime would remain unchanged but the marginal cost of an additional worker would rise because more of the worker's wages would need to be paid at overtime thus increasing hours and decreasing employment. Both case 2 and case 3 firms would tend to substitute away from labor and towards capital thus reducing hours of work and employment. At the same time the fixed costs of a particular worker-hours combination would increase leading to a negative scale effect which would reduce both hours of work and employment. These changes, in conjunction with those in the relative marginal cost of workers and hours, imply that for case 2 firms hours unambiguously fall but that the net effect on employment is indeterminate and that for case 3 firms employment unambiguously falls but that the net effect on hours is ambiguous. Theory therefore tells us that hours must necessarily decline for employment to increase, but hours

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[3]See Hamermesh (1993: 48-57) and Hart (1987: 91-130) for a review of the theory.

could decline because of scale effects and substitution from workers to capital. Because some firms will be in an overtime regime whereas others will not, the total effect of reductions in the standard will depend upon the relative numbers of each type of firm. Note also that a firm with a heterogeneous workforce could reduce overtime through any combination of reductions in the amount of overtime or in the proportion of workers working overtime.

A more general model needs to incorporate workers' supply behavior. If workers demand a higher wage rate for additional weekly hours then it is unlikely the wage rate will remain fixed when the firms' cost parameters change. Reductions in the standard work week will increase utility for workers in case 2 firms and may increase utility for workers in case 3 firms if hours in these firms fall. Such firms can either reduce such fixed labor costs as benefits or straight-time wages and still attract workers. Reductions in straight-time wages in turn would cause a substitution from workers to hours because of the fixed cost of hiring a worker and this may partially offset the decrease in hours predicted by the simple demand-side model for case 2 firms.[4] But, if the minimum wage is binding then firms will not be able to reduce straight-time wages, thereby leading to a greater reduction in hours for case 2 firms.

An increase in the minimum wage will also reduce hours by decreasing the ratio of fixed to variable costs, leading firms to substitute from hours to workers. Increases in employment resulting from this substitution from hours to workers will be offset by substitution from labor to capital and falling demand for the firms' output, both of which will magnify decreases in hours.

2   The Fair Labor Standard Act: Expected Results

The Fair Labor Standards Act of 1938 mandated that time and half be paid for overtime

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[4]Because reducing the wage affects both the marginal cost of an additional worker and the marginal cost of an additional hour, it is unlikely that any firm can completely offset overtime legislation.

after 44 hours beginning October 24, 1938, after 42 hours beginning October 24, 1939, and after 40 hours beginning October 24, 1940.[5] It also instituted a minimum wage of 25 cents per hour beginning October 24, 1938, a wage of 30 cents per hour beginning October 24, 1939, and one of 40 cents per hour beginning July 1, 1944. The minimum wage increased to 75 cents per hour with the 1949 amendments to the Act (effective January of 1950), a real increase of 47 percent over its 1939 level.[6]

The Fair Labor Standards Act covered employees engaged in interstate commerce or engaged in the production of goods destined for interstate commerce. Certain occupations (executives, administrators, professionals, and outside salespersons) were specifically exempted from the provisions of the Act as were employees of specific industries. Among the exempted employees were those of retail establishments whose greater part of sales were intrastate.[7] In 1943 67 percent of all employees in wholesale trade were covered by the Act whereas only 2 percent of retail trade employees were covered. The retail trade exemptions were strengthened in the 1949 exemptions to the Act and coverage was only slowly extended to retail trade workers with the 1961, 1964, and 1974 amendments.[8] I will therefore identify the impact of the FLSA on

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[5]For details about the Act and subsequent amendments, see Quester (1981), various issues of *Monthly Labor Review*, and Weiss (1944). Although the Act allowed exemptions to overtime regulation if a company guaranteed a suitable annual wage or fixed number of annual hours of employment, in 1947 only 63 companies had applied for exemptions (Seastone 1955). Seltzer (1995) finds that the Act was passed with the support of legislators strongly influenced by high wage industry, labor unions, the Democratic party, and left-wing ideology and over the opposition of legislators strongly influenced by agriculture, low wage industries (many of which were concentrated in the south), retail and wholesale trade, the Republican party, and right-wing ideology.

[6]The average hourly manufacturing wage in the United States in 1937 was 62 cents per hour (Series D 802-810 in United States Bureau of the Census 1975: 169). In 1997 dollars these wage minima are $2.85, $3.46, $3.65, and $5.06, respectively.

[7]Exemptions from the overtime provisions of the Act were justified by the American Retail Federation on the grounds that hours of retail establishments were determined by public demand and therefore not directly under employer control. Exemptions from the minimum wage requirements were justified on the grounds that minimum wages would place an unfair burden on retail establishments, because, unlike production firms, retail sales firms did not have the option of substituting capital for labor to offset the higher labor costs resulting from the minimum wage (Fritsch 1981: 13).

[8]The 1949 affected relatively small numbers of workers via language changes and by specifically exempting

hours worked between 1938 and 1940 by using retail trade as a control group for wholesale trade.

When the FLSA was passed overtime was not unknown, but, at least in the trade sector, it was not the norm. Among independent wholesale grocers, 20 percent of office employees, 30 percent of warehouse employees, and 27 percent of delivery employees were compensated for overtime. The most frequently used basis for compensating office employees was compensatory time off whereas for warehouse and delivery employees it was time and one half (United States Bureau of Foreign and Domestic Commerce 1941). Most likely, overtime was paid after 48 hours.[9]

The theory discussed in the previous section illuminates the likely impact of the FLSA on hours worked. Most firms that reduced hours probably did not substitute labor for capital.[10] Although smaller firms probably scheduled longer hours for their employees, suggesting that scale effects may have increased hours, the total magnitude of scale effects was probably small.[11] Recall that if scale and capital-labor substitution effects are virtually zero in the simple demand side analysis then for case 2 firms hours of work fall and employment increases and for case 3 firms hours of work increase and employment falls.

