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Time Is Money? Wage Premiums and Penalties for Time-Related Occupational Demands

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Abstract

Despite research linking time-related work demands to gender inequality, the literature lacks a comprehensive analysis of wage premiums and penalties associated with differing temporal demands. Using longitudinal data and fixed-effects models that address unobserved heterogeneity among workers, we examine how various temporal constraints imposed by occupations are associated with pay. Unlike prior studies, our analysis separates an individual's working hours from an occupation's expected work time. We find pay premiums attached to the requirements for long hours and meeting frequent deadlines, but we find wage penalties for occupations that require much temporal coordination and allow little work-structuring discretion. Schedule irregularity is linked to lower pay for women but higher pay for men. Thus, differing remuneration logics appear to apply to different time-related occupational demands. The analysis also indicates that the premium for the occupation's work-time expectation is lower for women, particularly professional and managerial women, even after considering their actual working hours. We suggest that employers' suspicion of women's ability to comply with their occupation's work-time norm, which is likely more pronounced for professional and managerial women, might contribute to these results.

Scholars of labor market inequality have increasingly called attention to the important roles of time-related work demands. For example, researchers argue that the rising prevalence of excessively long working hours among U.S. workers contributes to persistent occupational gender segregation and a slow convergence of the gender wage gap, as women's family obligations make them less likely to take high-paying positions for which overwork is the norm (Epstein 2004; Cha 2013; Cha and Weeden 2014; Weeden, Cha, and Bucca 2016). Because workers with better control of their schedules encounter less work-family conflict (Kelly et al. 2014; Moen et al. 2016), being in occupations that impose fewer time constraints also reduces the pay penalty women experience while raising young children (Yu and Kuo 2017). In her presidential address at the American Economic Association meeting, Claudia Goldin (2014) even claimed that the "last chapter" of eliminating gender inequality in pay would ultimately involve enhancing jobs' temporal flexibility and delinking the remuneration system from jobs' normative time requirements.

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Despite our emerging understanding that time-related work demands are a key component for explaining wage inequality, our knowledge of how different types of temporal demands are linked to earnings is still limited. Most research on how wages are associated with time-related working conditions focuses on long working hours or the availability of flextime schedules (Weeden 2005; Heywood, Siebert, and Wei 2007; Cha and Weeden 2014; Weeden et al. 2016). Workers nevertheless face other time-related demands, many of which are inherent to their occupational activities and contexts. Occupations differ not only in their expectations of working hours but also in the need to meet frequent and strict deadlines, to arrange work around clients' or coworkers' time, to dictate how workers structure their workday, and to accommodate irregular work schedules (Jacobs and Gerson 2004b; Clawson and Gerstel 2014; Goldin 2014; Yu and Kuo 2017). To our knowledge, no research has examined or compared the wage returns of these differing temporal demands. Consequently, we do not know whether meeting certain temporal demands may be more financially rewarding than meeting others; in fact, we cannot be sure that there are pay premiums for all time-related demands in spite of their similarity in requiring sacrifices in workers' personal lives.

Even for the temporal demand most studied—namely, long working hours—prior research on wage return has shortcomings. Although relevant studies often emphasize how corporations tie normative expectations about work time to monetary rewards, they generally use a person's actual working hours to represent the amount of time an employer expects a person to work in the analysis (Cha and Weeden 2014; Weeden et al. 2016). Individuals, however, could spend much time at work without being compelled to—for example, those with low hourly pay may put in extra time to achieve a desired level of total income. In such a case, not only are workers' hours an inaccurate measure of their occupations' work-time norms, but working long hours may not generate a pay premium. A discrepancy between actual and expected working hours may also arise from the fact that some people (e.g., men and childless women) can comply with their occupations' work-time norms more than others (e.g., mothers of young children). Aside from being unable to reflect their theoretical focus, previous studies' use of individuals' working hours to indicate the time demand they face hampers our ability to tell whether the rewards attached to occupational work-time norms are conditional on individuals' putting in long hours, or whether the returns to individuals' hours depend on their occupations' norms.

In this study, we use longitudinal data from the National Longitudinal Survey of Youth 1997 (NLSY97) in conjunction with detailed occupational information generated by the Occupational Information Network (O*NET) to shed light on the questions unanswered by prior research. First, we use separate measures of individuals' working hours and their occupations' expectations about work time to investigate the wage returns to each of these components of work time and to examine whether the return to one is contingent on the other. Second, we address how other temporal constraints imposed by occupations, such as pressure to meet frequent deadlines, a requirement for temporal coordination with others, deprivation of the autonomy to allocate time within a workday, and irregularity of work schedules, are associated with wages. Not only do we provide rare comparisons of pay premiums or penalties for a range of time-related occupational demands, but our use of longitudinal data also improves on prior research concerning temporal working

conditions and wages, which typically relies on cross-sectional analyses (Weeden 2005; Heywood et al. 2007; Cha and Weeden 2014; Leuze and Strauß 2016; Weeden et al. 2016). By showing how the same people gain or lose wages by switching to occupations with different temporal demands, our analytic approach considerably reduces the possibility that unobserved personal attributes that sort different workers into occupations with differing demands, rather than the demands, ultimately explain any wage disparities.

For all the temporal demands examined in this study, we also ask whether their wage premiums or penalties differ between men and women. By analyzing wage returns to multiple time-related demands, as well as the potential gender differences in these returns, this study can provide critical insights into gender inequality in earnings. Specifically, evidence from the analysis can inform whether women's lower wages are rooted in their lower likelihood to face the temporal demands that are highly compensated or in their being rewarded less than men in occupations imposing specific time-related constraints. Finally, the remuneration system for managerial and professional occupations, which are argued to be especially "greedy" in their demands for workers' time and commitment (Coser 1974; Blair-Loy 2003;, 2004; Jacobs and Gerson 2004a; Cha and Weeden 2014), may be linked to temporal demands differently from that of the other occupations. Therefore, we also investigate how the pay premiums or penalties for time-related demands differ between managerial-professional occupations and the other occupations.

PREVIOUS RESEARCH ON TEMPORAL DEMANDS AND PAY

Temporal requirements and expectations at work are crucial to people's organization of work and personal life (Epstein and Kalleberg 2004). Most research concerning time-related work demands focuses on their effects on family life. Working long hours, having an irregular schedule, and lacking flexibility within working hours are all thought to intensify parents' —especially mothers'—feelings of time deficits, work-family conflict, and psychological distress, resulting in hardship on families (Presser 2005; Bianchi and Milkie 2010; Clawson and Gerstel 2014; Kelly et al. 2014; Moen et al. 2016; Schneider and Harknett 2019). Recent studies, however, also draw attention to the link between temporal demands and earnings inequality (Weeden 2005; Cha and Weeden 2014; Goldin 2014; Weeden et al. 2016). A few researchers argue that the pay premium for "overwork," defined as working considerably longer than the standard 40 hours per week, is the key to understanding the gender gap in pay. Because the hourly pay for those who overwork has risen over time and because women continue to be less likely than men to overwork, women's earnings persistently lag behind (Cha and Weeden 2014; Weeden et al. 2016).

Although studies have found higher hourly wages for overworking individuals (Cha and Weeden 2014; Weeden et al. 2016), they have important limitations. First, these studies rely on cross-sectional comparisons of working hours and pay. It is plausible that unobserved characteristics, such as health conditions or productivity, that lead people to occupations that expect longer hours also explain their higher pay. Second, by using individuals' working hours to approximate their occupations' normative expectations about work time, existing research fails to account for discrepancies between individuals' behavior and the structural forces imposed on them and fails to demonstrate how the monetary returns of each may be

different Cha 2013; Cha and Weeden 2014; Weeden et al. 2016). As an example of such discrepancies, Glass and Noonan's (2016) study of teleworkers shows that people's working hours vary during the period working for the same employer, when the work-time norms they face are likely unchanged. These researchers also find that while an employee is with the same employer, an increase in working hours beyond the standard 40 hours results in overall lower hourly returns, suggesting that individuals' overwork behaviors do not always generate a premium. In this sense, the return to individuals' long hours may differ from that to the occupational norm of overwork.

