Preliminary—Comments Welcome
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OVERTIME LAWS AND THE MARGINS OF WORK TIMING

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ABSTRACT

I examine the relationship between overtime work and the timing of work, with an aim toward considering possible modifications in the regulation of overtime in the United States. CPS data from 1997 show that overtime in the U.S. is associated with more evening/night and Saturday work; and data from 1973 and 1997 show that there has been a major shift toward more full-time, five-day workweeks for full years. The results on overtime and work timing are somewhat similar for Germany, except for the absence of a link between overtime work and evening/night work. The evidence suggests that, there is an economic justification for redefining the accounting period for overtime in the U.S. to be broader than one week (as became widespread in Europe during the 1990s); but difficulties in measuring annual hours of highly mobile low-skilled workers militate against this change. Policy might instead be shifted to focus on reducing the unusually large amount of work performed in the U.S., disproportionately by low-wage workers, at unusual times—evenings/nights and weekends.

I. Introduction—The Problem and the Issues

The Fair Labor Standards Act, the fundamental law regulating hours of work in the United States, was passed and signed in 1938. No essential changes in it have been enacted in the subsequent 63 years (although, as I indicate below, numerous changes have been proposed). The law was passed in a country coming out of a prolonged Depression; it was applied to a nonfarm workforce of which 37 percent was in goods-producing industries (manufacturing, mining and construction) in 1938 compared to 20 percent in 2000, and which was 75 percent male in 1940 compared to 54 percent male in 2000.[1] Clearly, the labor force has changed, while the legislation regulating hours has not. Less well known is the relation between work timing and the amount of work that is accomplished—what I have elsewhere (Hamermesh, 1999) called the *instantaneous* as compared to the *integrative* aspects of work time. In an economy that has changed in other ways over the past 63 years, these relationships will also have changed.

My first purpose here is to examine the incidence of overtime work—who performs it, how it is related to the demographics of the work force, and how it relates to the timing of work, both over the day and over the week. By studying these hitherto unexamined relationships one should be able to draw some inferences about how the regulation of overtime hours and the timing of work might be modified in light of the current relationship between work schedules and workhours. Those inferences must, of course, take account of the original goals of the legislation and any additional goals that are currently implied in it. For that reason I begin with a review of the history of the FLSA's overtime hours provisions, then proceed to analyze the determinants and correlates of overtime work using data for 1997. After that Section III concludes with an analysis of the interrelationships among the number of days worked per week, the number of weekly workhours (the current sole focus of the FLSA) and the number of weeks worked per year, and how these changed between 1973 and 1997. Section IV then proceeds with considerations about how, if at all, the overtime provisions of the FLSA might be modified in light of the legislation's goals, possible alternative goals, and the changing nature of work and the American work

[1]Calculated from *Historical Statistics of the United States, from Colonial Times to 1957*, and from selected issues of *Employment and Earnings.*

force, particularly the timing of work. Section V provides some perspective on the American experience by presenting information on overtime practices in other OECD countries, direct evidence on overtime and work timing in Germany, and a consideration of their implications for restructuring overtime regulations in the United States.

II. A Brief Economic History of Federal Overtime Provisions and Proposed Changes

Like so much of U.S. federal labor legislation, the overtime provisions of the Fair Labor Standards Act of 1938 followed a number of earlier experiments in regulating hours at the state level (Ehrenberg and Schuman, 1982). Most of this legislation limited weekly hours in industries or for groups of workers where long hours were perceived as harmful to the health and safety of either consumers or the workers involved. In most cases these state laws did not mandate a standard workweek, but instead set an upper limit beyond which additional hours of work in a week were prohibited. Monetary overtime penalties were not usual in this type of legislation.

The bills that eventually became the FLSA, 75th Congress S. 2475 and HR 7200, were initially vague about the weekly and daily limits on hours that were to constitute the standard, calling merely for an "end to an oppressive workweek" (U.S. Congress, 1937). During the hearings on this legislation workers' representatives and others suggested short standard workweeks, e.g., the 30 hours suggested by Robert Johnson (U.S. Congress, 1937), while employers suggested longer standard workweeks, e.g., the 50 hours suggested by Charles Warner (U.S. Congress, 1937). Both sides presented studies that dealt with the impact of various standards and their interactions with the minimum wage (that was being discussed simultaneously as part of the proposed legislation) on levels of employment.[2] Apparently in response to studies that showed declines in employment along with increases in the length of workweeks in several manufacturing industries after the National Recovery Act was declared unconstitutional, the notion of an overtime penalty became attractive to the legislators. As one liberal economist testified, "Penalty overtime rates need to be stiff to force re-employment training" (Leon Henderson in

[2]Interestingly, while those noneconomists commenting on the legislation immediately recognized the nexus between its two main provisions, the formal economic literature has with few exceptions (Trejo, 1991; Costa, 2000) ignored this crucial point.

U.S. Congress, 1937). After a brief period in which it was set at 44 hours, the standard workweek was quickly lowered to 40 hours, and the penalty rate applied to weekly hours beyond that standard was fixed at 50 percent.

Over the subsequent 63 years the only major changes in the legislation have been its extensions to additional sectors of the economy—retail trade in 1961, federal employment in 1974. The overtime penalty remains 50 percent; for all covered workers the payment period is still defined as a single week; and the standard workweek remains a uniform 40 hours. Despite all the changes in the demographics/economics of the workforce and in the technologies of production, the essential parameters of this legislation have remained remarkably unchanged. It is fair to say that, of all the long-standing labor legislation in the United States, our overtime laws have changed least.

Suggested changes in the overtime provisions of the FLSA over the past quarter-century, none of which has come to fruition, can be classified in two groups. The first includes proposals to raise the penalty rate and/or shorten the standard workweek. Penalty rates of 150 percent and 100 percent have been proposed, as has a standard workweek of 35 hours (for examples, 94th Congress, HR 10130, 96th Congress, HR 1784). These proposals have typically been offered by liberal legislators and have been aimed toward spreading work with minimal cuts in weekly earnings of employed workers. They have been offered mostly in times of high unemployment, so that it is unsurprising that they were not heard much during the 1990s. However, even during the deep recession of 1973-75 and the slow recovery thereafter, and again in the double recession of the early 1980s, none of these proposals came near to passing both houses of Congress.

In the 1990s, with the long period of fairly steady economic growth and declining unemployment, legislation was offered, typically by more conservative legislators, to allow workers to receive overtime pay in the form of "compensatory time"—paid leave offered at 1.5 hours for each hour of overtime worked (e.g., 104th Congress, HR 2391). This type of proposal did not alter the various parameters of the FLSA's overtime provisions—the penalty rate and the standard workweek. Instead, it seemed aimed at allowing workers some flexibility in converting between money earnings and workhours. That the proposals went nowhere seems a

result of concerns by union groups and many people in Congress that the proposed legislation would not be easily enforced and would mean the essential abolition of the overtime provisions rather than their enhanced flexibility.

III. What Do We Know About Overtime Laws and Work Timing?

A. Previous Research

Research on the impact of overtime laws has focused entirely on three issues: 1) How do changes in the penalty rate alter the mix of employees and hours per worker—i.e., how does the penalty rate affect the "spreading of work?" 2) How do changes in the standard workweek affect employment and hours per worker? 3) How do the overtime provisions alter hourly wages and weekly or monthly earnings?

Because the penalty rate in the U.S. has remained unchanged since 1938, the first of these questions has been studied in the U.S. chiefly by assuming that certain labor costs that affect hours differentially from employment will have the same impact on the relative demand for these components of the input of labor as would changes in the overtime penalty. (See Ehrenberg, 1971; Ehrenberg and Schuman, 1982; for a presentation of the theory, see Hart, 1987, and for a summary of the empirical literature, Hamermesh, 1993, Chs. 3 and 5.) Recently Costa (2000) has taken a different approach, comparing covered and uncovered industries (wholesale and retail trade) before and after the passage of the FLSA. The general result from these studies is that a higher penalty clearly induces employers to reduce the ratio of hours per week to employment by reducing the fraction of workers putting in long (above the standard) hours. This kind of employment-hours substitution appears to arise too where state laws mandate the payment of penalty rates for daily hours in excess of a standard number (Hamermesh and Trejo, 2000). Whether the increase in employment generated through employment-hours substitution suffices to offset the decline in employment that occurs as the overall usage of labor drops because its marginal cost is increased by the penalty is unclear, although reasonable assumptions about the relevant elasticities suggest that it does (Hamermesh, 1993, Ch. 5).