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employees manufacturing goods on site for sale at retail (e.g. bakeries). Because of changes in retail trade (discussed later in the text), examining the impact of the amendments extending coverage to retail trade workers is unlikely to be informative.

[9]Although the survey by the United States Bureau of Foreign and Domestic Commerce (1941) did not specify when overtime was paid, the 48 hour week was the most common in union agreements in retail trade, an industry with similar average hours prior to the passage of the FLSA (*Monthly Labor Review*, February 1938). Information on union agreements in wholesale trade were not collected.

[10]In the wholesale grocery trade 15 percent of all houses that reduced hours reported adjusting to the overtime provisions of the FLSA by adding mechanical equipment (United States Bureau of Foreign and Domestic Commerce 1941).

[11]Most analyses (e.g. Hamermesh 1993: 50) assume that the firm's optimal hours are independent of scale because there is no evidence in recent data that employees' hours differ by firm size. But, at least in the wholesale grocery trade in 1938, 71 to 82 percent of small houses (as measured by the dollar volume of sales) scheduled work weeks of 45 hours or more whereas only 38 to 56 percent of large houses did so (United States Bureau of Foreign and Domestic Commerce 1941). Even so, the total magnitude of scale effects may still have been small. Average sales per independent wholesale grocery house were the same in the first half of 1938 as in the first half of 1939 (United States Bureau of Foreign and Domestic Commerce 1941).

The demand-side analysis also suggests that hours worked should have fallen more sharply when the FLSA was first imposed then when the subsequent mandated reductions in the standard work week took effect. Because a large number of firms were affected and because the majority of firms did not compensate for overtime, the institution of a 44 hour per week standard in October of 1938 probably led to a large decline in hours worked. Among independent wholesale grocers 62 to 78 percent (far more than paid any overtime) scheduled regular work weeks of over 44 hours prior to the institution of a standard work week (United States Bureau of Foreign and Domestic Commerce 1941). The theory suggests that reductions of the statutory work week from 44 hours to 42 in October of 1939 and from 42 hours to 40 in October of 1940 should lead to a decline in the work week among firms with work weeks of 43 to 44 hours in 1939 and 41 to 42 hours in 1940 (case 2 firms) and have an ambiguous effect on the hours of firms with work weeks of over 44 hours in 1939 and over 42 hours in 1940 (case 3 firms). Although no aggregate numbers exist showing the hours distribution of all wholesale trade firms, Table 1 suggests that, at least in the wholesale grocery trade, high hours firms were in the majority. Forty-six to 68 percent of independent wholesale grocery firms had work weeks of over 44 hours just before the standard work week was reduced to 42 hours whereas only 22 to 38 percent were working 43 to 44 hours (United States Bureau of Foreign and Domestic Commerce 1941). Furthermore Table 1 also suggests that relatively few firms working overtime in May of 1939 (case 3 firms) shifted out of an overtime regime in response to the reduction of the statutory work week from 44 to 42 hours in October of 1939.[12] Recall that theory predicts an ambiguous change for these firms but an increase in hours if scale and capital-labor substitution are virtually 0. In contrast, a substantial number of firms working 43 to 44 hours (case 2 firms) shifted to 40 to 42 hour schedules, as predicted by the theory.

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[12]Of course, not all firms with work weeks above the statutory work week were necessarily paying overtime.

Accounting for substitution from hours to workers induced by increases in the minimum wage suggests that hours worked fell more sharply when the FLSA was first imposed then when later reductions in the statutory work week took effect. The largest increase in the minimum wage was its actual institution in 1938. In 1939 it rose 20 percent and remained unchanged in 1940. Of course, because the minimum wage was more binding in 1939 than in 1938, fewer firms could adjust straight-time wages and this may have led to greater declines in hours worked in 1939 relative to 1938.

The theory predicts that the impact of the Fair Labor Standards Act will differ in the north and in the south because the minimum wage was more binding in the south.[13] If the minimum wage is binding, then firms cannot adjust straight-time wages. There can therefore be no offsetting effects on hours for case 2 firms from reductions in straight-time wages that lead to a substitution from workers to hours. Furthermore, the minimum wage would directly contribute to hours declines by lowering the ratio of fixed to variable costs, thereby inducing substitution from hours to workers.

3   The Fair Labor Standards Act: Identification

Recall that I identify the impact of the FLSA on hours worked by using retail trade as the control group for wholesale trade. I use two types of data. I use monthly time series from 1935 to 1941 (based on firm surveys by the BLS) to examine the effect of the FLSA when it was first imposed, as well as the effect of subsequent reductions in the statutory work week mandated by the FLSA. However, a drawback of these data are that I cannot control for any firm or individual

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[13]Of the 690,000 workers earning less than 30 cents per hour in the spring of 1939, 54 percent were southern. Between 1938 and 1940 the average percentage increase in the southern seamless hosiery industry was three times larger in the south than in the north. The October 1939 minimum wage increase affected 44 percent of textile workers in the south but only 6 percent in the north. In lumber and timber half of southern workers in 1939-1940 had hourly wages at or near the legal minimum (Wright 1986: 219-220).

characteristics and that I only observe average hours per week.