Aside from the discrepancies and potentially differing returns, prior research's lack of distinction between individuals' working hours and occupations' expected work time also makes it impossible to assess how the return to the former depends on the latter. In occupations where working beyond 40 weekly hours is a norm, those who overwork may be more likely considered as exhibiting a required level of work devotion, which could enable them to receive promotions and hourly pay increases. Conversely, working overtime when it is not required, as in the case of many hourly workers, may not lead to any additional appreciation or higher wages per hour.

Beyond long working hours, prior research points out occupational differences in their demands for workers to set schedules based on clients' or collaborators' needs, to allocate time and priorities exactly as told, to be "on call" for urgent deadlines, and to accommodate irregular, nonroutine schedules (Golden 2001; Presser 2005; Clawson and Gerstel 2014; Goldin 2014; Yu and Kuo 2017). These demands could reduce workers' schedule flexibility (if workers must coordinate schedules with others or structure their workday exactly as told), impose constant time pressure (if workers frequently need to meet deadlines), or increase the difficulty to arrange childcare or make personal plans (if work schedules are highly variable). Either scenario would add stress and work-family conflict (Karasek 1979; Boisard et al. 2005; Chung 2011; Rugulies et al. 2012; Kelly et al. 2014; Schneider and Harknett 2019). In her analysis of four broad occupational groups—law, business, health, and science and technology professions—Goldin (2014) specifically shows that science- and technology-related occupations stand out in their lower demands for worker-client contacts, coordinating schedules with coworkers, and meeting frequent deadlines. She argues that the lower demands explain why science and technology occupations do not reward long working hours disproportionately, while business and law occupations do. In spite of her attention to occupational differences in time-related requirements, Goldin's analysis focuses on how these requirements explain gender pay gaps within professions, not wage disparities across occupations. Her argument that varying temporal demands all drive the logic of the remuneration system nonetheless suggests that a wage premium may be tied to not just the norm of long hours but each of the other demands. Such premiums may explain occupational differences in pay.

Because no prior studies offer a systematic comparison of wage returns for various time-related occupational demands, we also know little about whether the return to each type of demand differs between men and women. Goldin's (2014) claim that larger gender pay gaps exist within occupations that demand longer working hours—presumably because women are less able to comply with this time demand—implies that the pay premium for the

occupational demand of overwork is greater for men. Nevertheless, it is unclear whether we will find the same gender difference for all types of temporal demands. Moreover, as we separate individuals' working hours from their occupations' expected work time in this study, we can better assess Goldin's argument that women's lower ability to overwork causes them to receive a smaller return from working in occupations requiring very long hours.

RATIONALES FOR LINKING TEMPORAL DEMANDS TO WAGES

Although we have limited evidence about how wages are associated with different types of time-related occupational demands, several theories about work provide rationales for either positive or negative relationships between temporal working conditions and pay. Below we discuss the arguments for the cases for wage premiums and penalties, respectively.

Case for Wage Premiums

Research on the pay premium for overwork frequently cites "ideal worker" norms as the theoretical basis (Cha 2013; Cha and Weeden 2014; Weeden et al. 2016). As gendered organization theory maintains, modern organizations are structured with the underlying assumption that workers' sole and primary commitments are to their jobs (Acker 1990). Under this assumption, workers are expected to work long hours, arrange their personal lives around the demands of their jobs, and willingly accept schedules and assignments that may inconvenience their families, such as working non-standard shifts or being relocated by the company (Blair-Loy 2004; Epstein 2004; Jacobs and Gerson 2004a). These expectations, often referred to as ideal worker norms, determine how workers are evaluated and compensated (Williams 2001). Because employers assume that the undivided devotion of ideal workers translates into greater productivity, they not only prefer hiring people who seem able to satisfy ideal worker norms but also offer higher wages to those whose jobs require them to follow such norms. Following this argument, jobs that impose more time-related demands can be expected to pay more.

Although gendered organization theory focuses on assumptions and norms prevailing in workplaces, systematic measures of workplace norms are rarely available. However, measuring normative expectations about time at the occupational level is manageable. Occupations vary in the extent to which ideal worker norms are ingrained in their cultures (Cha 2013; Cha and Weeden 2014). If these norms and their associated temporal requirements are indeed used to assess workers' devotion, productivity, and pay, then we should also find wage premiums for time-related demands at the occupational level. Of course, not all jobs within the same occupation have equivalent temporal demands. Nevertheless, since an occupation-specific working condition represents the average level of demand of jobs in the occupation, an occupation with a higher level of a certain demand should pay more, on average, if the demand is linked to a wage premium.

A separate line of research, rooted in compensating wage differentials theory (Smith 1979; Garen 1988; Cousineau, Lacroix, and Girard 1992), also suggests wage premiums for time-related occupational demands (Goldin 2014). According to this theory, occupations entail desirable and undesirable working conditions, aside from their pay, and workers

count these conditions as part of their total compensation packages. Whereas desirable occupational attributes, such as a high level of autonomy, increase workers' overall compensation, undesirable working conditions, such as the need to face irregular schedules, serve as deductions from the monetary reward. Although occupations differ in their tasks and working conditions, those aiming to recruit workers of equivalent productivity must offer similar sums of pecuniary and nonpecuniary compensation. Workers therefore face a tradeoff between favorable working conditions, including time-related ones, and wages. Some research indeed finds wage costs for flextime schedules and other temporal amenities in the workplace (Heywood et al. 2007). As occupations requiring equivalent levels of training and preparation often vary considerably in temporal demands—for example, broadcast news analysts face tight deadlines far more frequently than credit counselors—we may similarly find those allowing more desirable temporal conditions to be able to pay less. Thus, holding workers' training and productivity constant, we should find a wage premium for any occupational demand that encroaches workers' personal time or schedule flexibility.

Despite their different focuses, the theories of ideal worker norms and of compensating differentials both predict pay premiums for time-related occupational demands, making an empirical distinction difficult. One potential difference between the two perspectives lies in their expectations regarding the gender difference in the wage premiums for temporal work demands. While compensating differentials theory assumes a general tradeoff between temporal flexibility and pay, it also posits that the utility of this flexibility differs between men and women (Glass and Camarigg 1992, p. 133). Because the gendered household division of labor compels women to spend more time than men on child rearing and other domestic chores (Sayer, Bianchi, and Robinson 2004; Sayer 2010), women are likely willing to trade more of their wages for temporal amenities at work. As a result, the pay penalties for time-related amenities—or the pay premiums for temporal demands—would be greater for women. By contrast, the ideal worker norm perspective would predict greater returns to temporal demands for men. Because the ideal worker image is a masculine one, built on men's presumed ability to sacrifice family life for work (Acker 1990; Williams 2001), when men are in occupations with considerable temporal demands, they may be more likely than women to be seen as ideal workers and rewarded as such. Prior research on how professional women face extra scrutiny about their devotion offers evidence that women are not automatically considered as ideal workers when in occupations with substantial temporal demands (Williams, Blair-Loy, and Berdahl 2013). The difficulty for women to be perceived as ideal workers could discount the pay premiums for the time-related demands they face.

Case for Wage Penalties

In contrast to the ideal worker norm and compensating differentials models, labor market segmentation theory offers a rationale for wage penalties for time-related occupational demands (Kalleberg and Sørensen 1979; Dickens and Lang 1988; Kalleberg 2003; Hudson 2007). The theory argues that labor markets are divided into multiple segments with invisible barriers preventing fair competition across segments. In such markets, certain positions, such as jobs in firms with monopoly power and occupations with artificially high thresholds to enter, are able to provide far more rewards without the workers being more productive. Some researchers refer to the additional rewards as noncompetitive "rent"

to be automatically given to owners of privileged positions regardless of the jobholder's performance (Krueger and Summers 1988; Petersen 1992; Kristal 2017). This rent is not limited to monetary payments; it can be in forms of nonpecuniary amenities as well. In fact, because the labor market segmentation process facilitates considerable inequality between rewards for "good" and "bad" jobs, positions that pay more could also come with more extensive nonmonetary benefits. For instance, research shows that higher-paying jobs are more likely to provide fringe benefits including health insurance, a pension, and paid sick leave, and they tend to be more stable and secure (Kalleberg, Reskin, and Hudson 2000; Kalleberg 2011; Kristal 2017; Yu 2017).