Because the standard workweek has also been unchanged at 40 in the U.S. since 1938, it has been impossible to evaluate the impact of changing it on employment and weekly hours. A series of studies using

aggregate data (summarized in Hamermesh, 1993, Ch. 3) examining European countries and Japan leads to the general conclusion that each one-hour decline in the standard workweek may result in a decline in hours per-worker of one hour—thus suggesting substantial worker-hours substitution when standard hours are cut. These studies tell us nothing about what happens to the total amount of labor used when standard hours are cut (and thus the marginal cost of a unit of labor faced by many firms is raised). Recent empirical research using microeconomic data for Germany (Hunt, 1999) and for France (Crépon and Kramarz, 2000), and industry data for Germany (Steiner and Peters, 2000) is not clear on this point.[3] Hunt uses collectively bargained changes in standard hours in different industries to demonstrate that cuts in the standard workweek produced declines in total employment. Crépon and Kramarz, in a related study, show that legislated cuts in France in the early 1980s led to substantial job losses among precisely those workers who had been working the old standard weekly hours, and that this job loss was greatest among minimum-wage workers (whose hourly wages presumably could not adjust to the imposed change in total labor cost). Using a different methodology and a longer period Steiner and Peters demonstrate that reductions in the standard workweek caused union wage policy implicitly to raise labor costs, generating a reduction in employment demand that more than offset the substitution of workers for hours. Perhaps the best conclusion from the studies of both this and the first question is that raising the overtime penalty, or reducing the standard workweek, will raise the ratio of employment to weekly hours but reduce the total input of worker-hours (employment times weekly hours) and perhaps even reduce total employment.

Answers to the third question have been provided only by Trejo (1991) for the United States and Hunt (1999) for Germany. Using cross-section microeconomic data Trejo concluded that the hourly wage paid for an extra hour of overtime work is above that for an hour of standard work, but nowhere nearly 50 percent more (as the statute requires). Implicitly the overtime penalty generates supply effects, with workers apparently willing to work for lower straight-time pay in those firms that offer more opportunities for overtime work that is paid at a premium. The net result is that the incidence of a penalty rate for overtime is borne partly by workers, in the

[3]In addition to this research Gerlach and Hübler (1987) provide an early study of the determinants of overtime work in West Germany based on microeconomic data.

form of lower straight-time pay, partly by employers, in the form of a cost of overtime hours above what it would have been had there been no penalty. Hunt's analysis for Germany is not quite comparable, since she uses negotiated rather than legislated changes in the standard workweek. Nonetheless, and in contrast to Trejo, she finds that cuts in the standard workweek, and thus the imposition of a requirement that premia be paid on more hours per week, did not appear to reduce the straight-time hourly wage.

B. Overtime in the U.S. Today and the Timing of Work

While the literature on the economic impact of the overtime provisions of the FLSA is not tiny, it is also not particularly extensive nor recent. For that reason alone it is worth looking at the demographic and economic correlates of the distribution of overtime work today. Even more important in light of changing patterns of work timing in the United States (see Hamermesh, 1999), we know nothing about how the incidence of overtime work is related to the timing of work, including both diurnal and hebdomadal variations in patterns of labor-market activity. Since evidence on both of these relationships should inform any discussion of how overtime laws should be related to the temporal structure of work, in this subsection I examine them using the most recently available data.

The data are from the May 1997 Current Population Survey (CPS) Work Schedules Supplement, one of the essentially sexennial supplements to the CPS that has asked respondents, "Last week at what time of day did you begin [end] work on your main job most days?" From the answers to these questions and to the question, "Which days of the week do you work?" we can construct indicators of the hours of the day during which the individual is performing paid work and of the days of the week when that work is performed. Throughout the analysis I restrict the data to employees (excluding the self-employed). All of the statistics and estimates are calculated using the sampling weights provided in the CPS.

Table 1 presents statistics describing the demographic characteristics of those employees who stated that they worked overtime hours in the week before the CPS survey. Such people constitute roughly 1/7 of male employees and 1/9 of female employees. Although their usual weekly hours (probably do not include last week's

overtime hours) only slightly exceed those of workers who do not put in what they view as overtime hours, those who do work overtime average around 8 weekly hours of overtime. Overtime workers are less likely to be minorities, more likely to be high-school graduates or to have attended some college, but (among men) less likely to have college or graduate degrees. They are much less likely to be immigrants than natives, and female overtime workers are much more likely to be married than female workers who do not work overtime.

Unsurprisingly, since working on more days of the week, other things equal, implies more hours per week, we see from Table 1 that those workers who put in overtime are more likely than others to be working on each particular day of the week, including weekends. What is more interesting is the relationship between diurnal work patterns and the presence of overtime work. Those who usually work evenings/nights (at least four hours between 8PM and 6AM) are more likely to be working overtime usually. This is true for both male and female employees.

The statistics presented in Table 1 are interesting, but they could confound what may be demographic differences in the patterns of overtime work with the relationship between work timing and overtime on which I wish to focus. Table 2 presents estimates that account for this possible confounding by holding constant for a wide array of variables that allow us to focus on workers who are otherwise identical but for their work timing. In the first column for each sex are estimates from probits describing the probability that the worker usually puts in overtime hours. For each of the variables listed the coefficient indicates the impact of a one-unit increase on the probability of working overtime. (Thus, for example, 0.0389 for men in the first column implies that a man who works evenings/nights is 3.9 percentage points more likely to be working overtime than his otherwise identical counterpart who does not work evenings/nights.[4]) The second column for each sex presents tobit estimates of the impacts of these variables on hours of usual overtime.[5]

[4]Each effect is evaluated at the means of all the other variables in the probit.

[5]Also included in the equations are variables that hold constant for education, years of potential labor-market experience, marital status, immigrant status, race and ethnicity, as well as indicators of which weekdays the individual works.

The results of these estimates are intriguing. For the same usual hours worked per week both the probability of working overtime and the amount of overtime worked are greater among otherwise identical workers whose schedules require them to work evenings/nights. Unusual work schedules are positively associated with work that is viewed as overtime (and that presumably requires employers to pay the overtime penalty rate). The same greater incidence of overtime work and more hours of overtime are also observed among employees whose work schedules include Saturdays. Those who work Sundays, however, are no more likely to put in overtime hours and, if they do, work no more overtime hours in total than employees who do not work on Sundays.[6] Clearly, the issue on which to focus in the U.S. is the relationship between the existence of overtime work and the daily schedules of working time.

The data also allow us to examine how the relationship between work timing and overtime hours affects weekly earnings. Table 3 shows the results of multivariate regressions of the logarithm of weekly earnings on a large number of control variables, as well as usual weekly hours, last week's overtime hours and usual work schedules, both over the day and through the week. The coefficient estimates can be interpreted as the percentage impacts on wages, divided by 100. The first column for each sex includes a linear term in usual weekly hours, while the second includes a quadratic (in light of the evidence in Biddle and Zarkin, 1989, that the relationship is nonlinear).

Workers whose schedule involves evening/night work receive no higher pay than others with the same measurable characteristics. This result is surprising, but is the same as what Hamermesh (1999) found for workers in 1991, and no doubt stems from the negative correlation of unmeasured skill with the propensity to work evenings/nights (see Hwang *et al*, 1992). Even more surprising are the significant negative relationships between wages and work on weekends. This too is likely due to the failure to measure all those characteristics that affect workers' earning power, characteristics that are correlated with their choice of work schedule.

[6]The vector of five indicators for the weekdays was not significantly different from zero in any of these four equations.

Even after adjusting for daily and weekly work schedules, we still find that, given hours usually worked in the week, additional overtime hours lead to higher weekly earnings: The coefficients on overtime are significantly positive. If there were no shifting of the burden of overtime—if the actual premium for overtime work were unaffected by workers' supply responses to the mandated 50-percent pay premium—we would find, as Trejo (1991) hypothesized, that these coefficients would equal 50 percent of the coefficient estimates on the impact of usual workhours (or more, to the extent that the measure "usual weekly hours" does not reflect overtime hours). They do not: For both sexes the impact on weekly earnings of an extra hour of overtime, holding usual weekly hours constant, is significantly less than 50 percent of the impact of an extra hour of usual work.[7] That the impact of overtime work on women's earnings is relatively smaller than on men's earnings is consistent with the observation that women's labor supply is more elastic than men's, so that their supply response to the presence of an overtime premium is likely to be greater and to exert stronger downward pressure on their average wage rate.[8]

The main conclusion from these descriptions is that work timing and overtime work are related, and that together they affect the amount of pay that employees receive for overtime work. Overtime is especially prevalent among those who work unusual schedules—evenings and nights, and on Saturdays; and this interaction has a negative impact on the weekly earnings that these employees receive. In sum, the results in this subsection make clear that one needs to think about the timing of work along with the parameters of our overtime pay laws. Since changes in workers' weekly schedules are correlated with changes in their full earnings (Hamermesh, 1999), this consideration becomes especially important at a time of rising earnings inequality.