I therefore also use individual level data from the 1940 and 1950 censuses, excluding managers and professionals (many of whom were not covered by the FLSA) and employees in eating and drinking establishments (to ensure greater comparability in occupations across retail and wholesale trade).[14] Because the final statutory decrease in the length of the standard work week was in October of 1940 and the reference week for the hours question in the 1940 census was March 24-30 I can use the 1940 and 1950 censuses to examine the impact of a 2 hour reduction in the statutory work week on hours worked. Because the 1949 amendments raised the minimum wage, my estimate will capture the effects of both the increase in the minimum wage and of the reduction in the statutory work week. However, examining part-time workers will allow me to determine the likely magnitude of increases in the minimum wage on hours because the hours of these workers will be affected by the minimum wage but not the overtime provisions of the Act.

My strategy is therefore to calculate the double difference

$$\Delta^2 = [F_{W,1950} - F_{R,1950}] - [F_{W,1940} - F_{R,1940}]$$

where F is either total hours worked or the fraction working a specific number of hours, W denotes wholesale trade, R denotes retail trade, and 1940 and 1950 denote the census years. Because the characteristics of the average worker in wholesale trade differed from those of the average worker in retail trade I control for observable characteristics by adjusting for age, education, nonwhite, metropolitan residence, region of residence, and occupation group.[15] That is, I pool both sectors

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[14]I use the integrated public use samples of Ruggles and Sobek (1995). The total sample size in 1940 is 47,030 and in 1950 69,574.

[15]I cannot control for type of wholesale trade industry in 1940. The coefficients on β_4 remain virtually unchanged when occupation dummies are excluded from the regression, suggesting that dissimiliarity in broad occupational groups is not a problem in this sample. In fact, occupations were similar at the three digit census occupational code.

over both years and estimate ordinary least squares regressions of the form

$$\mathbf{f} = \beta_0 + \beta_1\mathbf{X} + \beta_2\text{WHOLE} + \beta_3 1950 + \beta_4(\text{WHOLE} \times 1950) \tag{1}$$

where an element of the vector $\mathbf{f}$ is either total hours worked or is equal to one if the individual worked a certain number of hours and is 0 otherwise, the matrix $\mathbf{X}$ consists of age and its square and dummies for educational attainment, metropolitan residence, region of residence, and occupation group (clerical, sales, service, crafts, operative, and laborer where clerical is the omitted dummy), the vector WHOLE is a dummy for wholesale, and the vector 1950 is a dummy equal to one if the year was 1950.[16] WHOLE $\times$ 1950 is the interaction between wholesale trade and the year dummy and its coefficient, β_4, is the adjusted double difference.[17] I estimate double differences for total hours worked among all workers and overtime-time workers (> 42 hours per week). I also estimate double differences for the fraction of workers working exactly 40 hours, for those working above 40 hours, for those working above 40 to 42 hours, and for those working over 42 hours. I generally restrict the sample to individuals working between 35 and 50 hours per week to exclude part-time workers and obvious outliers, but I also present estimates for the entire sample both for comparison and to examine the impact of the FLSA on the hours of part-time workers (< 35 hours per week) and on the proportion of high hours workers (> 48 hours per week). The theory predicts that the hours of part-time workers should be unaffected (except by the minimum wage provisions) whereas those of individuals working above 40 and up to 42 hours (case 2 firms) should fall. Provided that scale and capital-labor substitution effects are very small, the hours of over-time workers (case 3 firms) should increase, but if these effects are large then hours may

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[16]The coefficients of the linear probability models were similar to the derivatives of probit models.

[17]When I included interactions between the year dummy and the variables in the matrix $\mathbf{X}$ to control for time trends in observable characteristics I obtained virtually identical results.

fall. The net effect on hours worked is therefore ambiguous. The fraction working over 42 hours should remain the same or fall (even though their hours may increase) because there should be no individuals moving up to hours above the old standard. The fraction working more than 40 to 42 hours may either fall (because case 2 firm workers drop to 40 hours) or rise (because hours fall for case 3 firm workers). The proportion working exactly 40 hours will increase.

A necessary condition for retail trade to be a valid control for wholesale trade is that there were no exogenous changes affecting hours. Although some states passed laws regulating the standard hours of women, relatively few did, and those that did imposed a 48 hours standard thus affecting a relatively small proportion of employees. During the war and the post-war years employers were increasing retail store hours by shortening their employees' work week and adopting multiple shifts, but the more dramatic declines in the length of the work week did not occur until after 1950 when the diffusion of car ownership and suburbanization increased consumer demand for longer shopping hours (Oi 1988). Retail trade firms faced with a declining supply of young, unmarried female workers because of increases in school attendance, declines in age at first marriage, and the baby boom sought to accomodate the work schedule demands of married women (Goldin 1990: 175, 181). These declines in the length of the work week in retail trade suggest that negative estimates of the impact of the FLSA on hours worked between 1940 and 1950 will be underestimates whereas positive estimates may be overestimates.

I may underestimate the impact of reductions in the standard work week in 1939 and 1940 because employers already knew of the scheduled declines by 1938 and may therefore have made adjustments in their work schedules well before the scheduled declines. However, employees may have had few incentives to adjust before the scheduled reductions because enforcement during the first two years of the Act was unlikely to be immediate. According to a 1940 review of the Act, "In the early period of operation the Wage and Hour Division was principally occupied with the intrepretation of the provisions of the law and the issuance of regulations formulating policy and

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enforcement procedures. Now that the administrative ground work has been laid, the enforcement of legislation has become the major task."[18] If enforcement in the early years of the Act was known to be lax, I will underestimate the impact of the Act in 1938.