Desirable time-related working conditions can also serve as compensation distributed in tandem with wages. A few studies examining job-level conditions show a positive association between pay and temporal flexibility; people with jobs that provide more schedule flexibility and control receive higher wages (Gariety and Shaffer 2001; Weeden 2005). Other research finds that high-status occupations, such as managerial and professional occupations, tend to have larger percentages of workers who enjoy flextime schedules (Golden 2001). However, because existing research generally uses cross-sectional data, which cannot account for unobserved heterogeneity, it is unclear whether the bundling of high pay and flexible schedules merely reflects the greater overall compensation for more productive workers. More importantly, prior research has not addressed the returns to many temporal demands that are embedded in occupational activities, such as the demands for meeting frequent deadlines (e.g., news reporters), coordinating schedules with clients (e.g., sales representatives), allocating time and priorities exactly as told (e.g., bus drivers), and accommodating schedule irregularity (e.g., restaurant food preparation workers). If the processes that stratify jobs into desirable and undesirable ones also occur at the occupational level, we may similarly expect high-paying occupations to impose fewer temporal constraints while low-paying occupations impose more. That is to say, we would expect wage penalties for time-related occupational demands.

Our review thus far provides theoretical reasons for both pay premiums and penalties for time-related occupational demands. The theories generally make no distinction among various types of temporal demands, but this does not necessarily mean that different demands must be tied to wages in a uniform way. It is possible that some temporal constraints are treated as intrinsic features of low-wage occupations while others are taken as signals of workers' devotion or sacrifices that warrant additional rewards. We also consider this possibility in the analysis.

HETEROGENEITY IN THE RETURNS TO TEMPORAL DEMANDS

Prior research often finds that professional and managerial occupations differ from the other occupations in time-related practices and expectations. Overwork, for example, is more prevalent among managers and professionals (Coser 1974; Blair-Loy 2004; Epstein 2004; Cha and Weeden 2014). At the same time, managers and professionals are less bound to specific starting and ending times each day (Golden 2001). Such workers also more likely to work remotely, typically from home, giving them additional temporal flexibility (Noonan and Glass 2012).

The nature of work explains why time-related expectations and requirements differ for managers and professionals compared to other workers. Professional and managerial work often lacks well-defined, standardized tasks, and its outcome is likely to be shaped by team effort. Therefore, assessing individual effort and performance of professional and managerial workers is especially difficult, which leads employers to seek absolute commitment from these workers (Coser 1974; Blair-Loy 2004; Wharton, Chivers, and Blair-Loy 2008). This commitment expectation is thought to contribute to a culture that equates sacrifices of personal time to devotion (Blair-Loy 2004; Epstein 2004), which explains the high prevalence of overwork (Cha and Weeden 2014). Meanwhile, because the norms for high devotion and long hours are entrenched in the professional-managerial culture and even in the workers' identities (Blair-Loy 2003), to the extent that there is a stigma against using family-friendly policies (Wharton et al. 2008), employers can more comfortably offer managers and professionals flextime schedules without worrying about employees shirking work.

Given the differing temporal expectations and practices in professional and managerial occupations, the associations between wages and time-related work conditions may also differ between workers in these occupations and the rest. Using a small sample from a single U.S. state, a prior study shows that the availability of flextime schedules is negatively associated with earnings of nonprofessional women but positively associated with pay for professional ones (Johnson and Provan 1995). However, we do not know whether the returns for time-related occupational demands, such as the requirements for working overtime and meeting frequent deadlines, are also heterogeneous between professional and nonprofessional occupations.

On the one hand, certain occupational demands may boost the ideal-worker image more for managers and professionals than for those in other occupations, making the premiums for these demands greater for these groups. This is particularly the case with respect to the demand for long working hours because managers and professionals are typically salaried workers exempt from overtime pay, whereas hourly or other nonprofessional workers tend to be eligible for overtime pay. The differing remuneration rules may make employers more likely to equate extended working hours with devotion for the former. On the other hand, if occupations with greater time-related demands pay more mainly because they must compensate workers for the sacrifices required, nonprofessional workers may see meeting intensive temporal demands as a more unusual and hence greater sacrifice, compared to managers and professionals. The latter, who already anticipate time pressure and temporal inconveniences, may therefore demand less compensation for meeting extra time-related requirements, resulting in their smaller wage premiums.

If, instead, a temporal demand is associated with a pay penalty, as expected by labor market segmentation theory, we may also find differences by professional status. While the theory predicts occupations with more temporal disamenities to pay less, this pattern may only exist for nonprofessional occupations. The professional-managerial culture that especially rewards temporal sacrifices may make the bundling of lower pay and greater time-related constraints less likely among professional and managerial occupations. Besides, the labor market segmentation model expects workers with characteristics disfavored by employers to

be disproportionately disadvantaged (Kalleberg and Sørensen 1979; Kalleberg 2003). Being less preferred than managers and professionals, nonprofessional workers in occupations with intensive temporal demands could be exceptionally poorly paid, making the negative association between temporal demands and pay stronger for them. Following the same logic, the negative relationship between time-related demands and pay may also be more pronounced for women than for men.

As our discussion thus far indicates, the three theories about the mechanisms of wage determination lead to somewhat different expectations regarding the association between time-related occupational demands and pay as well as how this association may vary across differing groups of workers. To contrast these differences succinctly, table 1 summarizes the hypotheses derived from each of the theories.

METHODS

Data

This study uses data from rounds 1–17 of the NLSY97, which has been collecting information from a nationally representative sample of individuals born from 1980 to 1984 since 1997. The NLSY97 interviewed respondents annually through round 15 and biannually from round 16 onward. The 17 rounds of data capture a considerable number of working years of a contemporary cohort. By round 17, fielded in 2016–17, all respondents were in their mid- to late 30s and likely to have experienced multiple job changes and major life events (e.g., childbirth). The longitudinal data enable us to use fixed-effects modeling techniques, as elaborated below, to show how individuals' wages change as they shift to occupations with diverse temporal demands. This design reduces most of the unobserved heterogeneity. Although our analytic approach can potentially miss those who never changed occupations, the long duration of our data ensures such cases are rare (2.4% of the respondents in the analytical sample).

We pool all rounds together to create a time-varying person-year sample. Because we are interested in working conditions and wages, we select only the years in which respondents reported a current or most recent job. We exclude the observations if the reported jobs were not employee-type jobs, given that earnings for the self-employed may follow a different logic, such as reflecting the level of capital investment. We also eliminate those who had only one observation with an employee-type job throughout the 17 rounds of the NLSY97, as our use of fixed-effects models requires each respondent to have at least two observations in the sample. To ensure our wage analysis is not driven by outliers, we further eliminate observations in which respondents' pay was less than $1/hour (<1%).[2] After these selections and the exclusion of observations that miss information on key variables, the analytical sample contains 4,347 men and 4,197 women (95% and 96% of the original

[2]Cha and Weeden (2014) also exclude those with very high wages (e.g., above $500/hour). We nevertheless think that our use of log hourly wages as the dependent variable, as indicated below, already attenuates the potential outlier effect caused by those reporting exceptionally high wages. Setting an arbitrary upper wage limit may prevent our analysis from reflecting the reality of the very high income inequality at the top of the distribution in the United States today. In any case, our additional analysis showed similar results if we further excluded the observations with very high hourly wages or if we excluded no observations for having too-high or too-low earnings.

sample, respectively), with 45,063 person-years for the former and 44,974 person-years for the latter.[3]

In addition to the NLSY97, we use the O*NET database to measure time-related occupational demands (more details in the next section). The O*NET program was developed under the sponsorship of the U.S. Department of Labor for the purpose of compiling information on occupational attributes and requirements, based on surveys of job incumbents, occupational experts, and occupational analysts. With rich detail for a large number of occupations, the O*NET database enables researchers to add occupation-specific working conditions to individual-level survey data (e.g., McClendon, Kuo, and Raley 2014). Because the NLSY97 respondents' working years roughly coincided with the years during which the O*NET collected information (Yu and Kuo 2017), merging the O*NET data with the NLSY97 sample is especially fitting.