[7]For men the t-statistic on the hypothesis that the impact of an overtime hour is 1.5 times that of a regular hour of work is –7.49, for women –11.21.

[8]Interestingly, including interactions of overtime hours with the indicators of evening/night work and work on weekends has little effect on the estimates of the impact of overtime work on men's wages. Among women, however, the interactions for evening/night work and work on Sunday were significantly negative, to the point that they imply that overtime work performed at those times is supplied so elastically as to reduce the pay for it to the straight-time wage received by women who do not perform overtime work then.

C. Changing Workweeks, Workdays and Workyears, 1973-1997

The discussion thus far has been of the relationship between overtime work, when people work and the characteristics of those who perform overtime work and who work on different days and at different times of the day. This analysis has tried to shed light on the burden of overtime, the laws governing which are based almost entirely on the concept of the workweek (with California state law being by far the most important exception). The legislative focus on the workweek may have made sense in a world of uniform five-day per week, eight-hour per day jobs; but does that world still exist today? In particular, how long are current workweeks, workdays and workyears; how do these interact; and, most important, how have their levels and interrelationships changed over time? Unlike the issues discussed in Section III.B, all of these questions still deal with defining work effort integrated over some period of time rather than focusing on its determinants at different points in time (of the day or the week). Nonetheless, both because most of our labor-force statistics are based on the length of the workweek and because these other integrative dimensions should at least be considered in discussing any restructuring of overtime legislation, it is worthwhile examining them.

Table 4 presents the results of analyzing the relationship between hours per week and days per week. The data for 1997 are based on the May 1997 CPS supplement that underlay the estimates in Tables 1-3, while the estimates for 1973 are based on a similar May CPS supplement (which was the first representative U.S. household survey to generate data on hours of work per day). Fortuitously, aggregate economic conditions in these two years were quite similar: In both years the aggregate civilian unemployment rate was 4.9 percent.

The purpose of this table is to examine whether and how, over the longest period for which data are available, the distributions of hours per week and days per week changed. Looking first at the upper panel, it is clear, as is very well known, that reported average usually weekly hours worked per week (in the retrospective answers that the CPS generates) rose over this quarter-century by roughly 2-1/2 hours each for men and women. It is also quite apparent that, accompanying this increase in average hours, the dispersion of the length of workweeks has decreased: For both sexes the coefficient of variation fell over this period. While there were

substantial increases in the percentages of workers of both sexes who are putting in long weekly hours (more than 40, or more than 48), the decline in the fraction of workers putting in very few hours more than offset this rise.[9] In this sense work behavior among labor-force participants became less heterogeneous; and accompanying this convergence within genders was an increased similarity of the distributions of weekly workhours between men and women.

Days per week have been concentrated at five since 1945, and the Table shows that this was true in the 1973 and 1997 data too. Among men the fraction working more than five days per week decreased slightly, while the fraction working fewer than five increased; among women both changes were quite small indeed. The coefficient of variation remained constant for men, but fell for women. Overall there is little evidence of any major change in patterns of days worked per week over the last quarter of the twentieth century.

The bottom part of the table reports on the interactions between weekly hours and days per week. Clearly, anomalous schedules (long workweeks on few days, and short workweeks on many days) are quite rare. In 1997 women were still more likely than men to have short workweeks on many days, but the difference was smaller than it had been in 1973. In 1997, unlike in 1973, women were less likely than men to put in long workweeks on few days. Overall the importance of anomalous schedules increased among men and decreased among women over this period, so that in 1997 the percentages were almost identical by gender. The percentage of all workers with long workweeks on few days fell, from 2.77 to 1.88 percent of the labor force, while the percentage working fewer than 40 hours per week on more than five days rose from 2.48 to 3.15 percent of the workforce.[10] Taking the entire labor force together, changes in the prevalence of anomalous schedules appear to have been of fairly minor economic importance.

[9]See Juhn et al (1991) for a discussion of reasons why this "stretching" of weekly work hours has occurred.

[10]Despite their relative economic insignificance, given the sizes of these CPS samples both of these changes are highly significant statistically: The standard error of the 0.89 percentage-point decline in the percentage working long weeks on few days is 0.10 percentage points, while the standard error of the 0.67 percentage-point increase in the percentage working short weeks on many days is 0.11 percentage points.

The other time dimension with which weekly hours of work may interact is the number of weeks worked per year. Information on weeks worked is available retrospectively for the previous year from the March CPS data. Clearly, weeks worked will depend on the overall state of the labor market: If more people are unemployed, average weeks worked by labor-force participants will be reduced. That the aggregate unemployment rates were identical in 1973 and 1997 should minimize this problem in making comparisons of weeks worked over the quarter-century. Table 5 presents the distributions of the labor forces of full-time (more than 34 hours per week) and part-time (below 35 hours per week) workers disaggregated by the length of the workyear and by sex. The most striking thing to note is the substantial increase in the percentages of both full- and part-time workers who are now year-round workers. This is true among women, whose labor-force attachment is well known to have increased; but we also observe an increased prevalence among male workers. For both sexes and both full-and part-time workers this change has come about mainly through a large decline in the prevalence of schedules involving less than a full year of work. There has clearly been a substantial decline in casual attachment to the labor force. The well-known lengthening of the workweek has been accompanied by an increase in the number of weeks worked per year.

IV. Meeting the Goals of Overtime Legislation in the 21st Century

It is clear from the discussion in Section II that work-spreading has from the outset been the central idea motivating proponents to push for the enactment of the overtime provisions of the FLSA, and for proposals that standard hours be cut or that the overtime penalty be increased. How well the existing law has met this goal is not clear. It does seem likely, even accounting for the negative scale effects on employment that the penalty pay has induced, that employment-hours substitution was sufficient to allow proponents to claim that it did spread work (at the cost of a reduced total labor input and total market output). It seems reasonable to view the attempts of the 1990s to allow workers and firms to convert overtime pay into compensatory time as a clear abandonment of the program's original goal, an attempt to shift long-standing legislation away from the direction of work-spreading and toward work flexibility. The questions addressed in this Section are: 1) Within the long-standing

goal of work-spreading, what possible revisions/extensions to American overtime legislation might be suggested by changes in the relation of overtime work to the timing of that work and, more generally, to the changing timing of work? 2) Do changes in the timing of work, and its relation to overtime work, suggest any justifications for using existing legislation to achieve different, but perhaps related goals?

A. Meeting the Goal of Work-Spreading in a Changed Labor Market

Existing federal overtime legislation "taxes" employers' use of labor along one of the many possible dimensions of work timing, namely hours worked in the week. As the discussion in Section III made clear, the week is only one dimension along which we can examine evidence on the timing of work; and whether it is the most useful one along which to operate if the goal is work-spreading is absolutely unclear. Accordingly, let us consider whether changes in the relationships among different dimensions of work timing might suggest that such legislation can achieve its goal better by changing its focus to an alternative dimension of work.

One must remember throughout that our knowledge of substitution relationships among different dimensions of labor inputs is almost entirely limited to substitution between weekly hours and employment. (The exceptions are the evidence in Hamermesh (1996, Chapter 5) on substitution among weekly hours, days per week and employment, and in Hamermesh and Trejo (2000) on substitution among weekly hours, daily hours and employment.) The paucity of evidence means that there is no empirical basis for arguing that extending/altering overtime penalties to apply to other dimensions of work will spread work more (or less) effectively than penalizing the use of weekly hours in excess of 40. This absence means that the justification for modifying the approaches that the legislation has taken to achieve its goal of work-spreading must be based on how the nature of work has changed rather than on any knowledge that operating along alternative dimensions of work will enable the legislation to achieve this goal more effectively.