One condition that may not be met for retail trade to serve as a control group for wholesale trade is that wholesale industry not change in response to the Act. If wholesalers could withdraw from interstate commerce (as did the southern lumber firms studied by Seltzer (1997)), then I will underestimate the impact of the FLSA. Another condition that may not be met is that there be no migration between sectors. The net effect of FLSA may have been to reduce employment in the wholesale sector if the minimum wage provisions of the Act outweighed any employment increases due to the overtime provisions. If this reduction in employment led to migration to the retail sector then this would tend to reduce wages in the retail sector and increase hours and lead me to overestimate the negative impact of the FLSA on hours worked.

Additional factors will lead me to underestimate the impact of the FLSA on hours worked. Firstly, not all workers in wholesale trade were covered, only those engaged in interstate commerce. Secondly, because a demand side analysis suggests that hours worked fall unambiguously only for case 2 firms estimates of the impact of the FLSA derived from the census data will underestimate the total impact of the FLSA even when they precisely estimate the impact of the final 2 hour reduction in the length of the standard work week. Finally, because the possibilities of substituting labor for capital are likely to be small in the trade sector relative to other sectors, I will be underestimating the impact of the FLSA on other sectors of the economy.

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[18]*Monthly Labor Review*, September 1940, p. 562. The review reported that as of June 1940, 42,000 establishments had been complained against, requiring 32,000 complaint inspectors, and that a full 26,000 complaint inspections were still pending completion. In only 447 cases had legal action been taken.

4   Hours and the Fair Labor Standards Act

Figure 1 presents average weekly hours by month in wholesale and retail trade from January 1935 to November of 1941. Hours worked in both wholesale and retail trade rose during the 1935-1937 recovery, with a somewhat greater increase in retail trade, and then fell during the 1937-1938 recession. The economy began to recover at the end of 1938 but whereas hours rose in retail, they fell sharply in wholesale trade after October of 1938, once the standard work week of 44 hours was in place. Average weekly hours in retail trade were only 0.2 hours higher than in wholesale trade in September of 1938 but by September of the next year were 1.3 hours higher, suggesting that the imposition of mandatory overtime (combined with the minimum wage) reduced hours worked by 1.1 hours. Between November of 1938 and September of 1939 the average monthly difference in weekly hours was 1.2 but rose to 1.7 hours between November of 1939 and September of 1938, implying that the reduction of the statutory work week from 44 hours to 42 reduced hours worked by 0.5 hours. The average monthly difference in weekly hours remained at 1.7 hours between November of 1940 and September of 1941, suggesting that the decline in the standard work week from 42 hours to 40 had little impact on average hours worked.

The trends observed in Figure 1 are found in regression time series analysis as well. When I regressed the difference in weekly hours in the two sectors on the lagged difference, seasonal dummies, and dummies for each successive decrease in the statutory work week, I found that the initial imposition of the FLSA increased the hours difference in the two sectors by 0.5 hours (and that this increase was statistically significant), that the reduction from 44 to 42 hours increased the hours difference by an additional 0.2 hours (but that this increase was not statistically significant), and that the reduction from 42 to 40 hours increased the hours difference only by an additional .02 hours (both a qualitatively small and statistically insignificant amount).[19]

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[19]I reject the hypothesis that the FLSA changed the covariance of wholesale and retail trade but that may be

Although the data in Figure 1 show no declines in hours worked when the work week was reduced from 42 to 40 hours, these aggregate numbers may disguise hours declines. I cannot rule out that the proportion working more than 40 hours decreased, that the proportion working 40 to 42 hours decreased while that working over 42 hours increased, or that the proportion working over 42 hours decreased but that their hours of work increased. I therefore turn to census data.

Figures 2 and 3 illustrate trends in the distribution of hours worked in wholesale and retail trade from 1940 to 1950. Between 1940 and 1950 when the standard work week fell by 2 hours the fraction of men and women working 41 to 49 hours in wholesale trade declined substantially, but changed very little in retail. The small spike at 42 hours in 1940 was larger in wholesale relative to retail trade, and by 1950 had completely disappeared in wholesale trade. Although the proportion of employees working exactly 40 hours per week increased in both sectors, the increase was larger in the wholesale sector. The implied double difference estimate of the impact of the FLSA on the proportion working exactly 40 hours was 0.091 ($\hat{\sigma} = .008$) for men and 0.101 ($\hat{\sigma} = .015$) for women and the estimated effect on the proportion working more than 40 hours was -0.087 ($\hat{\sigma} = .008$) for men and -0.106 ($\hat{\sigma} = .015$) for women.

Double difference estimates, adjusted for individual characteristics, of the impact of the FLSA on non-professionals and non-managers are given in Table 2. This table shows that for all men and women total hours worked in wholesale trade rose relative to those worked in retail. This increase was largely due to an increase in the proportion working over 48 hours per day. Relative hours fell for men and women working between 35 and 50 hours per week, with a 2 hour decline in the standard work week leading to a decline of 0.4 hours among men in wholesale trade and a statistically insignificant one of 0.2 hours among women. Among men working part-time relative hours of wholesale workers increased slightly (but not significantly), suggesting that substitution

because the time series is short.

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from hours to workers induced by the minimum wage is likely to be small. Among women working part-time relative hours fell but again the standard error was large. The hours of both men and women working more than 42 hours per week increase, suggesting that either scale and capital-labor substitution effects are small or that this effect does not arise from the FLSA. Recall that positive estimates will overestimate the impact of the FLSA. A shortening of the typical work shift in retail trade may be the primary explanation for the relative hours increases observed among wholetrade workers.