Variables and Measurement

To estimate pay premiums or penalties for time-related occupational demands, we use log hourly wages of respondents' jobs as the dependent variable for all models. The NLSY generates respondents' hourly pay rates for each job on the basis of their reports of usual working hours and wages. The logarithmic transformation of hourly wages enables us to reduce the skewness of the variable. Although workers, especially salaried workers, are typically more concerned about their total than their hourly pay, we examine hourly instead of monthly or annual earnings because the gap in total income between those working excessive hours and those not would be substantially amplified when the former also receive a premium per hour.[4]

The main predictors in the analysis are a series of time-related occupational conditions: the expectation of long working hours, the extent of deadline pressure, the amount of temporal coordination required, the autonomy to allocate time and priorities within a workday, and the irregularity of work schedules. The NLSY records occupations for respondents' current or most recent jobs at each round, regardless of whether respondents had changed companies since the last interview. Our analytic sample contains a total of 481 occupations, with an average of 187 observations per occupation. We extract the relevant occupation-specific measures from the O*NET data (version 20.1, released in 2015) and merge them with the NLSY97's three-digit occupation codes, using Yu and Kuo's (2017) method to reconcile any discrepancies between the occupation codes in the two sources.[5]

[3]In an additional analysis, we limited the sample to those whose working hours were not extremely short or long (i.e., including only those working 10–100 or 15–80 hours per week), to avoid any outliers driving the results. We did not find the main results to change in any meaningful way. Similarly, we tried to exclude young workers (<20 or 22 years of age) who were enrolled in school at the time of observation because the pay practices for odd jobs held by young students may be different. We did not find that this exclusion altered our results substantially, either.

[4]For example, when the hourly rates are the same, a person working 50 hours per week would simply make 25% more total earnings than one who put in the standard 40 hours. If the former makes more each hour, however, his or her total income could be much more, even double the latter's. The hourly measure thus has implications for the total wage gap between those who overwork and those who do not. It is also impossible to separate the portion of total wages due to more hours from the portion of them due to rewards beyond the normal compensation for the extra time if using monthly or annual earnings as the dependent variable.

[5]The O*NET collects and updates some items for a portion of occupations each year. Thus, the O*NET data released in any given year could contain information collected up to 10 years ago. Given this, and given that most respondents in our sample had not worked much more than a decade, we think that extracting occupational data from just the 2015 O*NET data is appropriate. Our additional

For the occupation's expectation about work time, we adopt the O*NET's measure of the typical hours of work, derived from the question about whether people in a given occupation typically work (1) less than 40 hours, (2) 40 hours, or (3) more than 40 hours per week. The O*NET coded these responses as 1, 2, and 3, respectively, and then averaged the responses for each occupation to create an indicator. The median of this indicator among all occupations included in the Census 2002 classification (which the NLSY97 uses) is 2.32. Given that the value would be 2 if all respondents for an occupation reported 40 typical working hours, a median value of 2.32 indicates that working beyond 40 weekly hours is common in the majority of U.S. occupations. Because a higher value of the O*NET measure of working hours means a larger proportion of people in the occupation consistently working more than the standard 40 hours, we refer to this indicator as the occupation's expectation of overwork.

Next, we introduce the O*NET's measure of deadline pressure in the analysis. We consider time pressure from strict and frequent deadlines to be a critical time-related demand because such pressure increases perceived work intensity, exacerbates job strain and work-family conflict, and worsens sleep quality and health for workers (Karasek 1979; Boisard et al. 2005; Shultz, Wang, and Olson 2010; Chung 2011; Rugulies et al. 2012). The O*NET respondents were asked to measure how often their occupation requires meeting strict deadlines on a five-point scale ranging from 1 (never) to 5 (every day). The O*NET reports the average score for each occupation as the extent of deadline pressure.

In addition, we include a measure for the amount of temporal coordination required for the occupation. Occupations that require cultivating relationships with clients or working in teams are likely to obligate workers to coordinate schedules with others more often.[6] Such coordination can reduce workers' flexibility and autonomy (Gallie, Felstead, and Green 2004; Goldin 2014; Yu and Kuo 2017), which in turn increases work-family conflict (Kelly et al. 2014). We construct an index for the amount of temporal coordination required using three O*NET items concerning (1) the level of importance of working with a group or team to perform the current job, (2) the extent to which one needs to coordinate or lead others to accomplish work activities, and (3) the degree to which the occupation requires face-to-face discussion with individuals or teams.[7] The O*NET respondents were asked to answer these questions on a 1–5 scale, with 5 being the highest level. As with other measures, the O*NET reports the average response for each occupation for all three items. We standardized the original score distributions for these items and used the alpha scoring method to combine them into a single index (Cronbach's α = .77). Because the standardization shifts the mean for each item to zero, the index created is ranged from negative to positive values, unlike the other indicators, which only contain positive values.

analysis indicated that, for the measures used in this study, the correlations among the various O*NET versions are high (about .8 to .9).

[6]Occupations in which individuals must work in teams or coordinate with others are typically part of a larger production that requires multiple people serving nonredundant roles (e.g., actors). Individuals in such occupations are unlikely to have those with whom they work cover for them; rather, they may be under greater pressure to make personal sacrifices to avoid jeopardizing the entire production. Indeed, previous research finds that those working in teams report higher levels of job stress (Kalleberg, Nesheim, and Olsen 2009).

[7]Although the O*NET has other indicators about workers' need to be in contact with others, we think that the requirement for face-to-face discussions is especially indicative of reduced flexibility at work, as other types of contact (e.g., by phone or e-mail) can be done remotely and may be easier to coordinate.

Also related to temporal flexibility is whether workers are allowed to determine their tasks and priorities during their working hours. Workers who have control over when to work on each task can potentially adjust their work to accommodate demands from their personal lives (e.g., not to take on a time-consuming task on the day their child is sick), thus reducing work-family conflict. We introduce in the analysis the O*NET's measure of the extent to which workers in the occupation can freely determine their work activities and priorities.[8] The indicator is the average of O*NET respondents' answers, which are on a 1–5 scale, with 5 being the maximum amount of freedom. We refer to this indicator as work-structuring autonomy.

Aside from the aforementioned temporal work demands, having non-routine schedules is also likely to create stress and impinge on workers' personal lives (Schneider and Harknett 2019). Irregular work schedules, even when they are somewhat predictable, may increase the difficulty of making childcare and other personal arrangements. We use the O*NET's measure of occupation-level schedule irregularity, which is based on the question about whether a given occupation's work schedules were (1) regular, with established routines and set schedules; (2) irregular, varying with weather conditions, production demands, or contract conditions; or (3) seasonal. The O*NET averages the responses (1–3) for each occupation to generate the indicator, with a higher value indicating greater schedule irregularity.

To provide more information on the time-related occupational demands examined in this study, table 2 presents descriptive statistics, including the mean values by gender and broad occupational group, for the five measures. It also provides examples of occupations with high and low levels of overwork, time pressure, temporal coordination need, work-structuring autonomy, and schedule irregularity. According to the mean values in the sample, professional and managerial occupations have a stronger expectation of overwork, a higher level of deadline pressure, a greater need for temporal coordination, more freedom to structure their workday, but a lower level of schedule irregularity than other occupations (which, for convenience, are referred to as nonprofessional occupations in the table and hereafter). Despite these statistically significant differences ($P < .05$), the selected examples indicate that both professional and nonprofessional occupations can demand high or low levels of overwork, deadline pressure, temporal coordination, work-structuring autonomy, and schedule irregularity. In fact, there is much variation in the levels of these demands within each broad occupational group. With respect to gender differences, the occupations to which men belong have greater prevalence of overwork, impose higher deadline pressure, involve greater schedule irregularity, and, somewhat surprisingly, allow less freedom to structure work activities than the occupations women have. Men's occupations nevertheless require less temporal coordination with other people ($P < .05$). Thus, women do not always face lower temporal constraints in their occupations than men.