One novel dimension of work that we examined in Section III was that of days per week. It may well be that penalizing employers' use of additional days per week (not which days are used, but simply the total number of days worked in the week) may be a more efficient way to spread work than penalizing additional weekly hours;

but there is no evidence that this is true. Since the evidence on patterns of the numbers of days worked per week suggests that the changes have been very minor over the past quarter-century, there would seem to be no justification within the goal of work-spreading for having overtime legislation apply to the *number of days* worked per week.

As Table 5 showed, there have been major changes in the fraction of the workforce that works year-round: Year-round work became much more common in the last quarter of the 20th century. This suggests that legislation designed to spread work might operate not just along the dimension of hours per week, as it now does, but also along the dimension of weeks worked per year. More sensibly, overtime legislation might recognize that both weekly hours and weeks worked have risen and could then define the accounting period to be the calendar year.

Consider a proposal to abandon a weekly hours standard as the basis for calculating overtime (penalizing long hours) in favor of an annual hours standard. One might, for instance, imagine overtime penalties applying to all work for one's employer in excess of 2000 hours in a calendar year. The major argument in favor of such a change is that it meshes well with longer-term changes in the nature of work in the United States (the changes documented in the previous section). While some might argue that this change would impose a greater record-keeping burden on employers, given today's accounting capabilities employers should have no more difficulty keeping track of the status of annual hours of work of individual employees than they currently have keeping track of their weekly hours. Similarly, the monitoring burden on the Wage and Hours Division of the U.S. Department of Labor does not seem greatly enhanced.

Even if all workers stayed with their employers for entire calendar years, it is not at all clear that accounting for overtime on an annual basis would achieve the goal of increased employment. If we view inputs of labor as consisting of workers, weeks worked and weekly hours, there is no doubt that "taxing" the product of weeks worked and weekly hours would reduce annual hours, since the cost to the employer of an additional hour

per year is raised. It is highly likely that this would lead to substitution toward more employees, but one can envision technologies under which that would not occur.

The most serious problem with a proposal to base overtime on annual hours worked is that it assumes that employees remain with their employers for an entire calendar year. It would be extremely difficult to apply an annual overtime standard to workers who change employers during the year. In the American and most other labor markets low mobility is observed among more experienced and more educated workers, so that such a standard would apply well to them; but labor turnover is much higher among less-educated and younger workers. A standard based on annual hours of work would thus be harder to apply to the work of less-skilled employees.

Assume that employment-hours substitution is greater within a group of workers than across groups. Then greater turnover among unskilled workers means that an annual hours standard would limit the ability of overtime penalties to induce substitution of jobs for low-skilled workers for additional annual hours within this group of workers. This difficulty makes a proposal to abandon weekly accounting for hours in favor of annual accounting fairly unattractive. It suggests that, despite secular changes in labor-market behavior, modifying overtime laws to accommodate these particular changes would necessarily mean partially abandoning their central goal of work-spreading. That would be especially the case for the unskilled workers whom the designers of the legislation and its major contemporary advocates have been most interested in protecting.

These considerations militate against applying overtime penalties along different dimensions of integrative work time. In the one case there appears to be no change in labor-market outcomes that might justify such a shift in the methods of the legislation; in the other this kind of shift would seem to imply at least the partial abandonment of the law's major goal. Consider instead refocusing overtime penalties to operate along the dimension of work timing. The evidence in Section III made it quite clear that long workweeks are associated disproportionately with work on Saturdays (and to a lesser extent on Sundays) and with work in the evening or at night. Moreover, those who work on Saturdays (and to a lesser extent Sundays too) or in evenings or nights are

disproportionately low-skilled workers, both in terms of their observed characteristics and even in terms of what they are paid after adjusting for those characteristics.

In light of the nexus between long hours of work and their unusual timing one might consider "taxing" work performed on weekends and in evenings/nights by applying a penalty to such "strange-time" work independent of how many hours are performed per week. There is no doubt that such a penalty would reduce the amount of work performed in the evenings or nights and on weekends. (In some sense this proposal is the equivalent to using prices (of labor time) to replace the essentially abandoned "blue laws" that once severely restricted work timing in the United States.[11]) The question is whether "strange-time" penalties would accomplish anything toward the goal of spreading work. The evidence cited above does suggest that "strange-time" work and long workweeks are observed together. Regrettably, however, there is no evidence either way on whether applying penalties to "strange-time" work would cause employers to substitute toward more employees. One can imagine employers deciding on their inputs of workers, weekly hours, and the timing of those hours, and there surely are substitution relations among these three dimensions of the labor input; but whether taxing unusual work timing will induce a substitution toward more workers is not clear. It seems likely, but it is possible that substitution toward longer workweeks (on weekdays and during daylight hours) might be so great that employment would actually decline. Moreover, there is no doubt that such a penalty would, like the overtime penalty, generate scale effects that reduce total employment. Regrettably, there is absolutely no evidence available on this question.

Taken together, there do not appear to be any good bases in terms of changes over the last quarter-century in how the American labor market operates that would justify refocusing overtime laws onto alternative dimensions of labor time or timing in order to make them more effective in achieving the current major goal of work-spreading. While such a refocus might be appealing on other grounds, combinations of administrative

[9]For a discussion of the history of these laws see Laband and Heinbuch (1987). Burda and Weil (2000) present a theoretical analysis of their impact.

difficulties and detrimental major side effects make these alternative approaches undesirable if one maintains work-spreading as the sole goal of federal legislation regulating work time.

B. A New Goal—Altering Timing

Perhaps a better way to think about the goals of overtime legislation is as something more than a work-spreading device. This may make special sense at a time when birth rates at replacement levels and twenty years of technological changes that have steadily shifted the demand for labor toward more skilled workers may have made work-spreading increasingly incompatible with basic changes in the U.S. labor market. Nonetheless, as the experience with proposed legislative changes even during the boom years of the 1990s showed, abandoning this goal in favor of using overtime legislation to enhance labor-market flexibility is difficult to sell politically.

An alternative goal that is compatible with the initial thrust of the overtime provisions of the FLSA recognizes that the timing of work, not just the amount of work performed in one particular unit of time (the week) might be regulated to enhance (some) workers' well-being in a variety of ways. There are a number of justifications for this kind of refocusing of the FLSA, with most being tied fairly closely to its initial goals and its current *modus operandi*. Some of the evidence presented in Section III and more detailed data in Hamermesh (1999) show that the burden of work in the evenings and at nights is disproportionately on lower-wage workers. There is no reason to assume that this outcome is generated by anything other than workers' and employers' free choices, and thus no reason on efficiency grounds to interfere with it.

The disproportionate burden of "strange-time" work on lower-income workers and the increased prevalence of two-earner households imply that the cost of coordination of activities in lower-income households is higher than it had been before the rise in female participation, and that this increase exceeds that in middle- and upper-earning households. This coordination problem is basically an equity argument, because the coordination of work schedules imposes a greater burden on those households. Existing pay premia for evening/night and weekend work are not sufficient to present all workers with the same choices about when to work, as is made clear by the evidence that it is the unskilled, the uneducated, the young and minorities who are on the job at these

times. Imposing penalties for "strange-time" work that are above the premia currently generated by the market can make employers' and workers' choices about when to work neutral with respect to the skills that workers bring to the labor market.

Imposing "strange-time" penalties has the possible additional justification that it meshes well with existing overtime penalties. As we saw in Section III, work on weekends, especially Saturdays, and work in the evenings and nights is particularly associated with long workweeks in the United States. Imposing penalties on "strange-time" work thus also implicitly imposes additional penalties on long workweeks. It does so, however, not with the outmoded and possibly even inappropriate goal of spreading work, but rather with the goal of altering the timing of work in a way that is pro-family and that especially benefits lower-income families.

There is an additional informational problem that seems endemic to the American labor market and that, if not surmountable through "strange-time" penalties, might at least be ameliorated by them. Americans work long hours compared to workers in most other developed economies (see OECD, 2000, Table F). Part of this difference (see Hamermesh, 1996) is that we appear more likely than workers in most developed countries to be at work evenings/nights and on weekends. Why this difference exists is absolutely unclear; and general theoretical explanations (Akerlof's, 1976, rat-race theory) or the conspiracy notions of leftist writers (e.g., Schor, 1991) do not explain the phenomenon. Regardless of the origin, however, using the price system to impose higher costs of employment at "strange times" can generate an equilibrium outcome with more coordinated schedules and more free time per person.

