

NBER WORKING PAPER SERIES

12 MILLION SALARIED WORKERS ARE MISSING

Daniel S. Hamermesh

Working Paper 8016
<http://www.nber.org/papers/w8016>

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
November 2000

I thank John Abowd, Francine Blau, Robert Drago, Robert Goldfarb, Gerald Oettinger, Anna Polivka, James Spletzer, Stephen Trejo and participants at seminars at several universities for helpful comments, and the Alfred P. Sloan Foundation for financial support. The views expressed in this paper are those of the author and not necessarily those of the National Bureau of Economic Research.

© 2000 by Daniel S. Hamermesh. All rights reserved. Short sections of text, not to exceed two paragraphs, may be quoted without explicit permission provided that full credit, including © notice, is given to the source.

12 Million Salaried Workers Are Missing
Daniel S. Hamermesh
NBER Working Paper No. 8016
JEL No. J33, Z13

ABSTRACT

Evidence from Current Population Surveys through 1997, various cohorts of the National Longitudinal Surveys, and the Panel Study of Income Dynamics suggests that the fraction of American employees paid salaries stayed constant from the late 1960s through the late 1970s, but fell slightly thereafter through the late 1990s. Accounting for the changing industrial, occupational, demographic and economic structure of the work force shows that the fraction was 9 percentage points below what would have been expected in the late 1970s. This shortfall is not explained by growth in the temporary help industry, by institutional changes in overtime or wage payment regulation, by the increasing openness of American labor and product markets, nor by convergence of nonwage aspects of hourly and salaried employment. A theory of worker commitment and employers' monitoring costs explains the determination of pay status. While monitoring costs may have changed consistent with the decline in salaried work, only declining worker commitment is also consistent with an observed relative decline in earnings of hourly workers. Various waves of the General Social Surveys provide direct evidence that workers' commitment/trustworthiness declined during this period. Data from several cohorts of men in the NLS imply that there was a detrimental change in the work attitudes of young men in the lower half of the distribution of early-career job satisfaction, a conclusion that is bolstered by the relative decline in job tenure among hourly-paid workers.

Daniel S. Hamermesh
Department of Economics
University of Texas
Austin, TX 78712-1173
and NBER
hamermes@eco.utexas.edu

You can tell the difference between hourly and salaried—the salaried guys hustle. [Jay Leno, The Tonight Show, May 12, 2000]

I. Introduction

Every American professor is salaried in his/her main job, with pay that is denominated per month or per year; yet at one time most held jobs that were paid hourly—in which earnings were denominated per hour. Many Americans are still paid hourly and labor under the widely held view, consistent with the epigraph to this study, that hourly workers are generally undesirable workers and hourly jobs are undesirable jobs. The author of one textbook on personnel relations claimed: "*Salary*. This term is used to designate monetary payments to clerical, supervisory, managerial or professional employees." (McFarland, 1968). Another noted, "...salary status is usually reserved (along with a parking space) for management, and nonmanagement employees (except clerical workers) are usually paid on an hourly basis." (Schuler, 1987). Yet another, acknowledging these views, predicted, "Undoubtedly, the pressure for a salaried status for blue-collar workers will grow, as automation and other changes in our labor force reduce the distinctions which have persisted in the past." (Pigors and Myers, 1973). Methods of time-rated pay distinguish groups of workers, and an hourly job connotes that the employee cannot be trusted and needs to be monitored. In an increasingly professional, white-collar economy with more educated workers one might expect that the fraction of time-rated jobs that are paid hourly will have declined.

The timing of pay in the United States is a much more complex issue than is generally recognized. Laws in most states (so-called wage payment laws) impose a maximum duration between paychecks, thus affecting the frequency of receipt of pay.¹ Since 1938 the Fair Labor Standards Act has required premium pay for non-exempt employees subject to this Act, who may be hourly or salaried workers, thus affecting the structure of pay for many workers, and presumably its level as well as various aspects of the demand for employment and hours (Trejo, 1991; Hamermesh and Trejo, 2000). These regulations on the structure of payment mechanisms may impinge on the decision whether to classify a worker as hourly or salaried; but that

¹For example, the Texas Payday Act requires non-exempt private-sector employees to be paid at least semi-monthly. This is the most common requirement of state Wage Payment Acts.

classification is at least a somewhat independent issue, related to employers' and workers' views of the nature of the bond between them. The institution of hourly pay is nearly uniquely North American, and is apparently very rare in most other developed economies; but institutional changes elsewhere may reflect the same underlying forces that determine changes in the prevalence of hourly pay in the United States.

Even though formal incentive pay systems are relatively rare in the United States, there has been an immense outpouring of economic research on the theory and empirical aspects of such systems (see Brown, 1990, and for a summary, Lazear, 1998).² With the exceptions of Goldfarb (1987) and Fama (1991) there has been no theoretical examination, informal or formal, of the determinants of the type of time-rated pay that is offered. Empirical examination of these determinants appears to be completely lacking, and only one study (Haber and Goldfarb, 1995) presents evidence that documents changes in the prevalence of hourly pay (for the first half of the time period examined here). This absence is surprising given the ubiquity of this distinction in the American workplace and its importance in workers' minds. In Section II I document some simple facts about the evolution of hourly pay in the United States in the past 30 years. Section III examines these facts in more detail, while in Section IV I analyze several explanations for them. Section V presents a model of the determinants of the type of time-rated pay that is offered and generates several tests of that model.

II. Some Simple Facts About Time-Rated Pay, United States, 1967-1997

Measuring the changing extent of hourly pay among U.S. employees is only possible on a continuous and representative basis since 1979, when the question, "Is ... paid by the hour on this job?" was added to the monthly Current Population Survey. Annual calculations of the fraction of workers paid by the hour from the Outgoing Rotation Groups of the CPS are presented in Figure 1. Not surprisingly, the fractions paid hourly are higher among all workers than among full-time workers only. But for both sexes, and for all employees as well as full-time employees, the figure shows slight upward trends from 1979 through 1993 in the fraction that are

²Data from the NLSY for 1990 show that only 3.6 percent of respondents reported being on a formal piece-rate system. While 22.7 percent reported a link between earnings and performance, for 40 percent of these the link was only to a bonus that constituted a small fraction of their total earnings.

paid by the hour. The fraction is procyclical (notice the drops in 1981, 1982 and 1991), the unsurprising result of the greater cyclical of production-worker (many paid hourly) than of nonproduction-worker (relatively few paid hourly) employment.³

One might also wonder whether the surprising absence of a negative trend in hourly pay is due to differential changes in the public and private sectors, and to changes in their relative importance. The separate estimates in Table 1 for the end-points of this sample show that this is not the case. The basic result remains that, quite contrary to what experts expected, the fraction of workers paid hourly rose by about 3 percentage points among female workers, and by nearly 2 percentage points among males over this nearly twenty-year period.

Basic information on the method of time-rated pay is available from the May Supplements to the CPS from 1973 through 1978. The published data (BLS, 1982, Tables A-9, C-22) are not comparable to those on which Figure 1 is based (see Mellor and Haugen, 1986, p. 26). They do suggest, however, that the fraction paid hourly was almost identical in 1973 (when the aggregate unemployment rate was 4.9 percent) and 1978 (when it was 6.1 percent), although, as in subsequent recessions, it fell sharply from the cyclical peak in 1973 to the trough in 1975.

While broad-based random samples of the population are unavailable for this purpose before 1973, we can get some additional insights into this issue by examining various cohorts of employees from the National Longitudinal Surveys. For women the first set of columns in Table 2 presents calculations from the National Longitudinal Survey of Mature Women for 1967, the NLS Young Women for 1980, and young women from

³Beginning in 1994, with the redesign of the CPS, the questions used to infer method of pay were changed. Workers who stated that it is easier to report their earnings on an hourly basis are assumed to be hourly-paid. Those workers who offered a different answer to that question were then explicitly asked if they were paid by the hour, with positive answers to either question assumed to indicate an hourly-paid worker. The initial question beginning in 1994 is, "For your (MAIN) job, what is the easiest way for you to report your total earnings BEFORE taxes or other deductions: hourly, weekly, annually or on some other basis." The follow-up question is, "Even though you told me it is easier to report your earnings (...), are you PAID AT AN HOURLY RATE on (this) job?" Assuming that the cyclical expansion of the mid-1990s would have led to a continuing rise in the fraction paid hourly, the redesign added less than 1 percentage point to this fraction.

the NLSY in 1996.⁴ From the NLSMW I use the largest group whose average age was below that of women in the NLSY in 1996; the average age of the entire group in the NLSYW is below that of NLSY respondents. The purpose of these choices is to ensure that the most recent data describe a group that is no younger than members of the earlier cohorts, since there is strong evidence (see Section III) that the probability of being paid hourly is U-shaped in age, with a minimum at or above age 40. Using the full NLS Young Men cohort in 1981 and all men in the NLSY in 1996 assures that this requirement is met for men.