[8]Because of our focus on occupational demands, an ideal measure should be the sacrifice of work-structuring autonomy. However, the O*NET only provides values concerning the freedom to structure work, without the raw data used to calculate such values. We are unable to reverse code the original data and construct an indicator of the deprivation of autonomy. For simplicity, we group the autonomy to structure work with other occupational demands, without separately referring to it as an occupational amenity.

Because one of our objectives is to separate the financial return for individuals' working hours from any return associated with their occupation's normative work time, we also include the NLSY97 respondents' self-reported working hours in the analysis. Although some researchers use a binary indicator of working 50 or more hours per week to measure overwork (e.g., Cha and Weeden 2014), we construct a continuous measure of weekly working hours to more precisely capture how individuals' pay changes with their work time. Given that salaried employees spending extremely long hours at work may face diminishing returns to their time, we also add the square term of weekly working hours to estimate the potentially nonlinear relationship.

Unlike the case of working hours, the NLSY97 contains relatively little information on individuals' experiences with deadline pressure, temporal coordination, work-structuring autonomy, or schedule irregularity.[9] Consequently, we cannot compare returns to individual behavior with those to occupational expectations for the time-related demands other than that about overwork, although, in the case of these demands, workers seem unlikely to do much more or less than what is expected of them. We nevertheless used the limited data in the NLSY97 about workers' schedule control and schedule volatility to validate the measures derived from the O*NET, including the occupation's time coordination requirement, allowed discretion to structure work, and schedule irregularity, and found high validity of our measures.[10]

Table 3 shows how men's and women's working hours are correlated with various temporal demands of their occupations as well as the correlations among these demands. Although the prevalence of overwork in the NLSY97 respondents' occupations is positively correlated with their actual working hours, the correlation is modest (.36 for men and .34 for women). The modest correlation suggests variation in actual working hours within occupations.[11] Despite the variation, our additional analysis indicates that respondents in occupations ranked higher in overwork prevalence do work longer hours on average. The correlations between individuals' working hours and other temporal demands, such as pressure to meet frequent deadlines and need to coordinate schedules with others, are weak. This challenges Goldin's (2014) argument that occupations that require workers to face deadlines and arrange work around others' schedules also encourage workers to put in very long hours. The correlations between the different occupational demands are mostly weak, with a couple of the correlations being moderate (e.g., deadline pressure and expectation of

[9]In rounds 16 and 17, the NLSY97 included questions on whether respondents had much say about their schedules, whether they know about their schedules ahead of time, and the most and fewest hours they worked during the past month for their jobs of the longest duration. Because job changes between just two survey rounds tend to be relatively few, and because the NLSY97 only collected such information for a proportion of the jobs reported in those rounds, fitting fixed-effects models with these limited individual-level data could be problematic.

[10]Specifically, we found the level of occupational irregularity to be a significant predictor of respondents' reports of schedule unpredictability (i.e., lacking advance notice on the work schedule) and their inability to control work schedules. Likewise, occupational levels of task-structuring autonomy and required temporal coordination are positively and negatively associated with respondents' reported extent of schedule control, respectively. We also found the O*NET's measure of schedule irregularity corresponds to individuals' reports of a more volatile work schedule (i.e., a greater difference between the most and fewest working hours during the past month).

[11]The within-occupation variation could reflect that not all individuals in an occupation that on average expects long working hours are subjected to the same work-time norm. Even if this is the case, the average wages for occupations should still correspond to the occupation-average expectations about working hours, if such expectations matter. Besides, we find similar levels of variation in individuals' working hours within occupations with differing levels of overwork prevalence, suggesting that differences in personal circumstances, which exist for workers of every occupation, are likely to account for a sizable part of the variation.

overwork). This pattern indicates that the temporal demands are not uniformly distributed across occupations; rather, they reflect distinctive aspects of working conditions.

The statistical models also control for many individual and job traits that may affect wages. Because we use fixed-effects models to account for individual attributes that do not change over time, all the controls are time varying. To begin, we introduce a series of indicators of human capital, including education, school enrollment status, work experience, job tenure, and the number of major employment breaks. Education is measured as the highest level of educational attainment (less than high school, high school, some college, or college and more) at the interview time. We use a binary variable to further indicate whether respondents were in school at the time of observation. Work experience is measured by the number of years when respondents had a job since age 14. We also include a dummy variable for a small number of observations in which work experience is missing (5.8%). Tenure at the job under examination is measured in years. Because an earlier exploratory analysis showed that the relationship between current job tenure and pay is curvilinear—that is, spending too many years on the same job can curb wage increases—we also include job tenure squared in the models. We include the number of major employment breaks experienced to account for any human capital depreciation following labor market exits. Following prior research, we define such breaks as jobless periods that last six weeks or longer since one's first stable job (Budig and England 2001; Yu and Kuo 2017).

Next, we introduce variables for respondents' relationship status (married, cohabiting, unpartnered, or unknown) and number of children, as these factors are potentially relevant to wages (Budig and England 2001; Killewald 2013). Because firm characteristics tend to be related to wages, we further control for firm size (fewer than 30 employees, 30–299 employees, and 300 or more employees) and whether the firm has multiple locations. In addition, we include a variable indicating whether respondents' jobs were unionized. A small proportion of the person-year observations—approximately 5%—have no valid values for firm size, firm with multiple locations, or union status. To maximize our sample size, we include dummy variables for those missing values for all these variables.[12] Moreover, as wages are generally sensitive to geographical location, we control for whether respondents lived in urban areas and for their regions using the census categorization (Northeast, Midwest, South, and West).[13] Finally, because individuals' wages are often dependent on their occupations' overall skill levels, we also include a measure of the educational level of the incumbents of the occupation.[14] We specifically use the occupational education measure proposed by Hauser and Warren (1997) and updated by Frederick (2010) in the analysis.[15]

[12]In an additional analysis, we found the results to be virtually unchanged if we eliminated the small percentage of observations with missing values or used multiple imputation methods to fill in the values (Allison 2002). We also used multiple imputation methods to fill in the values for those missing other information (i.e., relationship status, work experience), and the result remained similar. We therefore opted for a simpler way of handling missing values, similar to previous studies (Killewald and Gough 2013; Yu and Kuo 2017).

[13]The NLSY97 reports whether respondents lived in urban areas, based on the census definitions, at the time of the interview. If the information on urban residence is missing, we consider those residing in what the NLSY97 defines as metropolitan statistical areas as living in urban areas.

[14]We argue that occupational education is preferable over the index of occupational socioeconomic status for predicting wages because the latter is created with both the level of education and earnings of incumbents in the occupation, resulting in the problematic scenario in which one uses an earnings-based index to predict earnings.

[15]In an earlier analysis, we included the proportion of women in the occupation to account for the possibility that female-dominant occupations are devalued (Kilbourne et al. 1994). Because we did not find the main results to be different, and because

To provide more details on the sample and variables, we present descriptive statistics of respondents at their last interview in table A1.