One should be clear that refocusing overtime laws is not motivated by trends toward more work at "strange times." Indeed, as shown in Hamermesh (1999), the evidence suggests that, at least for evening/night work, the trend has been toward a reduction in such work. There is no good evidence on trends in weekend work in the last quarter-century, although it is quite clear that Saturday work is less prevalent today than it was early in the 20th century. Instead, the motivation must be tied to the interaction between the increasing pressures of coordinating work schedules as two-earner households become the norm and the particular burden that these

pressures place on the lower-income households whose members are disproportionately those who currently choose to work at "strange times."

If we accept the goal of regulating the price of the timing of work, we need to inquire about its feasibility. In an age when payroll systems are highly automated, the additional reporting burden that this extension of the FLSA might impose seems minor. Reporting when work occurs rather than simply how much work is performed adds little to employers' costs. Moreover, government monitoring/inspecting of employers' reports seems easier for work timing than for weekly overtime, as it is obvious from one observation whether work is occurring at the "strange times" that might be penalized in an extension of the FLSA.

As in Part A of this Section, one needs to consider how this extension would affect employers' demand for various dimensions of their inputs of labor. There is no doubt that imposing penalties on work at "strange times" would reduce the overall demand for labor and eventually reduce total workhours and/or total real earnings. That is true of every proposal that raises labor costs, and it is a strong argument against any protective legislation. Beyond that general effect, however, imposing penalties on evening/night and weekend work would clearly lead employers to substitute toward work at more conventional times. It would induce more firms to concentrate their activities into shorter time spans and would increase the concentration of other activities at those times (regrettably, for example, commuter traffic). How this suggestion might affect total employment is unclear: Because it leads to a greater concentration of work time it might well lead employers to substitute toward more workers, so that by penalizing "strange-time" work it might also stimulate work-spreading.

V. An International Perspective

While the evidence summarized in Section II was in many cases necessarily based on experience outside the U.S., both the summary and the studies themselves structure the analysis of legal changes in the same simple way as the FLSA is structured: A weekly standard for hours with a one-week accounting period and a penalty on hours above the standard. International experience is far more diverse than is implied by the representation of overtime laws that has been used for analytical purposes. We can gain additional insight into possible

restructuring of U.S. overtime regulation by examining how other countries' provisions differ from ours and how the outcomes differ.

A. Overtime Regulation Outside the U.S.

OECD (1998, pp. 166-171) presents an international comparison of laws and collective agreements regulating employers' use of overtime. The presentation, shown here as Appendix Table A1, is structured in the same way that we have described U.S. law, but with the addition (irrelevant in the U.S.) of the possible existence of outright bans on weekly hours above some limit, H^{Max}. Those outright bans are indeed the biggest general distinction between U.S. policy and that in most other developed countries. While the standard workweek in the U.S. is not an outlier in international experience, our willingness (subject to the imposition of overtime penalties) to allow employers complete latitude in lengthening the workweek is unusual. Whether these provisions or the interaction of workers' preferences and employers' demands for weekly hours are the chief cause of the apparent right-truncation of the distribution of weekly hours in European countries compared to the United States (e.g., Bell and Freeman, 2000) is unclear. Clearly, however, for at least some employers these limits must be binding.

The American overtime penalty rate is roughly average or a bit high by international standards. What is interesting, however, is that some nations—Denmark, Finland and Portugal—impose a sliding penalty, so that the marginal cost of an hour of work has a kink at some input of weekly hours beyond the standard workweek that triggers the initial penalty rate. At least in Finland and Portugal the higher rate is quite steep, again presumably leading to a thinning of the right tail of the distribution of weekly hours.

This amazing variety of regulations illustrates that it is possible to have more complexity in overtime laws—to use overtime regulation to help fine-tune the distribution of hours—than exists in the U.S. Additional and generally fairly recent changes in overtime laws in many countries illustrate that the U.S. is somewhat laggard in rethinking the structure of these regulations. Appendix Table A2 reproduces a list from OECD (1998) illustrating how overtime laws have been made more flexible in terms of their accounting periods. Given the timing of these statutory changes in the most economically advanced countries (the early 1990s), many must have been imposed

to overcome some of the perceived rigidity in those countries' labor markets. They essentially represent a backdoor way to allow employers to induce flexibility into their labor demand as compared to being limited to rigid one-week accounting periods in the presence of numerous other restrictions.

Perhaps most remarkable are the generality and diversity of exceptions to the use of one-week accounting periods. Acceptable accounting periods range from three weeks to one year. Interestingly, in many cases additional flexibility appears to have been purchased by adding new limits that impose overtime penalties after some number of daily hours of work is reached. Moreover, even with the longer accounting periods most countries still require overtime penalties above some weekly hours limit (above the usual standard hours).

This diversity of experience, and the existence of "flexibilization" in accounting periods, suggests that it is possible to impose penalties on long hours without being restricted to a one-week accounting period. While complaints about greater record-keeping costs no doubt have arisen, the continued existence of these exceptions suggests that these costs are not huge. Whether the European experience with longer accounting periods is relevant for the U.S. is unclear: We noted that the main potential problem here is with flows of workers, a problem that is likely to be less serious in European economies where worker turnover may be lower. Coupling the European experience with concerns about high American turnover suggests that, if we wish to expand the accounting period, a four-week or monthly period might be best (especially given the prevalence of biweekly, semi-monthly and monthly pay periods in the United States).

B. Overtime Work and Work Timing in Germany

While the exceptions documented in Appendix Table A2 were not motivated by concerns about work timing, greater labor-market flexibility in Europe may engender concerns about work timing and its distribution. Regrettably, in most EU member countries data that would allow one to examine work timing and workhours are simply unavailable: Relatively few countries have data like that of the May CPS Supplements that would allow us to examine the interaction of work timing and overtime work. One of the few is Germany: In its 1990 and 1995

waves the Socioeconomic Panel obtained information about the frequency of the respondents' work at unusual times.

These data are not comparable to the U.S. data on the crucial dimensions of timing. While the CPS asks about usually work schedules, the SOEP provides a range of responses on how often people have worked schedules that are unusual along various dimensions. For example, evening and night work can be performed regularly, occasionally or never, while Saturday or Sunday work can be done weekly, biweekly, every 3-4 weeks, seldom or never. In the discussion here I distinguish between people who work evenings or nights regularly, and others; and between those who work weekends each week or every other week, and others. I base the examination on data for West German employees in 1990 (as I did, Hamermesh, 1996, in studying work timing). They also differ in the definition of overtime: While in the U.S. the CPS recorded actual overtime work in the previous week, the SOEP asks about actual overtime work in the previous month (which I divide by 4.33 to make it as closely comparable to the U.S. data as possible). Regular hours are the worker's response to a question about actual weekly work time.

Table 6 presents data analogous to those in Table 1. Considering first demographic/economic differences, the education variable used here is a combination of years of formal schooling and years of apprenticeship (used by Couch and Dunn, 1997) and is not comparable to the U.S. education measure. Here we find that more educated workers are more likely to state that they work overtime hours. Exactly as in the United States married men are slightly more likely to work overtime than unmarried men, but married women are less likely than single women to work overtime. Foreign-born West German residents, unlike male immigrants to the U.S. or American minorities, are more likely to work overtime. As in the U.S. overtime workers differ little in age from those who do not work overtime. Also as in the United States, overtime work is less common among women than men. Finally, overtime work is more prevalent in Germany among short-tenure workers (something that we could not examine in the U.S. data).

Average regular weekly hours are lower in Germany than in the U.S., corroborating well-known results; and there is less dispersion in weekly work schedules. Weekly overtime hours worked in Germany, conditional on any overtime, are below those in the U.S.; but since the concepts differ (with many more Germans reporting overtime work), the differences may simply reflect the contrast between the American question about the previous week and the German one about the previous month. The main results to take from this table are: 1) Overtime workers in Germany are more likely to work on Saturdays and Sundays than other workers, exactly as in the United States; but 2) Unlike in the United States, where evening/night work is more common among people working overtime, in Germany evening and night work is equally or even less prevalent among overtime workers. The generally positive simple correlation between overtime work and work at "strange" times in the U.S. prevails in Germany only in terms of days of the week that are worked, not particular hours of the day.