The calculations for women show that there was little change, or a decline, in the fraction of workers paid hourly between 1967 (a year of very low unemployment) and 1980 (a year of high and rising unemployment). Part of this change may have been due to cyclical factors, part may have reflected the expected secular decline in the extent of hourly pay. What is surprising is the tremendous leap in the fraction paid hourly among these young women between the cohorts observed in 1980 and 1996. This extremely sharp rise is mirrored by a similar increase among young adult men over essentially the same period. Here too, and in contrast to the comparison between the mid-1960s and 1980, a small part of the increase may be due to the cyclical recovery from the 1980-82 recession. Given the small drop that we saw during that recession in Figure 1, it must be the case that most of this rise is real.

That the NLS data show such a huge increase in the fraction paid hourly between 1980 and 1996 is astounding, especially compared to the surprising, but still relatively slight upward trend observed in the CPS data over this period among workers of all ages. It may be that the slight changes in the nature of the questions asked of the respondents between the early NLS cohorts and the NLSY are responsible for these huge differences. If we take exactly the same years and age ranges from the CPS as from these NLS cohorts, however, the results look somewhat less outlandish. Among full-time (all) female employees of these ages the fraction paid hourly rose from 0.501 to 0.574 (0.554 to 0.617) over the period 1980 to 1996. Among men the

⁴Among the original NLS cohorts the determination of payment status is made from answers to the question, "...how much do you usually earn at this job before deductions? per hour, OR per (day, week, etc.)?" In the NLSY the determination is based on the questions, "...how much do you usually earn at that job?" and "Was that per hour, per day, per week, or what?"

fraction of full-time (all) employees in these age ranges who were paid hourly rose from 0.481 in 1981 to 0.549 (0.490 to 0.562) in 1996, i.e., nearly 7 percentage points for each sex.

An additional check on these estimates is provided by data describing white male household heads from the Panel Study of Income Dynamics. The final column of Table 2 lists the fraction paid hourly in 1977 and 1992, years of almost identical aggregate unemployment. In this data set too there is no evidence of a decline in the prevalence of hourly pay; if anything, there was a small increase in hourly pay in this demographic group, corroborating the results found in the CPS and NLS data over this period.

Several different sets of evidence are qualitatively quite consistent in showing that, rather than dropping, as predictions based on the growing professionalization of the American work force might have led one to expect in the late 1960s and 1970s, in fact the fraction of employees who were paid hourly rose beginning in the early 1980s. Surprisingly, the American work force has become more, not less likely to be paid on an hourly basis.

III. Detailed Analysis of the Changing Fraction Paid Hourly

The slight upward trends shown in the previous section may hide both changes in the distributions of workers along various demographic and economic dimensions, as well as changes in the propensities of employers to pay otherwise identical workers on an hourly basis rather than to offer them salaries. In this section I examine whether changes in observable characteristics of workers and their jobs can account for the absence of a downward trend in the fraction of workers paid hourly.

As a first cut at this question consider the mean fractions of workers classified by major occupation who are paid hourly in the 1979 and 1997 CPS, presented in Table 3. Only in the less skilled of the traditional blue-collar occupations, operatives and laborers, did the fraction of workers paid hourly not rise over this period. In every other major occupation, including professionals and managers, there were sharp increases in the fractions paid hourly. Indeed, in every occupation except operatives and laborers those increases are greater than the aggregate increases presented in Figure 1.

Both these breakdowns by occupation and the evidence for a particular age group (young adults) presented in the previous section suggest that the rise in hourly pay has been much larger than is indicated by the aggregate data. To examine this issue in detail we need to account for as many determinants of the type of time-rated pay as we can. Having done so, we can then ask the questions: 1) If the determinants of hourly pay had remained unchanged over the past 20 years, what would have been the change in the fraction paid hourly over this period? 2) How does the predicted change compare to what actually occurred? To make this decomposition we need to specify a model of the determinants of hourly pay.

There is no existing theory to guide the specification of an estimating equation. I assume that those characteristics that make an individual a more attractive worker generally also signal the employer that the worker will perform well if salaried. Thus additional human capital, in the form of greater schooling or (to a point) more experience, will be associated with a greater probability of being salaried. To the extent that employers discriminate based on race or ethnicity, we should expect that underlying that discrimination is a belief that members of the minority group cannot be trusted to work hard if they are salaried. Similarly, given the evidence on pay differentials by marital status (e.g., Korenman and Neumark, 1991), we should expect that employers view married men as more likely to be productive if salaried than are single men, while married women, whose attachment to the labor force, especially in the earlier years of the sample, was less than that of married men may be less likely to be productive without direct supervision. Thus I expect that married men will be less likely than single men to be paid hourly, while married women will be more likely than singles to be hourly employees.

The results of estimating linear models describing the probability of being paid hourly in 1979 and 1997 are presented for all full-time employees, and for those in the private sector only, in Table 4.⁵ In addition to the variables whose coefficients and standard errors are presented the equations also contain vectors of

⁵Additional estimates based on all employees differ little from those presented in Table 4.

indicators for region, industry and occupation.⁶ The human capital measures have the predicted effects on the probability that a worker is paid hourly. Each additional year of education shifts about 3 percent of workers to salaried status, even within major occupation and industry groups. Additional experience reduces the incidence of hourly pay up to some point. Among men the impact of experience on the propensity to be paid hourly begins rising around at age 42 in the 1979 data (37 in the 1997 data), for women somewhat later (58 in the earlier year, 46 in 1997).

Table 4 also presents the estimated effects of other interesting demographic variables. African-Americans with otherwise identical characteristics to nonhispanic whites were about 5 percentage points more likely to be paid hourly in 1979, and that probability was an additional percentage point higher in 1997. Hispanics differ little in their hourly/salaried status from nonhispanic whites. What is most interesting among these demographic factors is the impact of marital status. In both the late 1970s and the late 1990s there is a sharp distinction between married and single men, with the former about 5 percentage points more likely to be salaried. Among women the opposite was true in 1979; but by 1997 the difference by marital status had reversed, with married women less likely to be paid hourly than single women with the same education, total experience and in the same broad occupation and industry. One might view this as striking evidence of how employers have recognized the changing role of married women in the labor force. It seems inconsistent with the impact of selectivity into the labor force, since unobservably higher-quality married women presumably constituted a greater proportion of participants when the overall female participation rate was lower.

The chief purpose in estimating these linear-probability models is to provide the basis for decomposing the changes in the aggregate fractions of workers who are paid hourly. To do so I calculate $p_{97}^* - p_{79}$, where:

$$(1a) \quad p_{97}^* = \alpha_{79} X_{97} .$$

⁶Data on method of pay are not reported for self-employed workers, so that they are excluded from all the analyses. In 1979 14.3 (5.2) percent of male (female) full-time workers were self-employed, while in 1997 12.2 (6.1) percent were. Under the assumption that self-employment is more like salaried than hourly work, these small changes suggest that, if anything, the exclusion of self-employment leads to an understatement of the rise in the prevalence of hourly-rated pay.

The α_{79} are the coefficients from the linear-probability models estimated for 1979, and the X_{97} are the variable means in 1997. I then calculate $p_{97} - p_{79}^*$, where:

$$(1b) \quad p_{79}^* = \alpha_{97} X_{79},$$

defined analogously to the terms in (1a). The difference $p_{97}^* - p_{79}$ measures what the change in the fraction paid hourly would have been if the coefficients of the equations for 1979 had remained unchanged but the means had changed, while the difference $p_{97} - p_{79}^*$ measures what the change would have been using the coefficients of the equations for 1997.