The increase in average hours in wholesale relative to retail trade among individuals working all hours does not imply that the proportion working over 40 hours rose. In fact, for these individuals the 5 percent decline in the standard work week led to a 13 percent decline (-0.08) in the fraction of men working more than 40 hours per week and a 17 percent decline (-0.10) in the fraction of women working more than 40 hours. The fraction working exactly 40 hours rose much more among wholesale relative to retail workers. Among women the relative decline in the proportion working over 40 and up to 42 hours was greater than that among women working over 42 hours. Similar patterns are observed among those working 35 to 50 hours a week. Because I cannot observe straight-time wages I cannot tell if the decline in hours worked was greater among workers earning the minimum wage. However, when I estimate hourly wages from the previous year's wage and salary income divided by the product of weeks worked last year and hours worked during the reference week I find that hours fell by more (although not by a statistically significantly amount) among workers whose estimated hourly wage wage was equal to or less than the minimum wage. For men earning the minimum wage or less the 2 hour decline in the standard work week led to a decline of -0.7 hours whereas for those earning above the minimum wage it led to a decline of -0.3 hours.[20]

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[20]I also examined whether the decline in hours was sharper among workers in metropolitan areas but although the fall in hours was steeper the difference was small and statistically insignificant.

The relative decline in hours worked and in the proportion working exactly 40 hours, the proportion working over 40 hours, the proportion working over 40 and up to 42 hours, and the proportion working over 42 hours was much greater in the south.[21] There, the 2 hour or 5 percent decline in the standard work week led to a 1 hour decline in total hours worked and a 23 percent decline in the proportion of men working over 40 hours per week and a 42 percent decline in the proportion of women working over 40 hours per week. Differences in hours declines between north and south were statistically significant. Because hours of part-time workers were unaffected by the FLSA, it seems unlikely that these differences could have arisen from greater substitution from hours to workers because the minimum wage led to a greater wage increase in the south than in the north. In the next section I therefore examine whether these differences could be attributed to minimum wage provisions being more binding in the south.

5   Compensation and the Fair Labor Standards Act

The decline in total work hours may be affected by firms' ability to adjust such fixed costs per workers as benefits or straight-time wages. Although I cannot test whether firms reduced benefits, I can examine whether the hours decline in the south was larger because southern wages were at or near the minimum wage and therefore employers could not adjust straight-time wages.[22]

If the straight-time wages of individuals can adjust then the yearly earnings of individuals working the same weekly hours and weeks per year at jobs that differ only in terms of FLSA

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[21]The southern states are defined as Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, Virginia, Kentucky, Maryland, Oklahoma, Tennessee, West Virginia, and the district of Columbia.

[22]Although I have no evidence from retail trade, among independent grocery wholesalers the percentage who were not granting paid sick leave increased from 13 to 24 percent between May of 1938 and May of 1940 and the percentage not granting paid vacation from 12 to 17 percent (United States Bureau of Foreign and Domestic Commerce 1941).

coverage should be the same. That is,

$$wHW \;=\; w^c HW \qquad\qquad \text{if } H <= \bar{H}$$
$$wHW \;=\; w^c[\bar{H} + b(H - \bar{H})]W \quad \text{if } H > \bar{H}$$

where w and w^c are hourly wages in the covered and noncovered sectors, respectively, H is hours worked per week, $\bar{H}$ is the standard work day (42 hours in 1940 and 40 in 1950), W is weeks worked per year, and b is the overtime premium (1.5 in both 1940 and 1950). For an individual in the covered sector, income, I can be rewritten as

$$I = w^c H[1 + (b - 1)(H - \bar{H})/H]W \,. \tag{2}$$

Taking logarithms and using the approximation $\log(1 + (b-1)(H-\bar{H})/H) \approx (b-1)(H-\bar{H})/H$, this expression becomes

$$\log(I) \approx \log(w^c) + \log(H) + \log(W) + (b - 1)(H - \bar{H})/H \,. \tag{3}$$

Under the assumption that the logarithm of the wage depends upon the vector of worker characteristics, equation 2 can then be estimated by a regression of the form

$$\log(I) = \mathbf{X}\beta + \delta[(H - \bar{H})/H] \times \text{WHOLE} \times \text{OVERTIME} \,, \tag{4}$$

where X is a matrix whose columns consists of a vector of ones, vectors of demographic characteristics (age and age squared and dummies for nonwhite and female), vectors of dummies indicating educational attainment, occupation group, region of residence, urban residence, whether the individual was in wholesale trade, and whether the year was 1950, vectors of weekly hours worked and its square and of weeks worked per year and its square (under the assumption that the hourly

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wage depends upon hours worked), and vectors of the logarithm of weekly hours and the logarithm of weeks worked per year.[23] WHOLE is a dummy variable equal to one if the individual was in wholesale trade and OVERTIME is a dummy variable equal to one if the individual worked more than 42 hours in 1940 and more than 40 hours in 1950. If straight-time wages adjust perfectly to keep earnings constant in response to overtime legislation then the coefficient δ is equal to zero whereas if they cannot then the coefficient is equal to one half. Because annual income is for the calendar year prior to that in which the census was taken, my estimate of δ is most likely to be equal to one half in 1940 because the minimum wage was most binding during 1939.[24]

Estimates of δ suggest that while in the country as a whole straight-time wages did not adjust perfectly to keep earnings constant, there was some adjustment (see Table 3, $\hat{delta} = 0.31$). This adjustment was greater in the north than in the south, particularly in 1940. Pooling both 1940 and 1950, I can reject both the hypothesis that $\hat{\delta} = 0$ and the hypothesis that $\hat{\delta} = .5$ for the north and the hypothesis that $\hat{\delta} = 0$ for the south, but I cannot reject the hypothesis that $\hat{\delta} = .5$ for the south. I can reject the hypothesis that the coefficients on δ are equal in the north and in the south. Running separate regressions for 1940 and 1950, I cannot reject the hypothesis that $\hat{\delta} = .5$ for the south in 1940, but I can reject this hypothesis for the north. I cannot reject the hypothesis that $\hat{\delta} = .5$ both in the north and in south in 1950.