The descriptive statistics in Table 6 do not account for the substantial collinearity of the measures of work and work timing with the demographic and economic characteristics of the sample members. Accordingly, in Table 7 I present probit and tobit estimates of the incidence and amount of overtime work, analogous to the results presented in Table 2. In many ways they are remarkably similar to the results for the United States. As in the U.S., among men there is little correlation between the incidence/amount of overtime work and the length of the regular workweek; but among women in both countries overtime work is more common and of longer duration if usual weekly hours are greater.

We saw that in the U.S. overtime work is significantly more prevalent and longer among workers whose schedules also include work on Saturday; and exactly the same thing is observed in Germany. As in the United States this is not true for work on Sunday; indeed, if anything, in Germany the incidence and amount of overtime work is associated with less work on Sundays. In the United States we demonstrated a partial relationship between evening/night work and overtime. The story is nearly the opposite in Germany: There is no relationship between overtime work and work in the evenings, and overtime work is significantly less common among workers whose schedules include work at night.

As noted, the data for the U.S. and Germany are not entirely comparable; but that assuming some comparisons are worth making, it seems quite clear that the regularities among normal work hours, work timing and the amount of overtime work that exist in the American labor market are only partly reproduced in Germany. The main difference is that, while overtime work in the U.S. was positively associated with lengthy work and work at unusual times along many dimensions, in Germany the association with work at unusual times is only partial. Whether the similarities and differences are true in the EU generally cannot be known with the available data. At the very least, however, the brief international excursion in this subsection should indicate that American outcomes are far from universal and provide only a partial guide to considering specific policy alternatives in other nations.

VI. Conclusions

In this discussion I have stressed that the common definition of overtime work based on weekly hours is just one of several ways of looking at and perhaps regulating what might be viewed as long hours. As the European experience shows, one can also regulate hours by imposing restrictions on the amount worked on single days or the amount worked in longer periods, perhaps even a calendar year. Also, one must entertain the possibility that regulating hours need not merely be a matter of how many hours are worked, but that it also might focus on when those hours are worked.

The evidence presented here suggests two important facts about the U.S. labor market: 1) While there has been little change in patterns of days worked per week in the last 25 years, the fractions of both part-time and full-time workers who are working year-round have increased substantially. 2) Long workweeks are associated, both on average and even adjusting for workers' measurable characteristics, with evening and night work, and with work on Saturdays. This association is less strong in one other country, Germany, for which possibly similar data are available.

If the goal of overtime laws is maintained as its original notion of spreading work, shifting policy toward regulating annual hours might make sense. The problem with such a shift, however, is that there is no evidence

that applying overtime penalties on an annual basis will lead to any more work-spreading or reduce total workhours less than does the current focus on weekly hours of work. The increase in the number of two-earner families and the burden of evening/night and weekend work on lower-wage workers provides a justification in terms of equity (aiding lower-income households) for modifying the original goal by including regulation of the timing of work. Applying penalties to evening/night or weekend work under an amended FLSA is an idea that should be considered more seriously in policy debates.

It should be clear that this refocusing would represent a move toward a more regulated labor market (in an economy with one of the least regulated labor markets in the developed world). As such, it would without doubt reduce the flexibility of the U.S. labor market. Whether the justifications that I have provided for it are sufficient to overcome this difficulty should be discussed as part of a broader consideration of these proposed changes.

References

George Akerlof, " The Economics of Caste and of the Rat Race and Other Woeful Tales," *Quarterly Journal of Economics*, 90 (November 1976): 599-617.

Linda Bell and Richard Freeman, "The Incentive for Working Hard: Explaining Hours Worked Differences in the U.S. and Germany," National Bureau of Economic Research, Working Paper No. 8051, December 2000.

Jeff Biddle and Gary Zarkin, "Choice Among Wage-Hours Packages: An Empirical Investigation of Male Labor Supply," *Journal of Labor Economics*, 7 (October 1989): 415-37.

Michael Burda and Philippe Weil, "Blue Laws," Unpublished Paper, Humboldt University—Berlin, 2000.

Kenneth Couch and Thomas Dunn, "Intergenerational Correlations in Labor Market Status," *Journal of Human Resources*, 32 (Winter 1997): 210-32.

Dora Costa, "Hours of Work and the Fair Labor Standards Act: A Study of Retail and Wholesale Trade, 1938-1950," *Industrial and Labor Relations Review*, 53 (July 2000): 648-64.

Bruno Crépon and Francis Kramarz, "Employed 40 Hours or Not-Employed 39: Lessons from the 1982 Mandatory Reduction of the Workweek," Centre for Economic Policy Research, Discussion Paper No. 2358, January 2000.

Ronald Ehrenberg, *Fringe Benefits and Overtime Behavior*. Lexington, MA: Heath, 1971.

---------- and Paul Schuman, *Longer Hours or More Jobs?* Ithaca, NY: Cornell University Press, 1982.

Knut Gerlach and Olaf Hübler, "Personalnebenkosten, Beschäftigtenzahl und Arbeitstunden aus Neoklassischer und Institutionalistischer Sicht," in Friedrich Buttler, Knut Gerlach and Rudi Schmiede, eds., Arbeitsmarkt und Beschäftigung. Frankfurt: Campus Verlag, 1987.

Daniel Hamermesh, *Labor Demand*. Princeton, NJ: Princeton University Press, 1993.

----------, *Workdays, Workhours and Work Schedules*. Kalamazoo, MI: The W.E. Upjohn Institute, 1996.

----------, "The Timing of Work over Time," *Economic Journal*, 109 (January 1999): 37-66.

----------, "12 Million Salaried Workers Are Missing," National Bureau of Economic Research, Working Paper No. 8016, November 2000.

---------- and Stephen Trejo, "The Demand for Hours of Labor: Direct Evidence from California," *Review of Economics and Statistics*, 82 (February 2000): 38-47.

Robert Hart, *Working Time and Employment*. Boston: Allen and Unwin, 1987.

Jennifer Hunt, "Has Work-Sharing Worked in Germany?" *Quarterly Journal of Economics*, 114 (February 1999): 117-49.

Hae-shin Hwang, "Compensating Wages Differentials and Unobserved Productivity," *Journal of Political Economy*, 100 (August 1992): 835-58.

Chinhui Juhn, Kevin M. Murphy and Robert Topel, "Why Has the Natural Rate of Unemployment Increased over Time?" *Brookings Papers on Economic Activity* (1991): 75-142.

David Laband and Margaret Hendry Heinbuch, *Blue Laws: The History, Economics, and Politics of Sunday-closing Laws*. Lexington, MA: Lexington Books, 1987.

Organization for Economic Cooperation and Development, *Employment Outlook, 1998*. Paris: OECD, 1998.

----------, *Employment Outlook, 2000*. Paris: OECD, 2000.

Juliet Schor, *The Overworked American*. New York: Basic Books, 1991.

Viktor Steiner and Ralf-Henning Peters, "Employment Effects of Work Sharing—An Econometric Analysis for West Germany," Zentrum für Europäsiche Wirtschaftsforschung, Discussion Paper No. 00-20, 2000.

Stephen Trejo, "The Effects of Overtime Pay Regulation on Worker Compensation," *American Economic Review*, 81 (September 1991): 719-40.

U.S Congress, Joint Hearings on the Fair Labor Standards Act of 1937. 75th Congress, 1st Session, June 2 - June 5.

Anne Young, "Work Experience of the Population, 1973," *Monthly Labor Review*, (November 1974): 49-53.

Table 1. Characteristics of Overtime and Other Employees, CPS May 1997*

	Male		Female	
Characteristic	**Overtime**	**No Overtime**	**Overtime**	**No Overtime**
African-American	.087	.090	.091	.127
Hispanic	.088	.113	.068	.090
High school	.361	.325	.314	.342
Some college	.295	.256	.328	.295
College	.169	.183	.202	.179
Graduate degree	.073	.089	.076	.074
Immigrant	.098	.133	.080	.106
Married	.642	.637	.526	.574
Work evening/night	.127	.099	.080	.067
Work: Monday	.948	.931	.914	.899
Tuesday	.959	.941	.931	.911
Wednesday	.956	.942	.925	.911
Thursday	.956	.941	.929	.906
Friday	.927	.915	.900	.883
Saturday	.299	.279	.241	.204
Sunday	.153	.147	.137	.131
Age	38.32 (11.03)	39.13 (12.37)	38.61 (11.19)	39.03 (12.24)
Usual weekly hours	43.21 (8.05)	42.59 (10.60)	39.01 (9.11)	37.10 (10.44)
Fraction with overtime	.148		.116	
Weekly overtime hours	8.95 (7.29)	0	7.10 (5.77)	0
N	2973	17075	2053	15610

*Standard deviation in parentheses below means of continuous measures. All the statistics are calculated using the CPS sampling weights.