The results of the decompositions, calculated separately by sex and separately for all employees and for full-time employees only, are presented in Table 5.⁷ The actual increases in the fractions paid hourly are between 2 and 4 percent. Based on the changes in the economic and demographic characteristics of workers and their industry and occupation between 1979 and 1997, however, we would have expected declines of between 5 and 7 percent among men, and between 8 and 10 percent among women, depending on the sample definitions and on whether the base or final year's coefficients are used. Subtracting these expected changes from the actual changes observed, the fraction of men paid hourly in 1997 was 7 to 9 percentage points higher than one should have expected based on the determinants of pay status at a point in time and the changes in workers' characteristics, while among women it was 11 to 14 percentage points higher. Taking the middle figures for each sex, and estimates of wage and salary employment in 2000, the results imply that there were almost exactly 12 million fewer salaried workers in 2000 than would have been expected in 1979.⁸

⁷Similar decompositions estimated only over private-sector employees yield conclusions that are quantitatively almost identical to those implied by the results in Table 5. Another set of decompositions estimated using only nonhispanic white full-time workers also yielded essentially identical results.

⁸After most of the work on this project was completed I obtained the CPS-ORG data for 1999. In order to maintain the greatest comparability with the NLS data used here the main calculations are for 1997. Nonetheless, it is worth noting that there was a slight and steady decrease in the fraction paid hourly between 1997 and 1999. Among all female (male) employees the decrease was 0.7 (1.1) percentage points, among full-time female (male) employees the decrease was 0.7 (0.8) percentage points. The continuing shifts in the economy toward tertiary industries and the increased experience of American workers make the changes in the impacts on the adjusted percentages paid hourly when we use 1999 instead of 1997 even smaller.

One might imagine that much of the expected decline in the fraction of workers who are paid hourly is due to changes in the distribution of workers by industry and occupation. The bottom tableau in Table 5 presents the expected and unexpected changes in the fraction paid hourly computed under the assumption that the distributions of workers by major industry, occupation and sector had remained unchanged between 1979 and 1997. The results make it very clear that most of the expected decline in hourly work does not stem from shifts in the distributions of workers across industries and occupations. Instead, it is due partly to changing demographics, partly to shifts in the intercept terms (within industry and occupation).

IV. Why Are the Salaried Workers Missing?

Section III goes as far as is possible in drawing inferences from the available CPS data about the causes of the failure of the salaried work force to grow. Indeed, it makes it absolutely clear that standard explanations for change in the American labor market—an aging and better educated work force, a shift away from manufacturing employment, a move toward higher-skilled occupations—all would have led us to expect a decline in the hourly work force. In this section I examine a series of possibilities that might account for the failure of the salaried work force to grow by the roughly 9 percentage points that would have been expected based on the changing industrial, economic and demographic structure of the economy.

A. Institutional and Other Exogenous Changes

Consider first institutional changes, particularly the well-known decline in unionization that occurred over this period. Because data on union status were not included in the CPS-ORG until 1983, I could not include them in the regressions in Table 4. Reestimates of those equations for 1997, however, change the coefficients of the variables included in Table 4 only slightly. The impact of union membership on the propensity to be paid hourly is very large: In the four samples shown in Table 4 for 1997 the estimated coefficients of the indicator variable for union status were 0.130 (s.e.=0.005), 0.163 (s.e.=0.005), 0.040 (s.e.=0.006) and 0.094 (s.e.=0.009).

Between 1979 and 1997 the percentage of wage and salary workers who are unionized dropped from 24.1 to 14.1 (Hirsch and Macpherson, 1999). Assume that the impact of union status on the propensity to be classified hourly, other things equal, was the same in 1979 as in 1997, and assume for simplicity that that average impact was 0.10, based on the estimates for 1997. Then the effect of the 10 percentage-point decline in union membership over the two decades was to raise the fraction of salaried workers by 1 percentage point. Had we been able to account for the decline in the institution of trade unionism, we would have concluded that the fraction of missing female (male) salaried workers was 13 (9) percent. As an explanation of the unexpected failure of salaried employment to rise, the decline in unionization goes in the wrong direction.

While method of payment (time-rated or piece-rated, hourly or salaried within time-rated) is not explicitly linked to frequency of payment, it is possible that a linkage exists, and possible that institutions affecting the frequency of payment of earnings affect workers' pay status. In 2000 35 of 51 jurisdictions required at least some of the employees to be paid semi-monthly or more frequently. These regulations, however, changed very little between 1979 and 1997, with a few states expanding exemptions for executive, administrative and professional workers, and only one state (Massachusetts in 1993) changing the mandated maximum frequency of payment (from weekly to bi-weekly).⁹ Thus while it may be the case that wage payment laws affect a worker's hourly status, the absence of important changes in the institution suggests that it could not have been responsible for changes in the relative importance of hourly pay in the American work force over these two decades.

It is difficult to infer how changes in the coverage of the Fair Labor Standards Act might affect employers' and workers' incentives to have workers classified as hourly or salaried. Federal and state laws mandating premium pay for overtime work are not explicitly linked to workers' classification by type of time-rated pay. Both hourly and salaried workers can be subject to the overtime provisions of the FLSA, although the fraction subject is much higher among hourly workers (since executive, professional and administrative

⁹The information is from Nelson (1998) and his articles in the same outlet in each of 1980 through 1998. Current information is from www.dol.gov/esa/public/programs/whd/state/payframe2.htm.

employees are exempt). We do know that between 1978 and 1996 the percentage of private-sector employees subject to the overtime provisions of the FLSA declined from 67.8 percent to 60.1 percent, mainly because the percentage of workers in these exempt occupations rose.¹⁰ That being the case, it is difficult to see how any changes in the regulations governing overtime could account for the absence of a decline in payment by the hour.

The growing internationalization of the American economy may have contributed to the rise in the (adjusted) fraction of workers who are paid hourly, both through direct international labor mobility and through product-market competition from abroad. As with unionization, the former is a compositional issue (although it presumably works in the opposite direction from the change in unionization): Might the rise in the fraction of immigrants in the work force account for part of the adjusted increase in the prevalence of hourly pay? While there is no regular information on immigrant status in the CPS until 1994, the 1997 data suggest that the failure to account for immigrant status in the decompositions is unimportant. Immigrants were only 3 percentage points more likely in 1997 to be paid hourly than were otherwise identical native workers. With an increase in the share of immigrants in the U.S. work force of less than 5 percentage points between 1980 and 1997 the impact of immigration on pay status is surely tiny.

It is possible that growing import competition worked indirectly to lead American employers to classify as hourly many workers who otherwise would have been salaried, in order to maintain stricter controls on costs in an increasingly competitive world. This explanation is completely inconsistent with the changes by major occupation that were shown in Table 3: The least positive changes are among craft/precision workers and operatives/laborers, precisely those occupations that are most prevalent in export-sensitive manufacturing industries. It is also inconsistent with the slight drop in the prevalence of hourly pay among full-time workers between 1979 and 1997 in manufacturing, from 67.5 percent to 66.1 percent.

¹⁰Computed from U.S. Department of Labor, Employment Standards Administration, *Minimum Wage and Maximum Hour Standards Under the Fair Labor Standards Act*, 1979, Table 12, and *Idem.*, *Minimum Wage and Overtime Hours Under the Fair Labor Standards Act*, 1998, Table 3d.

More detailed evidence is available from regressions like those in Table 4, but including only private full-time employees outside of agriculture, mining, manufacturing and finance-insurance-real estate, the sectors that might have been most exposed to increased import competition. The weighted mean fractions of workers paid hourly were 0.606 and 0.645 among women in 1979 and 1997 (0.543 and 0.565 among men). Estimates based on this reduced sample suggest, just as in the previous section, that the adjusted increases in the fraction paid hourly, 0.115 among women in these industries and 0.065 among men, are far larger than the raw changes. The changes in this reduced sample differ little from those in the entire sample. Just as our wages are not set in Beijing (Freeman, 1995), so too it seems unlikely that our methods of time-rated pay are determined there.¹¹

B. More Complex Changes

Several other changes may have been associated with the sharp rise in the (adjusted) fraction of workers who are paid hourly. These changes cannot be viewed as exogenous, but may instead result from some underlying ultimate cause that has generated them and the change in the classification of workers by pay status. All we can do is examine whether these other changes are large enough to account for the change in the fraction paid hourly.