Approximately one third of the difference in $\hat{\delta}$ between the north and the south can be attributed to minimum wage provisions being more binding in the north, suggesting that employees bore some of the costs of the overtime provisions of the FLSA. Consider the following calculation. Estimates of δ can be written as $\delta = c\delta^c + (1 - c)\delta^u$ where c is the fraction of

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[23]The regression specified in equation 4 estimates a wage-hours locus, not a labor demand or supply equation.

[24]Wages in 1939 will be affected by the minimum wage increase of 1938 and 1939, but the minimum wage increase of 1944 mandated by the 1938 Act may not have been binding because the price level increased by 73 percent between 1938 and 1944.

individuals constrained by the minimum wage, δ^c is the constrained δ and δ^u is the unconstrained δ. Although we do not have precise numbers on the fraction of the labor force for whom the minimum wage was binding, the census suggests that in 1940 this fraction was 12 percent in the north and 30 percent in the south. Because $\delta^c = 0.5$, δ^u in the north is therefore 0.13 $(.169 = (.12)(.5) + (.82)(\delta^u))$. If the minimum wage had been as binding in the north as in the south then the estimated δ in 1940 in the north would have been 0.24. Assuming a δ of 0.5 for the south, 31 percent of the difference in δ between north and south could be attributed to the minimum wage provisions $((.5 - .24)/(.5 - .17))$.

6   Implications

This paper has shown that when the Fair Labor Standards Act was first introduced it had a substantial impact on total weekly hours worked in wholesale trade. In September of 1938 average weekly hours in wholesale trade were only 0.2 hours lower than in retail trade but by the following September were 1.3 hours lower. The 2 hour decline in the length of the standard work week in October of 1940 reduced total weekly hours by 0.413 ($\hat{\sigma} = 0.126$) hours for men in wholesale trade working 35 to 50 hours, but by only 0.2 ($\hat{\sigma} = 0.183$) hours for women. This 5 percent decline in the standard work week also led to a decline of at least 18 percent in the proportion of men and women working more than 40 hours per week. Among both men and women the proportion working over 40 hours declined by 0.111 ($\hat{\sigma} = 0.013$ for men, $\hat{\sigma} = 0.028$ for women). Declines in total weekly hours and in the proportion working a 40 hour work week were larger in the south than in the north, with weekly hours worked of southerners falling by one hour and the proportion of southern men working over 40 hours a week falling by 23 percent and of southern women by 43 percent. Among southern men working a 35 to 50 hour work week hours declined by 0.997 ($\hat{\sigma} = 0.997$) and the proportion working over 40 hours declined by 0.162 ($\hat{\sigma} = 0.022$). The declines for southern women were 1.316 ($\hat{\sigma} = 0.250$) and 0.303 ($\hat{\sigma} = 0.045$),

respectively. In contrast, hours for northern men fell by only 0.236 ($\hat{\sigma} = 0.159$) and rose for women. The fraction working over 40 hours fell for both men and women in the north, but by only 0.094 ($\hat{\sigma} = 0.017$) for men and 0.055 ($\hat{\sigma} = 0.020$) for women. The decline in hours of work of southerners was greater because the minimum wage provisions of the FLSA had a much bigger impact on southern wages than on northern wages thus preventing southern firms from adjusting straight-time wages in response to overtime provisions. Adjustment of straight-time wages in the north, however, was not complete.

Even if the overtime provisions of the FLSA increased employment, the minimum wage provisions probably decreased it. Monthly employment in both retail and wholesale trade sectors was rising after 1938, but employment in wholesale relative to retail trade barely changed after October of 1938.[25] Among independent wholesale grocers who reduced hours, 41 percent reported adding more help, but the increase in the number of employees was modest (United States Bureau of Foreign and Domestic Commerce 1941). The more common ways of adjusting to the overtime provisions of the FLSA were to stagger hours (done by 57 percent of houses) and to restrict hours of operation (done by 54 percent of houses). The FLSA was therefore mainly effective in decreasing hours of work.

The decline in the total work week induced by the FLSA in its early years was larger than that induced by extensions of FLSA coverage in the 1970s (Trejo 1991, 1997), but less than hours declines induced by recent reductions in the standard work week in Europe (Hunt 1999; Hart and Wilson 1988). American firms in the 1930s and 1940 may have been less able to adjust straight-time wages or reduce benefits than American firms in the 1970s. Relatively few firms in the 1930s and 1940s offered benefits. Estimates of the extent of adjustment of straight-time wages were less than those observed by Trejo (1991) and were substantially less in the south where the

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[25]The data are available in various issues of *Monthly Labor Review*. Time series regression analysis rejects the hypothesis that there was a structural break in the series in October of 1938.

decline in hours was largest. Nonetheless, the extent of adjustment may have been larger in the United States in the 1930s and 1940s than in Europe today where higher unionization rates and national wage agreements may impede the adjustment of benefits and of straight-time wages.

The findings suggest that reductions in the standard work week are most effective in reducing hours worked if these reductions are accompanied by minimum wage legislation that is binding on a large proportion of the population. But, if this is the precondition for hours reductions, it seems unlikely that overtime provisions could lead to greater employment.