Table 2. Determinants of Overtime Hours, CPS May 1997[*]

	Male		Female	
Variable:	Works Overtime	Hours of Overtime	Works Overtime	Hours of Overtime
Usual weekly hours	-.00022	.0343	.00165	.1254
	(.00031)	(.0207)	(.00030)	(.0204)
Work evening/night	.0389	2.623	.0221	1.672
	(.0096)	(.580)	(.0108)	(.662)
Work: Saturday	.0251	2.279	.0328	2.437
	(.0074)	(.475)	(.0081)	(.495)
Sunday	.0053	.643	-.0073	-.441
	(.0090)	(.597)	(.0085)	(.598)
Pseudo-R^2	.012	.006	.016	.009
N	18940		16804	

[*]Standard errors of the coefficients in parentheses. In the probits the estimates are of the impact on the probability of working overtime of a one-unit increase in hours, and of moving from zero to one in the indicator variables. In the tobits they represent the impact of a one-unit increase in each variable on the tobit index. All the estimates are calculated using the CPS sampling weights. Also included in the equations are indicators of marital status, immigrant status, race and ethnicity; vectors of indicators of educational attainment and of whether the person works Monday through Friday; and a quadratic in a continuous measure of labor-market experience.

Table 3. Impacts on Usual Weekly Earnings of Amounts and Timing of Work Hours, CPS May 1997*

	Male		Female	
Variable:				
Weekly overtime hours	.0071	.0064	.0058	.0067
	(.0010)	(.0010)	(.0013)	(.0013)
Usual weekly hours	.0299	.0839	.0426	.0864
	(.0006)	(.0021)	(.0005)	(.0018)
(Usual weekly hours)^2		-.00061		-.00064
		(.00002)		(.00003)
Work evening/night	-.0008	-.0149	.0086	-.0026
	(.0136)	(.0133)	(.0161)	(.0158)
Work: Saturday	-.1045	-.0675	-.0957	-.0758
	(.0118)	(.0116)	(.0129)	(.0126)
Sunday	-.0462	-.0397	-.0035	-.0163
	(.0149)	(.0145)	(.0151)	(.0148)
Adjusted R^2	.512	.536	.576	.596
N	14001		13040	

*Standard errors of the coefficients in parentheses. Also included in the equations are indicators of marital status, immigrant status, race and ethnicity, vectors of indicators of educational attainment and of whether the person works Monday through Friday; and a quadratic in a continuous measure of labor-market experience.

Table 4. Workweeks and Workdays, CPS May 1973, 1997 (Percent Distributions)[*]

	1973		1997	
	Men	**Women**	**Men**	**Women**
		Hours per week		
1-14	4.74	9.36	1.58	3.94
15-29	5.33	14.76	4.81	13.26
30-34	1.64	4.97	2.34	6.24
35-39	3.91	12.18	3.74	9.39
40	55.42	49.75	53.11	52.10
41-48	13.03	5.45	10.35	6.62
49-59	10.17	2.40	14.66	5.80
60+	5.76	1.13	9.41	2.65
Pct. H>40	28.96	8.89	34.42	15.07
Average	40.60	34.19	42.80	36.98
Std. Deviation	11.69	12.05	11.06	10.75
Coefficient of Variation	0.29	0.35	0.26	0.29
		Days per week		
1	1.39	3.05	0.57	1.10
2	1.56	4.18	2.38	3.92
3	1.97	5.47	1.90	5.18
4	2.39	4.93	4.92	6.86
5	71.42	73.82	70.22	74.15
6	18.65	7.46	14.99	6.16
7	2.62	1.09	5.02	2.63
Pct. D<5	7.31	17.62	9.77	17.06
Pct. D>5	21.27	8.55	20.01	8.79
Average	5.04	4.67	5.07	4.78
Std. Deviation	0.84	1.07	0.88	0.96
Coefficient of Variation	0.17	0.23	0.17	0.20
Pct. with D<5 & H>40	0.58	2.19	1.33	0.50
Pct. with D>5 & H<40	0.20	2.28	1.30	1.85
N	26,911	17,850	21,652	19,520

[a]Calculated from raw CPS files.

Table 5. Workweeks and Workyears, by Sex, 1973, 1997 (Percent Distributions)[*]

	1973		1997	
	Men	Women	Men	Women
50-52 Weeks				
Full time ($ 35 Hours)	68.0	41.9	71.7	55.8
Part time (< 35 Hours)	4.3	10.6	5.6	14.2
27-49 Weeks				
Full time ($ 35 Hours)	11.4	12.2	8.7	8.6
Part time (< 35 Hours)	2.8	7.6	3.0	6.4
1-26 Weeks				
Full time ($ 35 Hours)	8.0	14.0	6.0	6.2
Part time (< 35 Hours)	5.5	13.7	5.0	8.8
TOTAL	100	100	100	100

[a]From Young (1974) and Bureau of Labor Statistics, *News Release 98-470*, November, 25, 1998.

Table 6. Characteristics of Overtime and Other Employees, German Socioeconomic Panel 1990[*]

	Male		Female	
Characteristic	**Overtime**	**No Overtime**	**Overtime**	**No Overtime**
Education (years)	12.13	11.43	11.89	11.28
	(2.57)	(2.05)	(2.47)	(2.02)
Foreign-born	.066	.044	.068	.057
Married	.704	.655	.448	.577
Work evening regularly	.210	.204	.128	.132
Work night regularly	.131	.151	.028	.051
Work at least biweekly:				
Saturday	.314	.154	.321	.226
Sunday	.101	.076	.111	.080
Age	38.56	38.08	34.22	36.10
	(11.08)	(12.65)	(11.82)	(12.07)
Fraction with job tenure:				
0-1 year	.153	.145	.236	.211
1-4 years	.205	.221	.291	.270
5-9 years	.177	.138	.180	.170
10-19 years	.269	.289	.218	.256
≥20 years	.196	.207	.075	.093
Weekly hours	40.70	39.93	37.41	35.44
	(5.51)	(5.33)	(6.60)	(7.26)
Fraction with overtime	.441		.299	
Weekly overtime hours last month	4.70	0	3.22	0
	(4.04)		(2.96)	
N	1189	1506	467	1095

[*]Standard deviation in parentheses below means of continuous measures.

Table 7. Determinants of Overtime Hours, German Socioeconomic Panel, 1990*

	Male		Female	
Variable:	Works Overtime	Hours of Overtime	Works Overtime	Hours of Overtime
Weekly hours	.00145	.0110	.00661	.0807
	(.00184)	(.0254)	(.00181)	(.0254)
Work evening regularly	.0097	.412	-.00478	-.0535
	(.0359)	(.487)	(.0414)	(.581)
Work night regularly	-.0838	-1.230	-.1172	-1.151
	(.0402)	(.574)	(.0550)	(.986)
Work at least biweekly:				
Saturday	.261	4.398	.105	2.007
	(.027)	(.367)	(.032)	(.420)
Sunday	-.114	-1.797	-.0054	-.099
	(.040)	(.565)	(.0479)	(.664)
Pseudo-R^2	.056	.028	.042	.019
N	2695		1562	

*Standard errors of the coefficients in parentheses. In the probits the estimates are of the impact on the probability of working overtime of a one-unit increase in hours, and of moving from zero to one in the indicator variables. In the tobits they represent the impact of a one-unit increase in each variable on the tobit index. Also included in the equations are indicators of marital status and foreign birth; a vector of indicators of years of tenure; and continuous measures of years of education and a quadratic in labor-market experience.