Before doing this, however, it is worth examining whether the phenomenon noted here is artificial: Perhaps the nominal classification of hourly work has not changed, but the nature of hourly work has converged to that of salaried work. Many of the aspects of salaried work—more attractive employment benefits, more freedom, and others—may now be associated with hourly work but may not have described hourly work in the 1970s. Hourly work may in part have been redefined to look the same as salaried work.

The broadest information available to allow examining this possibility on cohorts of workers with relatively unchanging labor-force attachment is in the young male cohorts of the NLS. In particular, among

¹¹Yet another possibility is that technology-induced changes in employers' scale of operation might have altered the fraction of workers paid hourly. Probits based on the NLSYM for 1981 and men in the NLSY for 1996 suggest that there is essentially no relationship, other things equal, between plant size and the propensity to be paid hourly. Thus even if average scale has changed, it could not have contributed to a rise in the fraction of workers paid hourly.

men 29-39 in 1981 and 31-38 in 1996 identical questions were asked about ten different nonwage aspects of work, mostly on whether the worker had a particular employment benefit. I concentrate on the more important of these in terms of their shares in labor costs: Access to health insurance; paid vacations; paid sick leave; access to a retirement plan (other than OASI); and whether the worker has flexible hours. The samples are similar in size to the samples of full-time employees for which the fraction paid hourly was reported in Table 2.¹² The average percentages of workers receiving these benefits are shown in the upper panel of Table 6. In both years, and for all benefits, the results corroborate the impression that hourly workers are less likely to receive a particular benefit or enjoy a particular job amenity.

To uncover the impact of the possibly changing definition of hourly work and adjust for workers' observable characteristics, I estimate probits describing:

$$(2) \quad \Pr\{\text{Benefit}=1\} = \beta X + \gamma_1 D96 + \gamma_2 \text{HRLY} + \gamma_3 D96 \cdot \text{HRLY} + v,$$

where the β and γ_i are parameters to be estimated, X is a vector of variables determining whether a particular benefit is received, $D96$ indicates that the observation is from 1996, HRLY indicates that the worker is paid hourly, and v is an error term. The sign and magnitude of γ_3 show the direction and size of any relative change in the incidence of the benefit between hourly and salaried younger men between 1981 and 1996. In particular, if $\gamma_3 > 0$, we may infer that hourly work and salaried work became more similar over this period (since for all five measures the benefit was less prevalent among hourly workers in 1981).

The estimates of the marginal effects of the variables in (2) are shown in the lower panel of Table 6. Included in the vector X are all the variables that one might include in equations describing earnings, such as education, total experience and job tenure, and indicators of demographic characteristics, location, union status, and of one-digit industry and occupational attachment. Since actual earnings and benefits are partly determined by the workers' full earnings, these are the appropriate variables to include. For the major

¹²The 10 percent decline in the numbers of observations compared to Table 2 is caused by the requirement for information on the variables included in the linear-probability models describing the presence of the particular employee benefits.

pecuniary nonwage benefits that workers receive, the estimates of γ_3 present a mixed picture. There was a small but significant relative shift in the 1980s and the first half of the 1990s toward hourly workers receiving paid vacations, and smaller, but statistically insignificant shifts toward their receiving employer-paid health insurance and paid sick leave. But the relative probability that an hourly employee had an employer-paid retirement plan fell (albeit statistically insignificantly).

The one major change is in the relative probability of having flexible work hours on one's job, the results for which are shown in the final column of Table 6.¹³ The relative incidence of flexible hours among hourly-paid workers rose nearly 10 percentage points across these two cohorts. Along this one dimension hourly work did become more like salaried work. This is the only indication that the failure of the fraction paid hourly to fall reflects a redefinition of the nature of hourly work.¹⁴ Coupled with the small and conflicting changes on all the other dimensions of working conditions, there is little evidence to support the claim of a sharp convergence in the nature of salaried and hourly work.¹⁵

One might view the growth of temporary help supply services as a possible explanation of the surprising absence of any diminution in the importance of payment by the hour. It is true that the temporary help supply industry grew over the period in question. Estevao and Lach (1999) suggest that its share in nonfarm employment rose from 0.5 percent in 1979 to 2.2 percent in 1996; Autor (2000), using different underlying data sources, indicates that the number of temporary help supply employees rose from 433 thousand

¹³The question asks, "Which of the fringe benefits on this card does your employer make available to you? ... Flexible work hours?"

¹⁴One might argue that it is inappropriate to account for the changing industrial and occupational structures of the labor force, as changes in them may be determined simultaneously with changes in the probability of hourly pay. Equations (2) were reestimated without the industry and occupation indicators. All of the estimated γ_3 were more negative than those generated by the full model, but the declines never exceeded 0.01.

¹⁵Another possible change that might imply that the "loss" of salaried workers is illusory is if pay—salary or hourly—has been replaced by stock options differentially by type of time-rated pay. There is very little information on this; but a 1999 Bureau of Labor Statistics survey (BLS, 2000) makes clear that only 1.7 percent of all employees received any kind of stock option; and these are almost all high-paid, presumably salaried workers. It thus seems highly unlikely that any growth in the prevalence of stock options since 1979 can account for much of the phenomenon. (I am indebted to Brooks Pierce for making these data available to me.)

in 1979 to 2.8 million in 1998, i.e., from 0.4 percent to 2.1 percent (my calculations). Both studies suggest a rise of 1.7 percentage points in the fraction of employees in this industry over the roughly two decades that have been the focus in this study.

In estimates for 1997 that expand on those in Table 4 by including an indicator for employment in Census industry 731, Personnel Supply Services, the coefficients are 0.238 and 0.182 for male and female full-time workers respectively. Even making the extreme assumption that the entire 1.7 percentage-point increase in the share of this industry in total employment is comprised of workers who otherwise would have had the same propensity to be paid hourly as the average worker in 1979, the phenomenal growth of temporary employment accounts for less than 0.4 percentage points of the roughly 9 percentage-point shortfall in the salaried work force.

As implied at the start of this subsection, even this upper bound is too high if one considers the growth of the temporary help industry as an economic change that is endogenous to the labor market. One of the reasons for the substitution of (presumably) hourly-paid temporary help workers for employees who might otherwise have been salaried permanent workers may be the same factors that generated the rise in hourly pay.

While the decompositions in Section III are based on changes in methods of payment for workers with particular observable characteristics, they cannot capture differential changes in behavior within the cells defined by the n-dimensional vector of characteristics for which the estimates control. It is well known that, for whatever underlying reasons, the distribution of earnings in the United States has widened since the late 1970s even within human-capital and demographic cells (see DiNardo *et al.*, 1996), and there was a concomitant rise in inequality in the distribution of nonmonetary returns to work (Hamermesh, 1999). Those being so, one might predict that the unexpected increase in the probability of being paid hourly has been especially concentrated among workers with unobservably few labor-market skills, and that those with unobservably large skill endowments have been increasingly likely to be salaried. Finding this would not

demonstrate a cause of the change in pay classification, but it might indicate that the change is connected to the same changes that have generated increasing earnings inequality.

To examine this additional cut of the data for 1979 and 1997 I estimate log-earnings equations separately for full-time male and female employees. The residuals from these equations are then arrayed in ascending order. Within each quantile of the distribution of earnings residuals I next calculate the average residual from the estimates of the probability of being paid hourly for full-time employees presented in Table 4.

The average residuals, ϵ_i , $t=1979, 1997$, from the linear-probability estimates in Table 4 are listed in Table 7 for various ranges of the distribution of the quantiles of the residuals of these log-earnings equations. They can be interpreted as the fractions by which an employee's probability of being paid hourly departs from the regression line describing method of pay, as a function of the residual of his/her earnings. Moving down each column we observe the unsurprising result that those workers whose earnings are unexpectedly low are also those who are unexpectedly likely to be paid hourly, while those workers with unexpectedly high earnings are unexpectedly likely to be salaried.