Analytic Strategy

Similar to many previous studies of earnings (Kilbourne et al. 1994; Budig and England 2001; Killewald and Gough 2013; Yu and Kuo 2017), ours uses fixed-effects models to examine the associations between temporal work demands and wages. We estimate two-way fixed-effects models that can be expressed as follows:

$$\ln(\text{wage}_{it}) = \gamma_0 + \Sigma a_j X_{jit} + \Sigma \beta_k Y_{kit} + \text{year}_t + I_i + \varepsilon_{it},$$

where the outcome is the log hourly wage of person i ($i = 1, 2, 3, \ldots, n$) at time t ($t = 1, 2, 3, \ldots, l$); γ_0 is the intercept; X_{jit} is a vector of variables for time-related occupational demands; $\Sigma\alpha_j$ denotes the coefficients of j temporal demands; Y_{kit} represents a vector of other variables related to wages, including human capital indicators, relationship status, firm attributes, and geographic location, with $\Sigma\beta_k$ indicating their effects; year_t and I_i denote fixed effects for survey years and individuals in the data set, respectively; and ε_{it} is the error term. With the individual fixed effects, the models capture all time-invariant personal attributes, such as race, class background, general work ethics, and other personality traits, and ultimately rely on within-person variation for estimation. The inclusion of survey-round fixed effects further enables us to control for any unobserved conditions of the survey year that may shape earnings, such as economic recessions or monetary inflation.[16] Our use of fixed-effects models therefore helps reduce unobserved heterogeneity across individuals and survey years to a large extent.

To examine how returns to temporal work demands differ between broad occupational groups, we further introduce a dummy variable for professional and managerial occupations versus others (based on the Census 2002 classification) and interact this variable with the various temporal demands in additional models. Because factors such as marriage and parenthood often affect men's and women's wages differently (Budig and England 2001; Killewald 2013; Killewald and Gough 2013), we estimate all models separately by gender. Finally, because the NLSY97 oversampled certain minority groups, we apply the longitudinal sampling weights to all the fixed-effects models and estimate robust standard errors.

RESULTS

Returns to Occupational Work-Time Expectations versus Individuals' Working Hours

Table 4 presents a series of fixed-effects models investigating how people's actual working hours and the prevalence of overwork in their occupations are related to hourly wages. We first fit separate models with individuals' working hours or the expected work time in their

the occupation's gender composition can potentially be an outcome of its specific temporal demands (especially according to compensating differential theory), we decided not to include this control in the presented models.

[16]The inclusion of survey year fixed effects would also capture the effect of age change between two given survey times, making it unnecessary to include age in the models.

occupations. Models 1 and 5 show a curvilinear relationship between individuals' working hours and hourly pay, with the wage return peaking at 36 hours for men and 38 hours for women. These results indicate a lack of wage premiums for those working very long hours, after taking into account stable personal attributes that affect both work time and pay.[17] Nevertheless, the overwork prevalence of a person's occupation is positively associated with hourly pay, which is consistent with the argument of a wage premium for overwork (models 2 and 6). The patterns are unchanged, despite slight alterations in magnitude, when we include individuals' working hours and their occupations' overwork prevalence together (models 3 and 7). Taken together, the results demonstrate the need to distinguish individuals' working hours from the work-time norms to which they are subjected, since the pay premium is linked to the latter and not the former.

Interestingly, the premium for the occupational expectation of overwork is higher for men than women ($P < .05$), which is consistent with the expectation derived from the ideal worker norm model. The fact that the lower return remains after controlling for actual working hours suggests that women's lower compliance to their occupations' work-time norms cannot explain the gender difference. The return for each actual working hour is nevertheless higher for women than for men (as noted in model 7). This means that when shifting to an occupation with a higher demand for work time, women could receive an amount of pay premium equivalent to men's if they also raise their working hours considerably. For example, given the coefficients in models 3 and 7, when men and women move from an occupation at the 50th percentile for overwork prevalence to one at the 75th percentile, women need to add 6.2 hours per week as well in order to receive the same wage increase as men do. Adding this many hours, however, is far from typical, considering that the difference in actual working hours between men in occupations at the 50th and 75th percentile for overwork is only about an hour in our data. Women appear to need to "prove" their willingness to work long hours, much beyond the usual level (and beyond what men would do), to receive the amount of wage premium automatically given to men according to the occupation's time demand.

Because the benefit of putting in long hours may depend on the occupation's work-time norm, models 4 and 8 further test the interaction effects between individuals' working hours and their occupations' expectation of overwork. The interaction terms are significant in both models. To better illustrate these results, figure 1 presents the estimated log hourly pay by individuals' working hours and their occupation's expected level of overwork, with the individual fixed effects and other variable values set to be constant.[18] We show the occupational overwork level at the 25th, 50th, and 75th percentile (values 1.77, 2.02, and 2.32), respectively. Clearly, the higher the occupation's demand for overwork, the more hourly wages increase with individuals' working hours, at least up to the standard full-time

[17] In an exploratory analysis we followed Cha and Weeden (2014) to include just dummies for part-time work and overwork (≥50 weekly hours) in the models. The models showed that men and women working 50 or more hours per week receive lower hourly pay than when they work full time (35–49 hours), which is consistent with the finding of a curvilinear relationship between individuals' working hours and their hourly pay.

[18] We used the sample means for all other variables for the estimation. As for the individual fixed effects, because they are unobservable, we set them to be zero, making the predicted log hourly pay likely lower than the observed value for one with the assumed characteristics. So long as the individual fixed effects are constant across different scenarios, the discrepancies by gender, overwork level, and working hours would be the same regardless of the value chosen for the effects.

hours (36–40 hours per week). For men, working longer in occupations that do not expect overwork (i.e., at the 25th and 50th percentile) is actually associated with decreased or nearly constant hourly pay. As far as hourly returns are concerned, individual behavior of working excessive hours rarely pays off. Even in occupations at the 75th percentile of overwork level, both men and women would receive the highest hourly pay if they could manage to work just 36 and 38 hours per week, respectively. This finding, which can be explained by the fact that occupations expecting overwork tend to pay fixed salaries irrespective of working hours, suggests that compliance with occupations' expectation of overwork is not necessary for receiving high hourly pay.

Still, workers are likely to work beyond the optimal number of hours for wage returns when the normative pressure for overwork is strong in their occupations. Even if their actual work time is not optimal, people receive higher hourly wages in occupations demanding very long hours than in other occupations because the wage gap by the occupational overwork level is large. As the figure shows, men working 50 hours per week in occupations at the 75th percentile for overwork level would earn a higher hourly wage than they would working 40 hours in occupations at the 50th and 25th percentile for overwork prevalence. The elevated hourly rate, along with overall longer working hours, contributes to higher total earnings for occupations that demand more work time.

Linking Wages to Various Time-Related Occupational Demands

The second part of the analysis compares wage associations with various time-related occupational demands. Table 5 presents fixed-effects models of log hourly pay on multiple temporal working conditions. We present the models with and without individuals' working hours; the results indicate that accounting for individuals' work-time behavior hardly affects how the occupational demands are tied to hourly pay. For both men and women, the occupation's level of deadline pressure is positively associated with hourly wages, similar to the expectation for worker overwork. These positive associations are congruent with both the ideal and compensating differentials accounts. Not all time-related demands lead to wage premiums, however. Occupations' required level of temporal coordination is negatively associated with hourly wages, as is schedule irregularity for women. Occupations that allow workers more freedom to structure their own work pay more, which means that there is a wage penalty for the demand to give up autonomy during work hours. The existence of wage penalties in these cases is consistent with the labor market segmentation account, which expects occupations with more temporal disamenities to pay less. Thus, even though all the temporal demands examined require workers to make sacrifices in their work and personal life, and even though occupations may simultaneously require individuals to satisfy several temporal demands, only meeting certain demands is financially rewarding.

To investigate how the wage penalties and premiums for time-related occupational demands differ between men and women, we compare the coefficients in model 2 with those in model 5 and indicate the statistical significance between the models in the rightmost column in table 5. Whereas the wage premium for the occupational level of overwork continues to be greater for men, the premium associated with the demand for meeting frequent deadlines is greater for women. These gender differences suggest that the ideal worker model better

explains the wage premium attached to the occupational demand for overwork, as men, the presumed ideal workers, benefit more from being in time-demanding occupations.[19] Conversely, the association between deadline pressure and pay more closely follows the logic of compensating differentials, which expects women to be penalized more for avoiding pressure from frequent deadlines.