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Table 1. Percentage of Independent Wholesale Grocery Houses According to the Number of Hours in the Scheduled Work Week of Regular Full-Time Employees in the Office, Warehouse, and Delivery, May 1938, May 1939, May 1940

	Office			Warehouse			Delivery		
Hours	May 1938	May 1939	May 1940	May 1938	May 1939	May 1940	May 1938	May 1939	May 1940
< 40	0.2	0.2	1.4	0.2	0.2	1.2	0.6	0.6	0.8
40-42	5.7	15.1	34.1	3.7	9.6	30.8	2.1	9.5	23.7
43-44	32.5	38.4	24.1	18.1	27.0	12.1	14.2	22.2	10.8
45-50	32.5	26.4	24.1	31.6	31.4	31.8	33.4	29.4	34.5
51-56	20.2	14.9	12.7	31.2	24.5	19.3	31.3	27.9	22.4
57+	9.0	5.1	3.7	15.2	7.3	4.8	8.4	10.4	7.8

Source: Results are from a survey of the wholesale grocery trade by the United States Bureau of Foreign and Domestic Commerce (1941). Firms were questioned retrospectively about hours and payrolls. Because of when the survey was conducted results for May 1941 are unavailable.

Table 2. Impact of FLSA on Average Hours, Average Hours Conditional on Working Hours, and on Fraction Working Exactly 40 Hours, Over 40 Hours, Over 40 and Up to 42 Hours, Over 42 Hours, and Over 48 Hours: Double Difference Estimates

	Hours (H)			Hours Group				
	H	H|H<35	H|H>42	40	>40	40-42	>42	>48
All hours								
All regions								
Men	0.617	0.231	2.049	0.090	-0.080	-0.031	-0.049	0.050
	(0.535)	(0.822)	(0.279)	(0.009)	(0.015)	(0.005)	(0.017)	(0.010)
Women	0.180	-1.856	0.760	0.088	-0.095	-0.081	-0.013	0.041
	(0.610)	(1.747)	(0.455)	(0.032)	(0.024)	(0.010)	(0.021)	(0.010)
North								
Men	0.476	0.117	1.739	0.082	-0.073	-0.030	-0.042	0.050
	(0.599)	(1.260)	(0.241)	(0.011)	(0.020)	(0.005)	(0.022)	(0.010)
Women	0.048	-1.683	0.750	0.048	-0.056	-0.079	0.023	0.039
	(0.715)	(2.110)	(0.601)	(0.029)	(0.023)	(0.011)	(0.022)	(0.011)
South								
Men	0.985	0.652	2.834	0.109	-0.102	-0.036	-0.066	0.052
	(1.087)	(1.517)	(0.549)	(0.023)	(0.023)	(0.011)	(0.031)	(0.024)
Women	0.878	-2.809	0.513	0.236	-0.220	-0.092	-0.128	0.042
	(0.813)	(3.070)	(0.562)	(0.051)	(0.035)	(0.021)	(0.028)	(0.020)
35-50 hours								
All regions								
Men	-0.413		0.390	0.105	-0.111	-0.032	-0.078	
	(0.126)		(0.281)	(0.011)	(0.013)	(0.006)	(0.016)	
Women	-0.157		0.391	0.071	-0.111	-0.086	-0.023	
	(0.183)		(0.281)	(0.034)	(0.028)	(0.011)	(0.023)	
North								
Men	-0.236		0.529	0.090	-0.094	-0.031	-0.063	
	(0.159)		(0.114)	(0.014)	(0.017)	(0.007)	(0.020)	
Women	0.208		0.569	0.024	-0.055	-0.082	0.027	
	(0.181)		(0.389)	(0.024)	(0.020)	(0.012)	(0.018)	
South								
Men	-0.997		-0.002	0.156	-0.162	-0.039	-0.124	
	(0.240)		(0.192)	(0.023)	(0.022)	(0.017)	(0.031)	
Women	-1.316		0.158	0.242	-0.303	-0.107	-0.195	
	(0.250)		(0.254)	(0.054)	(0.045)	(0.022)	(0.035)	

Notes: Numbers indicate increase or decline in wholesale relative to retail trade of fraction of individuals working given number of hours. Estimated from ordinary least squares regressions on the 1940 and 1950 censuses for wage and salary workers aged 18 to 64. Professionals, managers, and workers in eating and drinking establishments were excluded. Covariates include age and age squared and dummies for educational attainment, metropolitan residence, region of residence, and occupation group. Robust standard errors in parentheses.

Table 3. Estimates of δ

		Reject hypothesis H_0	
		$H_0 = 0$ $H_1 \neq 0$	$H_0 = .5$ $H_1 \neq .5$
Pooled Data			
All regions	0.309 (0.083)	yes	yes
North	0.268 (0.102)	yes	yes
South	0.692 (0.149)	yes	no
1940			
All regions	0.281 (0.120)	yes	yes
North	0.169 (0.115)	no	yes
South	0.587 (0.334)	yes	no
1950			
All regions	0.325 (0.114)	yes	yes
North	0.381 (0.146)	yes	no
South	0.150 (0.252)	no	no

Notes: Robust standard errors in parentheses. Estimated from ordinary least squares regressions (see text). The sample was restricted to non-managers and non-professionals wage and salary workers age 18 to 64 working 35 to 50 hours per week.

Figure 1. Average Weekly Hours in Retail and Wholesale Trade, January 1935–November 1941

Notes: The data are based upon monthly surveys by the Bureau of Labor Statistics. Different establishments were surveyed in different months. No corrections are made for seasonality; note that hours in retail trade increase in December. Unfortunately, the data are unavailable by region or sex: only average weekly hours in all of the establishments surveyed are given for each month. *Source*: Olenin and Corcoran (1942).