The penultimate row of the table presents for each sex:

$$(3) \quad \Delta_{|\epsilon_i|} = \sum w_i [|\epsilon_{i97}| - |\epsilon_{i79}|] ,$$

where i subscripts the quantile of the earnings residuals, and the weights w_i are proportionate to the widths of the quantiles listed in the left-hand column Table 7. The estimated $\Delta_{|\epsilon_i|}$ are positive for both sexes. This implies that, after adjusting for individuals' economic and demographic characteristics, the distribution of the probability of being paid hourly widened over this 18-year period in a way correlated with the widening distribution of returns to workers' unobservable characteristics. Moreover, as the last row of the table shows, while only slightly more than half of this change is concentrated in the lower half of the distribution of earnings residuals among men, over 100 percent of the change among women is in the lower half. Most of this widening of the unexplained distribution of hourly pay is due to changes that occurred in the bottom half of the distribution of unobservable characteristics that generate differences in earnings.

Table 8 summarizes the welter of calculations presented in this and the previous section. Clearly, standard explanations do not account for more than a small fraction of the unexpected failure of hourly pay to become less prevalent. Something more than can be inferred from simple analyses of changes in the impacts of readily measurable demographic variables and proxies for technology is required.

V. A Model of Method of Time-Rated Pay, and Some Tests

The results in Table 7 suggest that changing unobservables (to the econometrician) that have affected the distribution of earnings may also have affected the probability that a worker is paid by the hour. In this section I develop a simple model that rationalizes hourly pay, and I provide some indirect tests of the relative importance of sources of shocks to the equilibria in the model. None of these tests is by itself definitive; but taken together they provide support for a consistent explanation of the phenomena identified in Section III.

A. A Rudimentary Model

Throughout the discussion I maintain the assumption that the fixed costs of offering different types of pay systems within a work group are prohibitive. Either all workers in the work group are paid hourly or all are salaried. Given the prevalence of occupational differences in the propensity to be paid hourly (see Section III), this assumption seems reasonable.

Motivating this fundamental assumption is the belief that workers identify with their work group. Thus in deciding whether to treat time-rated workers as hourly or salaried the employer views the work group's dynamics as generating behavior that characterizes all its members. The outcomes of those dynamics are presumably substantially affected by the group members' inherent characteristics, particularly their ability to commit to each other and to the employer. It is, however, inherently difficult to generate quantitative evidence on what are essentially inchoate behavioral differences among groups. Perhaps the best observational evidence is from the Western Electric (Hawthorne) studies of hourly workers in the 1930s:

While there was no written rule to this effect, helping one another, like job trading, was in practice forbidden. In spite of this rule, however, it was done a good deal when technically there was no justification for it. (Roethlisberger and Dickson, p. 505)

They had an informal standard of a day's work which functioned for the group as a norm of conduct, as a social code. (*Ibid.*, p. 517)

It has been shown that the internal function of this organization was to control and regulate the behavior of its members. (*Ibid.*, p. 525)

I assume that the work group consists of N employees. Each hourly-paid worker produces an output x if monitored. Monitoring means that the firm must keep records on how many hours each worker puts in during each pay period. (As one personnel expert declared, "If [we pay] hourly, we must be willing to control hours."¹⁶) The costs of monitoring are m per worker, so that, if workers are monitored, their net output is $x-m$ per worker. I assume that the nature of salaried work is such that no monitoring can be done, so that the employer incurs no costs of monitoring. Instead, employers hope that salaried workers become "part of the team" (develop a commitment to the organization) and produce the maximum possible, x . Indeed, the offer of salaried employment is the employer's expression of trust in the work group and is offered precisely because the employer believes the group's members have underlying characteristics that will generate the group's commitment to work. (In terms of the epigraph to this study, "the salaried guys hustle [other things equal].") Without monitoring, however, the development of this commitment is uncertain. Net output per salaried worker will depend on how much the typical member of the work group shirks when he/she is not monitored, i.e., the extent to which members of the salaried work group fail to develop a commitment to the organization.¹⁷

Output per worker in a salaried group (identical for each worker) is $x - \theta$, with θ described by the density:

$$(4) \quad \theta \sim f(\theta), \quad 0 \leq \theta \leq x .$$

θ depends on all the characteristics of the workers (both observable and unobservable to the employers) and on interactions among individuals in the work group. The possible output of salaried workers can range from

¹⁶Interview with Dr. John Moore, Assistant Director of Human Resources for Compensation, University of Texas at Austin, October 17, 2000.

¹⁷The role of the development of commitment in organizations has been discussed in formal models of the psychological nearness of the principal and agent (Frey, 1993), and of the optimal size of work groups (Auriol *et al.*, 1999).

complete shirking ($\theta = x$) to full commitment ($\theta = 0$). I assume that the behavior of a particular salaried work group is not known to the employer before the method of pay administration is chosen, but the employer does have a subjective distribution $f(\theta)$ based on his/her observation of other work groups and of the characteristics of the individuals who make up his/her work group. $f(\theta)$ is the employer's subjective commitment function.

Make the realistic assumption that there are many work groups in the economy. Then the probability that a particular work group will be paid hourly rather than be salaried is:

$$(5) \quad p_h = \int_m^x f(\theta) d\theta .$$

The lower are the costs of monitoring hourly workers, the greater is the probability that a work group will be paid hourly. If the mass of employers' subjective commitment functions moves to the right, more work groups will be paid hourly than before. As workers' characteristics make employers more pessimistic about the work group's willingness to commit to the organization, employers will respond by paying hourly and incurring monitoring costs.

This simple model describes the contract that determines the method of time-rated pay used in each work group. The microeconomic determinants can be aggregated to yield a system of relative demand/supply equations:

$$(6a) \quad E^h/E^s = D(W^h/W^s, m) , D_1 < 0, D_2 < 0 ;$$

$$(6b) \quad E^h/E^s = S(W^h/W^s, \theta^*) , S_1 > 0, S_2 < 0 ,$$

where E^i and W^i denote aggregate employment and wages of workers paid according to method i , and θ^* is the average propensity of workers to commit to an employer. Both declining monitoring costs and decreasing average willingness to commit are consistent with an increase in E^h/E^s . If monitoring costs drop, we will observe that the equilibrium relative wage, W^h/W^s , will increase; if the average willingness to commit declines, however, the relative wage of hourly workers will fall.

B. Some Tests

While we cannot directly measure either monitoring costs or willingness to commit to an employer, an examination of the change in relative pay of hourly and salaried workers provides an indirect test of their relative importance in explaining the unexpected failure of hourly-paid work to decline. Table 9 presents estimates of log-earnings equations using the same CPS data that underlie the results in Table 4. For each year and sector I present the earnings premium (actually, penalty) for hourly work adjusted for all the CPS demographic variables plus indicators for detailed industry. The results make it absolutely clear that the relative earnings of hourly-paid workers fell over these two decades. A declining willingness to commit is consistent with changes in both relative employment and earnings by method of time-rated pay, while declining monitoring costs are not.

This explanation is also consistent with the main findings of the cross-section regressions presented in Table 4. More educated workers, those at the peak of their age-earnings profiles, and men who have made the commitment to be married are less likely to be paid hourly than otherwise identical workers, other things equal. Especially relevant is the decline between 1979 and 1997 in the impact of marital status on the propensity to be paid hourly among women.

A direct test would require attitudinal measures that proxy workers' trustworthiness along with the information on pay status and demographics that was used in Section III.¹⁸ The attitudes would be measured long before current pay status is determined (ideally immediately before the worker enters the full-time labor force) to avoid problems of endogeneity. No such data are available in the several data sets used in Sections II-IV; and no other data set appears to combine all the required information. We are thus thrown back upon using extraneous information to test the hypothesis that changes in workers' willingness to commit underlie the unexplained failure of salaried employment in the United States to increase.

¹⁸That trustworthiness and not one's own degree of trust is crucial in generating interpersonal commitment is demonstrated in an experimental context by Glaeser et al (2000).

The General Social Surveys of the National Opinion Research Center provide annual readings on demographics, attitudes and some economic outcomes for cross sections of American adults. While the essential measures of method of pay are not included in the surveys, time series of attitudinal measures can be constructed. None of the questions directly elicits respondents' willingness to commit to their employers under varying circumstances; but the GSS does ask a number of questions that can be viewed as indicating the extent to which the respondents are optimistic about their fellow people and about the state of the world generally. The measures I use here are indicators of anomie and of worldview.¹⁹ In both cases I interpret positive answers on these questions as indicating that these people's outlooks make them more trustworthy and thus more likely to help generate commitment in the work group to which they belong.