The wage penalty associated with occupations' temporal coordination demand is greater for women than for men. That is to say, women in occupations requiring much temporal coordination receive even lower wages than men do, perhaps reflecting their holding lower-paying jobs within such occupations. This gender difference is congruent with the labor market segmentation account, which expects not only temporal disamenities to be associated with low wages but also workers less favored by employers, such as women, to be sorted to especially disadvantaged positions.

There is no gender difference in the extent to which work-structuring autonomy is associated with wages. Thus, women and men experience similar wage penalties when they work in occupations that allow limited freedom to structure their workday. Unlike other temporal demands, schedule irregularity is associated with men's and women's wages in opposite ways. As models 2 and 5 in table 5 show, being in occupations with greater schedule irregularity enhances men's hourly pay, whereas it decreases women's.

Because scheduling requirements often vary by industry, we test additional models—in models 3 and 6—with 18 industry dummies (based on the broad categories in the Census 2002 codes).[20] Adding industry weakens the coefficients for some occupation-level temporal demands, which could be partially explained by the fact that many occupations' temporal demands overlap with the scheduling needs of the industry they tend to be in. For most occupational demands, the general patterns remain. The exceptions are schedule irregularity for both gender groups and work-structuring autonomy for women, for which the coefficients become nonsignificant. Our separate analysis indicates that the gender difference regarding schedule irregularity can be entirely attributed to women's greater concentration in occupations often found in the retail trade (e.g., grocery stores) and the leisure and hospitality (e.g., hotels and restaurants) industries and men's greater concentration in occupations likely present in the construction industry. All these industries require workers to accommodate relatively irregular schedules. The construction industry, however, tends to compensate the inconvenience caused by irregular schedules, whereas the retail and hospitality industries treat schedule irregularity as an inherent trait to low-wage jobs. Because all three industries have moderate profit margins, we speculate that their different treatments with schedule irregularity reflect how the gender composition of the industry, rather than profitability, shapes the logic of its remuneration system: compensation for schedule irregularity is deemed necessary when it is imposed predominantly on men but not women.[21]

[19]Although it is also possible that women benefit less from being in occupations that demand high levels of overwork because they tend to concentrate in workplaces that allow workers in such occupations to put in fewer hours, the fact that our findings are net of individuals' actual working hours suggests that the women's lower willingness to overwork does not explain their lower pay premiums.

[20]The full models with coefficients for industry dummies are presented in table S1 in the online supplement.

Our additional analysis indicates that the disappearance of wage premium for work-structuring autonomy among women primarily has to do with the addition of the food and entertainment industry in the model. The occupations that women concentrate in in this industry, such as waitresses, are often autonomy deprived and low paying. As the indicator of the food and entertainment industry ultimately captures the relationship between autonomy and pay for these occupations, the coefficient for occupation-level autonomy becomes nonsignificant in model 6.

Because the industries that are responsible for the changes in the coefficients for time-related demands tend to contain a few populous occupations that are nearly unique to the industry (e.g., wait staff for the food and entertainment industry, pavement workers for the construction industry), the changes with the addition of industry mostly have to do with the industry dummies capturing the temporal demands of those occupations. In this sense, controlling for industry only reduces the ability for our measures of time-related demands to fully capture the occupation's working conditions. Given this, and given the fact that controlling for industry does not alter the wage return patterns for most working conditions, we opt not to include industry dummies in the models presented below.

Heterogeneity by Broad Occupational Group

The final part of our analysis investigates whether the wage associations with time-related occupational demands differ by professional status. Table 6 presents key results from fixed-effects models of log hourly wages for men and women (see table S2 in the online supplement for a full table, in which we include multiple models with differing complexity). The interaction terms for men are mostly nonsignificant, with the interaction between managerial-professional occupations and deadline pressure being an exception. Conversely, all the interactions between time-related working conditions and professional-managerial status are statistically significant for women, indicating considerable differences in how temporal demands are associated with wages between professional and nonprofessional women. We further illustrate the results from table 6 in figures 2–6, in which we use coefficients from the models to predict log hourly earnings for men and women by professional status and the level of each time-related demand, holding other variables at the sample means.

Figure 2 shows that a rise in the occupational expectation of overwork is associated with higher hourly pay for men of all occupations and women in nonprofessional occupations. The pattern for managerial and professional women, however, is different—there is no wage premium for the demand for overwork within this group. Because the model takes into account women's actual working hours, this lack of wage premium cannot be attributed to women managers and professionals' low likelihood to comply with the work-time norms in their occupations. Besides, our data show that managerial and professional women's working hours are more likely to rise with increases in the prevalence of overwork in

[21]We conducted a further analysis to examine whether the pay premium for schedule irregularity for men is explained by the construction industry's greater potential hazards. We found schedule irregularly continued to be associated with pay in opposite ways for men and women even if we take into account occupational exposure to hazards, suggesting this exposure also cannot account for the gendered pattern.

their occupations than nonprofessional women's, indicating the former's greater level of compliance to their occupations' work-time norms. Yet it is nonprofessional women, not managerial and professional women, who are paid according to their occupation's norm about overwork. Rather than an issue of compliance, the finding for women managers and professionals seems to reflect their difficulty in being recognized and remunerated as ideal workers even as the time demand for them increases. Paradoxically, it might be because nonprofessional women do not expect to work extended hours that any additional demand for their time must be financially compensated.

Figure 3 demonstrates how hourly wages for men and women change with alterations in their occupations' levels of deadline pressure. Among men, a rise in deadline pressure is associated with a greater increase in hourly wages for nonprofessionals than managers or professionals. The pattern for women is similar, although the difference by broad occupational group is less noticeable. Overall, the wage associations with the occupational demand for meeting frequent deadlines are consistent with the logic of compensating differentials; because managers and professionals are already assumed to need to deal with time pressure and are paid overall higher wages for it, the compensation for additional deadline pressure is slightly greater for nonprofessional workers, who generally anticipate limited time pressure.

The patterns in figures 4 and 6 for women are very similar. Both the demands for temporal coordination and schedule irregularity are negatively associated with wages for nonprofessional women, while they hardly affect hourly pay among professional and managerial women. Although the need for temporal coordination is also linked to lower pay for men, the amount of penalty is much greater for women in nonprofessional occupations. Having more irregular schedules is positively associated with hourly wages for men in all occupations, which, as discussed earlier, can be explained by the construction industry's tendency to compensate schedule irregularity with higher pay. Meanwhile, the finding that earnings increase with the level of autonomy allowed in individuals' occupations applies to all men and professional-managerial women but not nonprofessional women (fig. 5). Taken together, results in these figures indicate unique disadvantages for non-professional women. They are the main group experiencing wage penalties for working in occupations requiring temporal coordination and irregular schedules, and they do not earn more like others when their occupations enable them greater autonomy to structure their workday. These results support the labor market segmentation account because nonprofessional women are the most likely to be in the secondary sector where temporal inflexibility, schedule irregularity, and low wages all cluster together.

CONCLUSION

Despite growing attention to how temporal work demands shape earnings inequality, prior research has not comprehensively examined how differing time-related working conditions are associated with pay. Using longitudinal data that can effectively address unobserved heterogeneity, we have demonstrated that beyond long working hours, the occupational requirements of meeting frequent deadlines, coordinating with others' schedules, sacrificing work-structuring autonomy, and facing schedule irregularity are all linked to wage gains or

losses. Earlier in this article we discussed three theoretical frameworks that explain either pay premiums or penalties for time-related working conditions. We did not find that wages universally increased or decreased with time constraints imposed by occupations, suggesting different remuneration logics apply to different occupational demands. Specifically, the ideal worker account, which expects workers', especially men's, temporal sacrifices to be equated to commitment, appears to explain our results about men's and women's wage premiums in occupations with strong overwork norms. At the same time, our findings of positive returns for those in occupations with substantial deadline pressure, with the penalty of avoiding this pressure greater for women, are congruent with compensating differential theory. As for the demands for temporal coordination, limited discretion to structure work, and schedule irregularity, we find little evidence that they are treated as signals of commitment or as undesirable job traits that must be compensated, even though they do reduce workers' temporal control and flexibility. Consistent with the labor market segmentation model, pay penalties are associated with these three demands, with nonprofessional women especially likely facing reduced pay with increases in schedule irregularity and temporal coordination.