Figure showing Average Weekly Hours for Retail Trade and Wholesale Trade, 1935–1941.
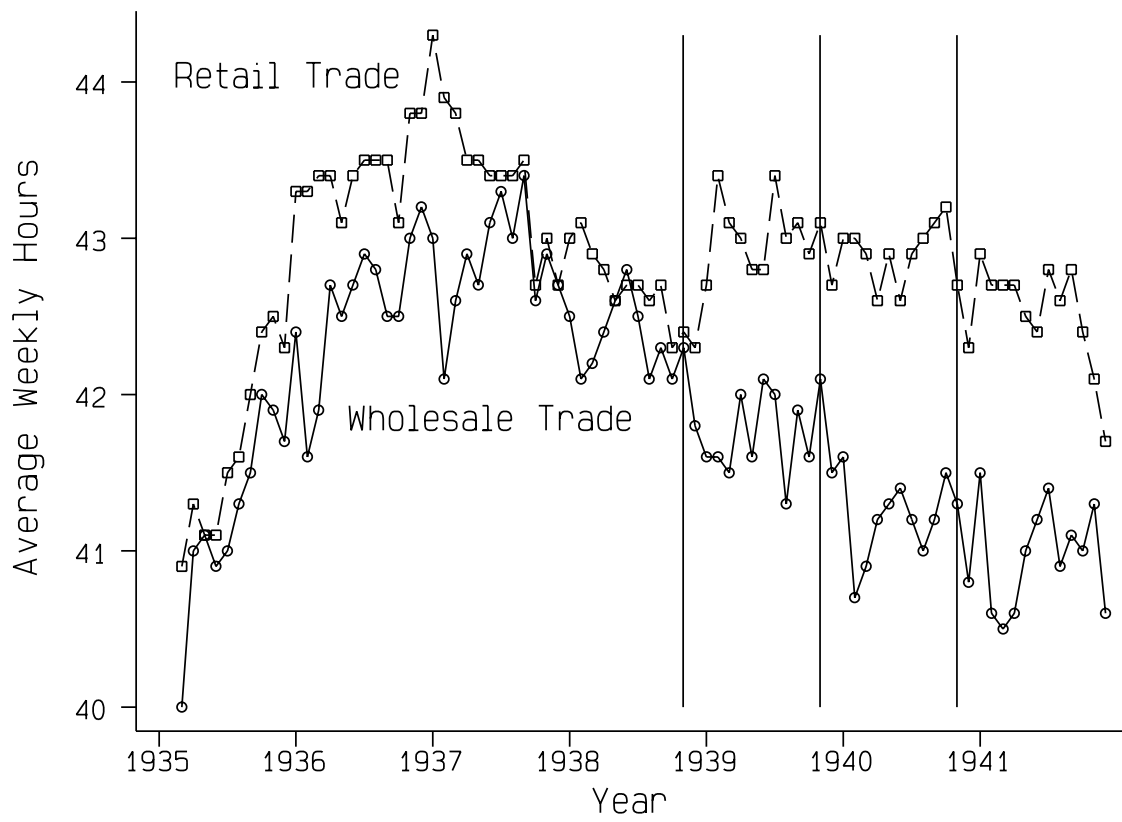
Figure 2. Average Weekly Hours in Retail and Wholesale Trade, 1940 and 1950, Men

Notes: Histograms estimated from the 1940 and 1950 censuses for wage and salary workers age 18 to 64 who were neither managers nor professionals. Restaurant workers are excluded.
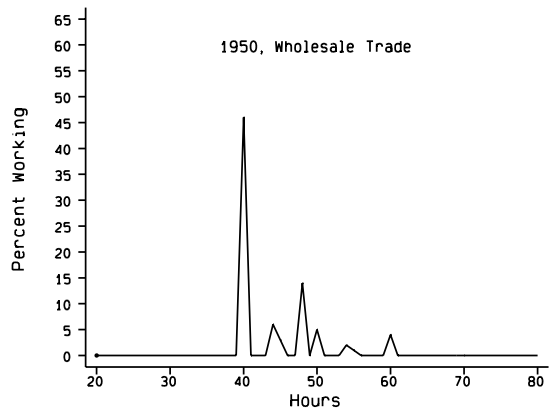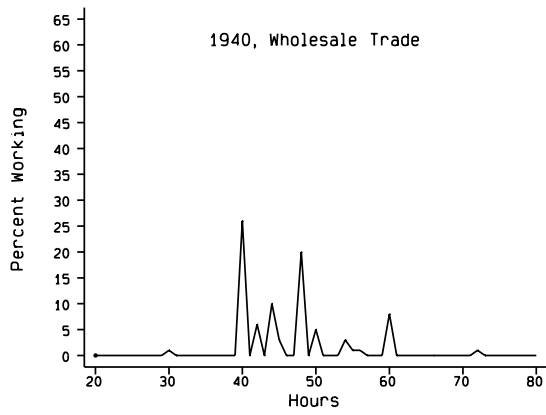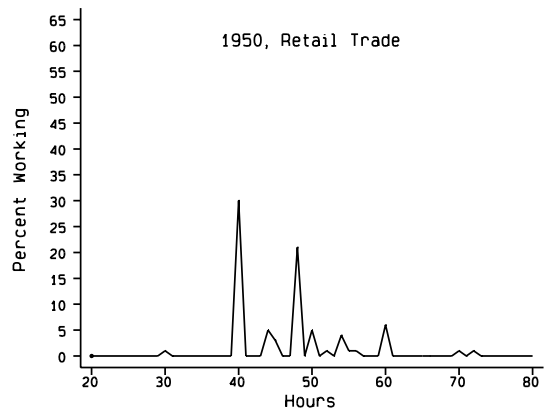
1940, Retail Trade

1950, Retail Trade

1940, Wholesale Trade

1950, Wholesale Trade

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Figure 3. Average Weekly Hours in Retail and Wholesale Trade, 1940 and 1950, Women

Notes: Histograms estimated from the 1940 and 1950 censuses for wage and salary workers age 18 to 64 who were neither managers nor professionals. Restaurant workers are excluded.