Table 10 shows the mean responses to questions reflecting the degree of respondents' anomie and eliciting their worldviews for all the subperiods for which the GSS provide the data. The questions designed to reflect anomie have simple Yes-No responses, with a Yes answer indicating anomie. The worldview questions are on Likert (1 to 7) scales. I infer that a lower number on the first worldview question indicates a greater distrust of one's fellow human beings, while on the second question a higher number shows greater distrust. The evidence from these data is admittedly sparse; and regrettably in the case of the questions about worldview the data do not go back so far as desirable. On all four questions, however, there are significant changes between the earliest (or earlier) period and the mid-1990s; and the direction of change in each case implies that Americans became more pessimistic, less trusting of each other and more willing to believe evil of their fellows. All of these changes are consistent with a labor market in which diminishing commitment leads optimally to an increasing prevalence of hourly pay.

While there are no data sets that contain information on workers' current hourly status and on their attitudes reflecting trustworthiness/commitment, the NLS data used in Section IV.B offer another approach to examining the ideas in this model at the micro level. For the men from the NLSYM in 1981 and the NLSY in

¹⁹For a recent attempt to use GSS questions like these as outcomes to be explained, see Alesina and La Ferrara (2000).

1996 we also have information on their job satisfaction roughly ten years earlier (1971 and 1985 respectively), thus minimizing potential feedback from hourly status to job satisfaction. These data can be used along with current determinants of hourly-pay status to examine whether early attitudes affect one's likelihood of holding a salaried position, and whether the impact of those attitudes has changed over time (or across cohorts, since we cannot distinguish between these two possibilities). In essence they are an indicator of person-specific attitudes that allows us to adjust for unobservables in the determinants of pay status.

The data on job satisfaction in the NLSYM and NLSY (see Hamermesh, 2001) are based on the identical questions, “How do you feel about your job? Do you like it: very much (4); like it fairly well (3); dislike it somewhat (2); dislike it very much (1)?” Since the fractions of workers responding that they dislike their work is around 10 percent, in constructing indicators of early job satisfaction I combine responses (2) and (1). Table 11 presents the results of estimating probits that pool the NLSYM and NLSY data and include all the available controls that are defined consistently in the 1981 NLSYM and 1996 NLSY (measures of hours worked, the standard human capital variables—education, experience and job tenure, as well as union status, various demographic variables and indicators of major industry and occupation). In the first two probits I distinguish only between those workers who were very satisfied and those who were not ten years before, while in the final two I distinguish among workers who were very satisfied, somewhat satisfied or less than satisfied ten years before.

Two main results are apparent from the table. First, differences in prior job satisfaction in the NLSYM are an important predictor of current pay status, with workers who were more satisfied 10 years beforehand more likely than otherwise identical workers to be salaried. The interaction terms in columns (2) and (4) show, however, that the impacts of earlier differences in prior job satisfaction among men in 1981 had essentially disappeared by 1996.²⁰ Second, and most important, when we account for the differences among workers in

²⁰The job-satisfaction terms are, however, highly significant jointly. In column (2) a joint test of their significance yields $p=0.0001$; in column (4) the chi-square statistic testing the hypothesis that the two coefficients on the terms in VSAT are zero yields a p-value of 0.0001, while that on the terms in SSAT yields a p-value of 0.11.

the lower half of the distribution of prior job satisfaction (in columns (3) and (4)), we find that the coefficient on the indicator for 1996 drops by over 25 percent, from 0.241 to 0.173. That there was a much smaller decline in this term between columns (1) and (2) suggests that distinguishing between workers who are somewhat satisfied and the 10 percent who are dissatisfied is crucial. The results imply that it is the attitudes of those with relatively bad attitudes that have changed in such a way as to account for a substantial part of the rise in the adjusted fraction of workers who are paid hourly.²¹

Additional, albeit weak supporting evidence from the same sets of data is provided by an examination of levels and changes in the average job tenure of workers in the NLSYM and NLSY by pay status between 1981 and 1996. Not surprisingly, the tenure of hourly-paid employees was lower, other things equal (including education, age and many other demographic, industry and occupation indicators), than that of salaried employees by about 6 months ($t = -1.87$) on a mean for salaried workers in 1981 of 74 months. This difference grew by 4.0 months ($t = -1.03$) by 1996. The decreasing relative job tenure of hourly workers may be a direct reflection of the overall declining relative willingness to commit; or it may come about indirectly because of the effect of the changing commitment probability on the relative wages of hourly workers that we demonstrated earlier. Regardless, it indicates an additional path by which this apparent change in attitudes can affect a labor market.

A final additional bit of evidence on changing commitment is provided by an examination of changes in annual transitions in pay status over this period. Table 12 is based on Current Population Survey respondents in 1979 (1997) who were also included in the CPS in 1980 (1998) and who were employed in each of the adjacent years.²² I list the probability of remaining in hourly (salaried) status, p_{hh} (p_{ss}), by sex for all employees and for full-time workers in 1979 and 1997. All the Δp_{ii} are negative—the probability of remaining in a particular pay status decreased over this period. What is interesting and an additional corroboration of the

²¹If we restrict the sample to workers with fewer than 10 years of job tenure (and whose prior job satisfaction is thus based on work at a different employer), the results are very similar.

²²The algorithm for merging the respondents in the two years sorted on household identification, race, sex and age.

importance of changing commitment in determining time-rated pay status is that $\Delta p_{hh} - \Delta p_{ss}$ is significantly negative in all four samples. By the late 1990s a worker who managed to land a salaried position was relatively more likely to transition to an hourly job than in the late 1970s.²³

VI. Conclusions and Extensions

In the 1970s one would have expected that subsequent changes in the structure of the American work force and jobs would have led to a sharp increase in the fraction of workers who are salaried. It did not. Indeed, the fraction salaried fell slightly between the late 1970s and late 1990s. This shortfall was not due to the decline of unionism, to increased immigration or to increasing foreign product-market competition. So too, it did not arise from changing overtime and wage-payment regulations that might be linked to workers' classification as salaried or hourly, nor from the growth of the temporary help industry. A theory of employers' responses to workers' differing trustworthiness is consistent with cross-section evidence on the determinants of pay status, on changes in relative pay differentials and on job tenure by method of time-rated pay. It is also consistent with direct evidence of changing attitudes. Whether it accounts for the majority of the unexplained change in pay methods regrettably cannot be inferred from these calculations.

The evidence presented to support the explanation for the surprising phenomenon documented here is regrettably quite sparse—limited by the absence of successive micro data sets that provide information on both pay status and attitudes. Absent such data the only additional recourse for testing this explanation might be to use information from other developed economies. Only in Australia is hourly pay fairly common, with so-called casual workers typically paid hourly. Interestingly, between 1984 and 1999 the percentage of full-time employment accounted for by casual workers rose from 5.7 to 11.1 percent.²⁴ (Among part-timers the incidence was unchanged at 65 percent.) Whether this reflects the same phenomenon that I have demonstrated

²³The CPS does not provide information on whether the worker left his/her employer; but under the assumption that most job transitions are across detailed industry lines, we can use information on changes in detailed industry affiliation to expand the analysis in Table 12. Repeating this analysis shows that the decline in the relative probability of staying in a salaried position over this period is generated by relative declines among both job-stayers and job-movers.

²⁴The earlier data are unpublished. Mark Wooden of the University of Melbourne generously provided all of these data.

here or is due instead to changes that have interacted with a loosening of restrictions or the changing role of unions in the Australian labor market is unclear.

There is no postwar tradition of hourly-paid jobs in Western Europe. In many of them, however, fixed-duration employment contracts have grown in importance since the early 1980s. Much of the growth has been attributed to the rigidity imposed on those labor markets by restrictive legislation, but direct tests of the effects of such legislation have often yielded very weak results (Abraham and Houseman, 1994). Absent the institution of hourly-paid jobs in Western Europe, one might instead view these contracts as a response to the same kind of declining worker commitment that appears to underlie the failure of salaried work to become more prevalent in the United States.

That salaried employment has unexpectedly failed grow substantially in importance should be disturbing to labor economists and economists generally. For labor economists the lack of growth and the evidence that it is correlated with a widening of the returns to workers' unobservable (to the econometrician) characteristics suggests that the difficulties that have generated greater inequality in the returns to work have also affected the nature of workplace arrangements. For other economists, and for the public generally, the absence of a decline in the fraction of workers who are in jobs that do not allow the development of a commitment to the workplace should be disturbing in its implications for economic growth, economic inequality and social cohesion.