APPENDIX (taken from OECD (1998))

Table A1. Legislative Limits on Normal Weekly Hours of Work and Overtime Work

Table A2. Provisions for Averaged/Annualized Hours of Work

Table 5.10. **Legislative limits on normal weekly hours of work and overtime work**

	Legal maxima			Premium for overtime hours	Normal weekly hours set by collective agreements
	Normal weekly hours	Weekly overtime hours	Maximum weekly hours		
Australia	38-40	none	none	50% for first 4 hours, 100% thereafter	35-40
Austria	40	5 (10 during 12 weeks per year)	50 (60 in some circumstances)	50%	36-40
Belgium	40	10	50	50% for hours worked during the week 100% for hours worked during the weekend	38
Canada	40-48	none	none	generally 50%	35-40
Czech Republic	40.5	8	51	25%	
Denmark	37	none	48	50% for 1 hour; rising to 100%	37
Finland	40	5	45	50% for 2 hours, then 100%	37.5-40
France	39	9	48	25% for first 8 hours, then 50%	39
Germany	48	12	60	25%	35-39
Greece	40	8	48	25% for the first 60 hours per year 50% for the second 60 hours per year	40
Hungary	40	12 (typically 8 hours)	52	50%	
Ireland	48	12	60	25%	38-40
Italy	48	12	60	10% plus 15% for unemployment fund	36-40
Japan	40	none	none	25%	40-44
Korea	44	12	56	50%	
Luxembourg	40	8	48	25% for blue-collar, 50% for white-collar	40
Mexico	48	9	57	100%	
Netherlands	45	15	60 (maximum average over 13 weeks is 48)	no legislation on premium	36-40
New Zealand	40	none	none	no legislation on premium	40
Norway	40	10	50	40%	37.5
Portugal	40	12	54	50% for first hour, then 75%	35-44
Spain	40	2 (average 80 hours per year)	47		38-40
Sweden	40	12 (maximum 200 hours per year)	48 or 52	no legislation on premium	40
Switzerland	45 or 50	16	61 or 66	25%	40-42
Turkey	45	3 hours per day, 90 days per year (*i.e.* 270 hours per year)		50%	
United Kingdom	none	none	none	collectively-bargained	34-40
United States	40	none	none	50%	35-40

Australia: Working-time is generally regulated by industrial awards. The maximum number of normal hours can also be prescribed in State legislation (which generally provides that normal hours of work shall not exceed an average of 40 hours per week).
Austria: Collective agreements may permit up to 10 additional overtime hours (*e.g.* in hotels and restaurants or transport services). Work agreements may permit hours of overtime during 12 weeks up to a weekly working time of 60 hours to prevent severe economic detriments, if other measures are not feasible. The Labour Inspectorate may permit a larger number of overtime hours. There are many exceptions to the maximum weekly hours rule, which allow 60 hours and more. The average maximum weekly working time must not exceed 48 hours over a reference period of 4 months, which may be extended by collective agreement up to 1 year.
Belgium: Normal weekly hours (or less where there is a collective agreement) must be maintained, on average, over the specified reference period. The reference period is legally one quarter, but may be up to one year under a collective agreement. The maximum permitted overtime is 65 hours over a quarter.
Canada: Normal weekly hours vary from 40 hours in some provinces to 48 hours in others.
Denmark: Normal weekly hours of 37 and overtime premiums have been established through collective bargaining.
Finland: Maximum weekly overtime hours are based on an averaging of permitted maxima of 250 hours of overtime annually.
Germany: Weekly hours limits are based on a six-day week. Overtime is limited to 2 hours per day.
Hungary: Legislation specifies an 8 hours per day threshold before overtime hours. A five-day week is assumed. Maximum overtime hours are 8 per four working days; 144 hours per year if no collective agreement; 200 hours per year by general collective agreement; and 300 hours per year by collective agreement at branch level.
Italy: Weekly hours limits are based on a six-day week. Overtime hours are limited to 2 hours per day.
Luxembourg: The weekly overtime limit is based on a daily limit of 2 hours applied over a five-day week.
Mexico: Beyond 9 hours, the premium for overtime rises from double to triple time and sanctions can be imposed on the employer.
Portugal: Weekly overtime hours are based on a maximum of 2 hours daily over a six-day week. The maximum overtime hours per year is 200.
Sweden: The weekly limit on overtime hours is a weekly average of the limit on overtime hours of 48 hours in 4 weeks. The 48 hour weekly maximum is by collective agreement.
Switzerland: Normal weekly hours are 45 for those employed in industrial enterprises and white-collar workers and 50 for individuals employed in crafts or construction. The limit on overtime hours is based on a maximum of 61 or 66 hours per week.
Turkey: Overtime hours are limited to 3 hours per day over a maximum of 90 days. Normal weekly hours are often worked over fewer than 6 days, so that overtime hours are usually limited to 15 hours per week.
United States: Figures refer only to those workers considered to be paid hourly.
Sources: Data were supplied by national authorities on the basis of a questionnaire sent to all OECD Member countries, and were taken from European Commission (1996) and Blanpain (1990).

	Date of legislation	Working time unit used in averaging	Reference period[b]	Limitations
Austria	1997	Legal week (40 hours) or any shorter normal weekly working time which is provided for under a collective agreement	Unlimited; averaging schemes have to be permitted by collective agreement; if the reference period is more than one year, time off in lieu has to be granted in blocks of several consecutive weeks	9 hours per day; 10 hours if time off in lieu can be taken in blocks of several consecutive days or, in case of reference periods of more than one year, in blocks of several consecutive weeks; 48 hours per week or 50 hours per week if the reference period does not exceed 8 weeks
Belgium	1985	Legal week (40 hours) or shorter week provided under a collective agreement	1 quarter[c]	11 hours per day, 50 hours per week, maximum of 65 hours of overtime, at any moment
Czech Republic	1962 amendments 1991	Legal week (42.5 hours)	4 weeks[d]	9.5-12 hours per day, 120 overtime hours per year
Denmark	1990	Collective agreement	6 months	Must be agreed by employees on each occasion
Finland	1965 and 1996	Legal week (37 hours)	4 weeks	9 hours per day
France	1982, 1993	Legal week (40 hours)	At least 1 year	44 hours per week or 464 hours over 12 consecutive weeks, or 10 hours per day and 48 hours per week
Germany	1994	Legal week (39 hours)[e]	6 months	10 hours per day, 60 hours per week
		Legal working day (8 hours)	Unlimited[f]	
		Agreed weekly hours by branch	2 months	
Hungary	1995	Legal working day (8 hours)	3 weeks[f]	12 hours per day
Ireland	1997	Legal week (48 hours)	1 year	56 hours per week
Italy	1923	Agreed weekly hours by branch	1 month	48 hours per week, 96 extra hours per year
Korea	1997	Legal week (44 hours)	4 weeks for white-collar[g]/variable for blue-collar	12 hours per day, 56 hours per week
Luxembourg		Legal week (40 hours)	13 weeks or 4 weeks	10 hours per day
Netherlands	1996	40-hour week	1 year	10 hours per day, 50 hours per week over 4 weeks; 9 hours per day, 45 hours per week over 13 weeks[h]
Norway	1977	Legal week (40 hours)	4 months	9 hours per day and 48 hours per week[i]
Portugal	1997	Legal week (40 hours)	1 year	Maximum of 2 additional hours per day; 50 hours per week
Spain	1994	Legal week (40 hours)	4 weeks	9 hours per day, 45 hours per week; restrictions on rest periods
Sweden	1983	Legal week (40 hours)	1 year[j]	No maximum specified
Switzerland	1966	Agreed weekly hours by branch (45 or 50 hours)	1 week	61 or 66 hours per week, depending upon branch
Turkey	1971, 1983	Legal week (45 hours)	Unlimited[k]	Five-day week: 9 hours per day or 45 hours per week Six-day week: 7.5 hours per day or 45 hours per week
United Kingdom	No special regulation	Agreed weekly hours		None

a) Maxima as laid down by labour legislation and by collective agreements at the national level.
b) The maximum period of reference may be lower in certain branches.
c) The period for averaging is normally a quarter, but it can be extended to 1 year by *Arrêté royal* (AR) or *Convention collective de travail* (CCT).
d) For some jobs with "an uneven intensity of work", the period of annualisation may be as long as 1 year.
e) Part-time hours may also be annualised.
f) Flexibilisation is only possible when associated with shift-work.
g) The Minister of Labour may specify the period for averaging, which can be extended up to one year in certain industries.
h) The basic legislated limit is that no more than 520 hours may be worked over 13 weeks. Under discretionary requirements, which require an agreement between the parties, a maximum of 200 hours can be worked per four-week period and 585 hours per 13-week period.
i) In certain situations the maximum daily hours can be extended to 10 and maximum weekly hours to 54.
j) Up to 40 hours may be carried over from one year to another.
k) Often 1 year.

Sources: Data were supplied by national authorities on the basis of a questionnaire sent to all OECD Member countries. Data were also obtained from the European Commission (1996); *European Industrial Relations Review*, various issues, 1994 and 1995; and other sources of information on collective agreements.