References

- Katherine Abraham and Susan Houseman, "Does Employment Protection Inhibit Labor Market Flexibility? Lessons from Germany, France and Belgium," in Rebecca Blank, ed., *Social Protection versus Economic Flexibility: Is There a Trade-off?* Chicago: University of Chicago Press, 1994.
- Alberto Alesina and Eliana La Ferrara, "The Determinants of Trust," NBER Working Paper No. 7621, March 2000.
- Emmanuelle Auriol, Guido Friebel and Lambros Pechlivanos, "Teamwork Management in an Era of Diminishing Commitment," CEPR Discussion Paper No. 2281, London, November 1999.
- David Autor, "Outsourcing at Will: Unjust Dismissal Doctrine and the Growth of Temporary Help Employment," NBER Working Paper No. 7557, February 2000.
- Charles Brown, "Firms' Choice of Method of Pay," *Industrial and Labor Relations Review*, 43 (February 1990): 165S-182S.
- John DiNardo, Nicole Fortin, and Thomas Lemieux, "Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach," *Econometrica*, 65 (1996): 1001-44.
- Marcello Esteveao and Saul Lach, "The Evolution of the Demand for Temporary Help Supply Employment in the United States," NBER Working Paper No. 7427, December 1999.
- Eugene Fama, "Time, Salary, and Incentive Payoffs in Labor Contracts," *Journal of Labor Economics*, 9 (January 1991): 25-44.
- Richard Freeman, "Are Your Wages Set in Beijing?" *Journal of Economic Perspectives*, 9 (Summer 1995): 15-32.
- Bruno Frey, "Does Monitoring Increase Work Effort? The Rivalry with Trust and Loyalty," *Economic Inquiry*, 31 (October 1993): 663-70.
- Edward Glaeser, David Laibson, José Scheinkman and Christine Soutter, "Measuring Trust," *Quarterly Journal of Economics*, 115 (2000): 811-46.
- Robert Goldfarb, "The Employer's Choice of Paying Wages or Salaries," *Industrial Relations Research Association Proceedings*, 40 (December 1987): 241-47.
- Sheldon Haber and Robert Goldfarb, "Does Salaried Status Affect Human Capital Accumulation?" *Industrial and Labor Relations Review*, 48 (January 1995): 322-37.
- Daniel Hamermesh, "Changing Inequality in Markets for Workplace Amenities," *Quarterly Journal of Economics*, 114 (November 1999): 1085-1124.
- , "The Changing Distribution of Job Satisfaction," *Journal of Human Resources*, 36 (2001): forthcoming.

- and Stephen Trejo, "The Demand for Hours of Labor: Direct Evidence from California," *Review of Economics and Statistics*, 82 (February 2000): 38-47.
- Barry Hirsch and David Macpherson, *Union Membership and Earnings Data Book*. Washington: BNA, 1999.
- Sanders Korenman and David Neumark, "Does Marriage Really Make Men More Productive?" *Journal of Human Resources*, 26 (1991): 282-307.
- Edward Lazear, *Personnel Economics for Managers*. New York: Wiley, 1998.
- Dalton McFarland, *Management: Principles and Practices*. New York: Macmillan, 1968.
- Earl Mellor and Steven Haugen, "Hourly Paid Workers: Who They Are and What They Earn," *Monthly Labor Review*, 109 (February 1986): 20-6.
- Richard Nelson, "State Labor Legislation Enacted in 1997," *Monthly Labor Review*, 121 (January 1998): 3-21.
- Paul Pigors and Charles Myers, *Personnel Administration: A Point of View and a Method*, 7th Edition. New York: McGraw-Hill, 1973.
- Fritz Roethlisberger and William Dickson, *Management and the Worker*. Cambridge, MA: Harvard University Press, 1943.
- Randall Schuler, *Personnel and Human Resource Management*. St. Paul: West, 1987.
- Stephen Trejo, "The Effects of Overtime Pay Regulation on Worker Compensation," *American Economic Review*, 81 (September 1991): 719-40.
- U.S Bureau of Labor Statistics, *Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2096, September 1982.
- U.S. Bureau of Labor Statistics, *Pilot Survey on the Incidence of Stock Options in Private Industry in 1999*, Press Release, October 11, 2000.

Table 1. Sample-Weighted Mean Fractions Paid Hourly, CPS-ORG, 1979 and 1997

Year	Male			Female		
	All	Private	Government	All	Private	Government
All Employees						
1979	.573	.605	.403	.615	.662	.427
1997	.595	.611	.495	.641	.684	.454
Full-Time Employees						
1979	.544	.574	.379	.550	.601	.348
1997	.565	.580	.471	.587	.633	.393

Table 2. Sample-Weighted Mean Fractions Paid Hourly, National Longitudinal Surveys, 1967-96; PSID, 1977, 1992

	NLS Data				PSID Data White Male House- hold Heads
	Women		Men		
	All	Full-time	All	Full-time	
Year	1967				
Age range	30-39				
Fraction hourly	.360	.295			
N =	1702	1226			
Year	1980		1981		1977
Age range	26-36		28-38		
Fraction hourly	.332	.270	.203	.197	.459
N =	2548	1941	2756	2652	1990
Year	1996		1996		1992
Age range	31-38		31-38		
Fraction hourly	.514	.448	.407	.402	.471
N =	3208	2249	3389	2911	2358

Table 3. Sample-Weighted Mean Fractions Paid Hourly by Occupation, CPS-ORG, 1979 and 1997, Full-time Employees

Occupation	Male		Year	Female	
	1979	1997		1979	1997
Professional and technical	.194	.219		.300	.328
Managerial	.132	.181		.267	.328
Clerical and sales	.382	.466		.514	.659
Service occupations	.589	.736		.709	.785
Farm workers	.431	.681		.654	.772
Craft and precision workers	.752	.775		.761	.822
Operatives and laborers	.842	.841		.900	.895

Table 4. Sample-Weighted Linear Probability Estimates of the Probability of Being Paid Hourly, Full-time Workers, CPS-ORG, 1979 and 1997^a

Variable:	Male		Female	
	All Sectors	Private	All Sectors	Private
	1979			
Education	-.0328 (.0007)	-.0314 (.0007)	-.0364 (.0011)	-.0318 (.0012)
Experience	-.0100 (.0004)	-.0102 (.0004)	-.0064 (.0005)	-.0068 (.0006)
Experience ² /100	.0118 (.0008)	.0126 (.0008)	.0055 (.0012)	.0065 (.0013)
African-American	.0546 (.0052)	.0541 (.0058)	.0548 (.0064)	.0558 (.0076)
Hispanic	-.0062 (.0066)	-.0159 (.0070)	-.0099 (.0097)	-.0143 (.0106)
Married	-.0461 (.0036)	-.0454 (.0039)	.0130 (.0043)	.0240 (.0048)
Adj. R ²	.388	.393	.263	.237
N=	74485	62275	45492	35925

Table 4, continued

	1997			
Variable:				
Education	-.0322 (.0008)	-.0311 (.0009)	-.0500 (.0010)	-.0492 (.0011)
Experience	-.0079 (.0005)	-.0082 (.0005)	-.0060 (.0005)	-.0069 (.0006)
Experience ² /100	.0106 (.0010)	.0110 (.0011)	.0065 (.0012)	.0078 (.0013)
African- American	.0686 (.0056)	.0697 (.0061)	.0607 (.0058)	.0652 (.0067)
Hispanic	.0024 (.0055)	-.0064 (.0058)	-.0169 (.0072)	-.0232 (.0079)
Married	-.0590 (.0037)	-.0598 (.0040)	-.0210 (.0041)	-.0182 (.0045)
Adj. R ²	.326	.340	.244	.210
N =	61799	52792	49996	39892

^aAlso included in the equations are: Sets of 3 variables for major region, 16 indicator variables for industry, 7 indicators of major occupation (and, in the estimates for all sectors, indicators of major sector). Indicators of race, Hispanic and marital status are also included, as are total usual weekly hours of work.

Table 5. Decompositions of the Sample-Weighted Change in the Fraction Paid Hourly between 1979 and 1997

	Male		Female	
	All Employees	Full-time	All Employees	Full-time
Mean:				
1979	0.5733	0.5437	0.6153	0.5501
1997	0.5949	0.5651	0.6407	0.5867
	Changes:			
Actual: $p_{97} - p_{79}$	0.0216	0.0214	0.0254	0.0366
All characteristics changing:		Expected		
$p^*_{97} - p_{79}$	-0.0666	-0.0696	-0.0973	-0.1020
$p_{97} - p^*_{79}$	-0.0564	-0.0535	-0.0853	-0.0868
		Unexpected		
Using α_{79}	0.0882	0.0909	0.1228	0.1385
Using α_{97}	0.0780	0.0749	0.1107	0.1234
No changes in industry or sector means:		Expected		
$p^*_{97} - p_{79}$	-0.0312	-0.0339	-0.0560	-0.0546
$p_{97} - p^*_{79}$	-0.0290	-0.0271	-0.0530	-0.0490
		Unexpected		
Using α_{79}	0.0527	0.0553	0.0815	0.0912
Using α_{97}	0.0506	0.0485	0.0785	0.0855

Table 6. Comparisons of Probabilities of Having Various Employee Benefits, NLSYM 1981, NLSY (Men) 1996, Weighted, Full-Time Employees

	Health Insurance	Paid Vacation	Paid Sick Leave	Retirement Plan	Flexible Hours
	Means				
Hourly:					
1981 (N=442)	0.864	0.796	0.573	0.693	0.218
1996 (N=1177)	0.782	0.787	0.491	0.521	0.623
Not Hourly:					
1981 (N=1909)	0.921	0.881	0.797	0.726	0.370
1996 (N=1522)	0.852	0.853	0.749	0.645	0.713

Probits Describing the Probability of Receiving the Benefit^a

Ind. Variable:

Indicator 1996	-.030 (.010)	.005 (.012)	-.007 (.019)	.016 (.020)	.305 (.021)
Paid Hourly	-.009 (.016)	-.030 (.019)	-.112 (.027)	.023 (.030)	-.062 (.032)
Paid Hourly in 1996	.024 (.015)	.036 (.018)	.010 (.030)	-.046 (.036)	.099 (.037)

^aThe coefficients show the impact of a one-unit increase in the indicator variable. Standard errors of these responses are in parentheses. The probits also include continuous measures of education, years of total experience (and its square) and months of job tenure (and its square). Indicators of marital and union status, location in the South, and African-American are included, as are indicators for one-digit industry and occupation. The sampling weights from both cohorts are used.

Table 7. Weighted Averages of Residuals of the Probability of Hourly Pay, by Percentile of the Distribution of Residuals of Ln(Earnings), Full-Time Employees, CPS 1979, 1997^a

Percentile of the Distribution of Ln(Earnings) Residuals	Male		Female	
	1979	1997	1979	1997
0-5	.0539 (.0074)	.0606 (.0084)	.0126 (.0100)	.0560 (.0096)
5-10	.0730 (.0069)	.1146 (.0078)	.0952 (.0094)	.1180 (.0088)
10-25	.0471 (.0037)	.0824 (.0042)	.0877 (.0050)	.1041 (.0048)
25-50	.0288 (.0028)	.0273 (.0032)	.0368 (.0039)	.0476 (.0035)
50-75	-.0043 (.0028)	-.0212 (.0032)	-.0102 (.0040)	-.0145 (.0037)
75-90	-.0464 (.0035)	-.0656 (.0042)	-.0611 (.0052)	-.0831 (.0050)
90-95	-.0873 (.0060)	-.0979 (.0074)	-.1238 (.0084)	-.1535 (.0086)
>95	-.1519 (.0058)	-.1192 (.0065)	-.1873 (.0083)	-.1958 (.0084)
$\Delta_{ ei }$: Entire distribution:	.0133		.0148	
Bottom half	.0073		.0340	

^aWeighted standard error of the mean residual in parentheses.

Table 8. Decomposition of the Changing Probability of Being Paid Hourly, 1979-97

Change	Effect (in percentage points)
Observed	+2
Due to Change in:	
Measurable factors in CPS 1979 and 1997	-7
Unionization	-1
Hours laws	≤ 0
Immigration	+0.15
Increased openness of product markets	≤ 0
Related to Measurable Change in:	
Temporary work force	$< +0.4$
Benefits/working conditions	[-2.2, +4.9]

Table 9. Adjusted Wage Premia for Full-Time Hourly Work, 1979 and 1997(Based on Weighted CPS Data)^a

	Men		Women	
	All	Private	All	Private
1979	-.131 (.004)	-.134 (.004)	-.133 (.004)	-.133 (.004)
1997	-.162 (.005)	-.175 (.005)	-.207 (.005)	-.225 (.006)
Difference	-.031 (.006)	-.041 (.007)	-.074 (.006)	-.092 (.007)

^aThe estimates are of coefficients from regressions that contain all the variables included in the estimates in Table 4 plus indicators for each of over 200 three-and four-digit industries. The standard error is included in parentheses.

Table 10. Anomie and Worldview, General Social Surveys, United States, 1972-1994^a

Question	Year(s)				Difference 1993-94 – 1972-82
	1972-82	1983-87	1988-91	1993-94	
Anomie Fraction agreeing that:					
In spite of what some people say, the lot (situation/condition) of the average man is getting worse, not better.	.617 (8675)	.569 (4338)	.600 (3742)	.691 (2243)	.074 [.011]
It is hardly fair to bring a child into the world with the way things look for the future.	.398 (8697)	.379 (4463)	.374 (3802)	.440 (2266)	.042 [.012]
Worldview Average on Likert scale:		1983-87		1994	Difference 1994 – 1983-87
World is basically filled with evil and sin (1), to There is much goodness in the world which hints at God's goodness (7)		4.719 [.030] (2946)		4.562 [.041] (1449)	-.157 [.051]
Human nature is basically good (1), to Human nature is fundamentally perverse and corrupt (7)		2.981 [.032] (2941)		3.196 [.042] (1447)	.215 [.053]

^aSource: Selected variables listed at <http://www.icpsr.umich.edu/gss/subject/s-index.htm>. Standard deviations of the means and standard errors of differences in means are in brackets, while the numbers of respondents answering the question are in parentheses.

Table 11. Probits Describing the Probability of Being Paid Hourly, Full-time Workers NLSYM 1981 and NLSY 1996 (N=4485)^a

Independent Variable:	(1)	(2)	(3)	(4)
Indicator 1996 (D96)	.241 (.017)	.215 (.019)	.241 (.017)	.173 (.037)
Very satisfied 10 years ago (VS10)	-.042 (.014)	-.101 (.025)	-.067 (.021)	-.154 (.035)
VS10 · D96		.089 (.034)		.142 (.052)
Somewhat satisfied 10 years ago (SS10)			-.032 (.021)	-.072 (.034)
SS10 · D96				.063 (.047)
Pseudo-R ²	.222	.224	.223	.224

^aThe coefficients show the impact of a one-unit increase in the indicator variable. Standard errors of these responses are in parentheses. The probits also include continuous measures of education, years of total experience (and its square) and months of job tenure (and its square). Indicators of marital and union status, location in the South, and African-American are included, as are indicators for one-digit industry and occupation. The sampling weights from both cohorts are used.

Table 12. Sample-Weighted Transition Probabilities of Time-Rated Pay Status, CPS-ORG 1979-80, 1997-98

	Male		Female	
	All Employees	Full-time Year t	All Employees	Full-time Year t
P_{hh}				
1979	0.868 (0.003)	0.867 (0.003)	0.847 (0.003)	0.829 (0.004)
1997	0.827 (0.003)	0.819 (0.004)	0.831 (0.003)	0.813 (0.004)
Δp_{hh}	-0.041 (0.004)	-0.047 (0.005)	-0.160 (0.005)	-0.016 (0.006)
p_{ss}				
1979	0.856 (0.003)	0.862 (0.003)	0.811 (0.004)	0.829 (0.005)
1997	0.796 (0.004)	0.800 (0.004)	0.763 (0.005)	0.775 (0.005)
Δp_{ss}	-0.060 (0.005)	-0.062 (0.005)	-0.048 (0.006)	-0.054 (0.007)
$\Delta p_{hh} - \Delta p_{ss}$	0.019 (0.007)	0.015 (0.007)	0.032 (0.008)	0.038 (0.009)

Figure 1. Fraction of Workers Paid by the Hour, CPS 1979-97