Our finding that not all time-related sacrifices made by workers are equal in shaping wages has important implications for the understanding of the gender pay gap. As we have shown in this study, although women, on average, are under lower pressure for putting in long hours, meeting deadlines, giving up work-structuring discretion, and dealing with schedule irregularity in their occupations, they are more likely than men to need to arrange work around others' time. The gender pay gap therefore is not just a result of women' tendency to be in occupations less demanding in temporal conditions. Rather, the gap is attributable to both women's lower likelihood to face temporal constraints that are rewarding and their higher likelihood to be subjected to demands that generate wage penalties. Interestingly, the requirement that is more often imposed on women and is not rewarding—the need for temporal coordination—also seems to be related to feminine traits more, as women are believed to be good at interpersonal interactions and coordination.[22] The fact that schedule irregularity is compensated in the construction industry, which contains predominantly men, but penalized in the retail and hospitality industries, where many women work, further suggests that the rationale behind which temporal work demands are tied to rewards and which are not is gendered.

Even for the occupational demands that offer pay premiums, we have shown differences in returns between men and women, which also contribute to the gender pay gap. The occupational expectation of overwork, in particular, is associated with a larger wage gain for men than women. Although Goldin (2014) claims that this gender difference has to do with women's lower ability to work extended hours in occupations with a strong overwork norm, our results paint a more complex picture. We demonstrated that the differential returns to the occupational norm of overwork remain after controlling for individuals' actual working hours. Even if we take into account that women gain more with increases in actual working hours than men do, women still need to add many more hours than men would to receive

[22]Occupations requiring higher levels of temporal coordination, however, do not necessarily have higher proportions of women. In an additional analysis, we found that the occupation's female representation level did not explain the wage penalty for the requirement of temporal coordination.

the same amount of wage increase as men's when both groups switch to an occupation with a higher demand for work time. The fact that women must work longer to receive equivalent gains suggests that beyond women's actual compliance to the occupation's overwork expectation, the suspicion of their insufficient compliance also contributes to the gendered return to this expectation.

This study also enhances our understanding of how wage-setting practices differ between professional-managerial occupations and others, especially for women. We have shown that managerial and professional women's earnings do not reflect rises in their occupations' work-time expectation as do other women's or their male counterparts'. At the same time, women managers and professionals differ from nonprofessional women in that they are not penalized when their occupations feature higher levels of temporal coordination need and schedule irregularity. We speculate that the professional-managerial culture that equates workers' time-related sacrifices to commitment and productivity makes employers less likely to tie any temporal demand to lower wages for professional and managerial women. The same culture, however, might also place these women under constant scrutiny and suspicion regarding their devotion, as suggested by ethnographic research (Blair-Loy 2003; Williams et al. 2013). Consequently, women managers and professionals are not automatically rewarded as their occupations' work-time demand increases.

In addition to elucidating the links between various temporal demands and earnings inequality, we have demonstrated the need to empirically distinguish individuals' working hours from their occupations' work-time expectations. As discussed earlier, this distinction enables us to tell how much women's compliance with their occupations' overwork norms accounts for the gendered returns for this norm. We were also able to demonstrate that individuals' hourly wages increase more with their working hours when their occupations expect more work time. At the same time, we have shown differences in the returns for individuals' and their occupations' working hours: while the marginal return to the latter is always positive, the marginal return to the former is not, even in occupations that normalize overwork. With all these findings, our study provides a more comprehensive picture than previous ones about the relationship between individuals' and their occupations' working hours, as well as how the discrepancies (or consistency) between the two shape workers' wages.

Although this study provides important evidence on wage premiums and penalties for time-related work demands, we must acknowledge that our reliance on data from a specific NLSY cohort restricts our ability to generalize the patterns for other cohorts. The study also faces a limitation due to our use of O*NET occupation-level measures, which cannot capture within-occupation variations in temporal demands. Although lacking job-level information does not prevent us from estimating how occupational wages reflect the average demands from jobs within the occupations, it could be an issue for the comparisons of wage returns between men and women if the two are in workplaces of differing demand levels within each occupation. We nevertheless argue that our inclusion of individuals' working hours largely addresses the variation in job-specific work-time norms, given the evidence that those under greater overwork pressure do put in longer hours. As for the conditions related to deadlines, coordination with others, the discretion to structure work, and schedule irregularity, we

suspect their variations are small within occupations because these conditions are mostly tied to occupational tasks and activities. News reporters, for instance, have to deal with broadcasting deadlines regardless of where they work.

Another limitation is that the available indicators in the O*NET reflect only some temporal constraints faced by workers. We do not have a measure for how often an occupation requires constant physical presence, as opposed to permitting remote work, nor can we measure how often the work schedule encompasses nights or weekends. These other demands may very well be relevant to earnings inequality. To further our knowledge about temporal work conditions and pay, future researchers must endeavor to collect more comprehensive information on time-related constraints at both job and occupational levels.

On a more general note, this research calls attention to temporal constraints that are inherent to occupational activities. Much research on time-related work conditions focuses on workplace policies that promote or diminish temporal flexibility (Blair-Loy and Wharton 2002; Weeden 2005; Heywood et al. 2007; Wharton et al. 2008; Kelly et al. 2014). While such policies are important, there are also temporal restrictions resulting from specific occupational requirements and activities (e.g., weather-related schedule irregularity for roofers). Such restrictions, while equally likely to add to workers' work-family conflict and psychological distress, cannot be altered in ways workplace policies can. For this reason, it is especially important for future research to investigate how time-related occupational demands shape workers' well-being and study ways to lessen such demands' contributions to earnings inequality.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

APPENDIX

TABLE A1

Weighted Descriptive Statistics of Respondents at Their Last Survey Round

	Men		Women	
Log hourly pay (in cents)	7.40	(.66)	7.27	(.66)
Occupational demands:				
Overwork expectation	2.25	(.36)	2.09	(.41)
Deadline pressure	3.87	(.47)	3.69	(.56)
Temporal coordination	.09	(.88)	.24	(.83)
Work-structuring autonomy	3.93	(.40)		
Schedule irregularity	1.33	(.21)	1.21	(.17)
Hours worked per week	39.92	(12.10)	35.58	(12.37)
Managers/professionals (%)	27.60		38.87	
Education (%):				
Less than high school	9.67		7.89	
High school	29.64		19.36	

	Men		Women	
Some college	36.35		37.73	
College and above	24.34		35.01	
Enrolled in school (%)	9.89		13.30	
Relationship status (%):				
Married	37.33		44.03	
Cohabiting	18.24		18.17	
Unpartnered	43.82		37.06	
Unknown	.61		.74	
Number of children	.98	(1.26)	1.26	(1.32)
Work experience since age 14	10.78	(5.00)	10.71	(4.81)
Job tenure	3.59	(3.77)	3.41	(3.56)
Number of employment breaks	2.55	(2.32)	2.61	(2.30)
Occupational education	49.72	(24.63)	59.76	(22.65)
Firm size (%):				
Small (<30 employees)	53.56		50.52	
Medium (30–299 employees)	28.70		27.50	
Large (≥300 employees)	14.10		14.80	
Unknown	3.63		7.18	
Firm with multiple locations (%):				
Yes	49.23		51.64	
No	49.92		47.37	
Unknown	.85		1.00	
Unionized job (%):				
Yes	11.87		10.00	
No	86.90		88.64	
Unknown	1.23		1.36	
Region (%):				
Northeast	17.74		16.27	
Midwest	24.58		23.68	
South	35.28		38.09	
West	22.41		21.96	
Urban areas (%)	80.58		80.12	
N (individuals)	4,347		4,197	

NOTE.—Longitudinal sampling weights of the NLSY97 are applied to calculate the statistics. All the numbers followed by parentheses are means, with their respective SD presented in the parentheses.

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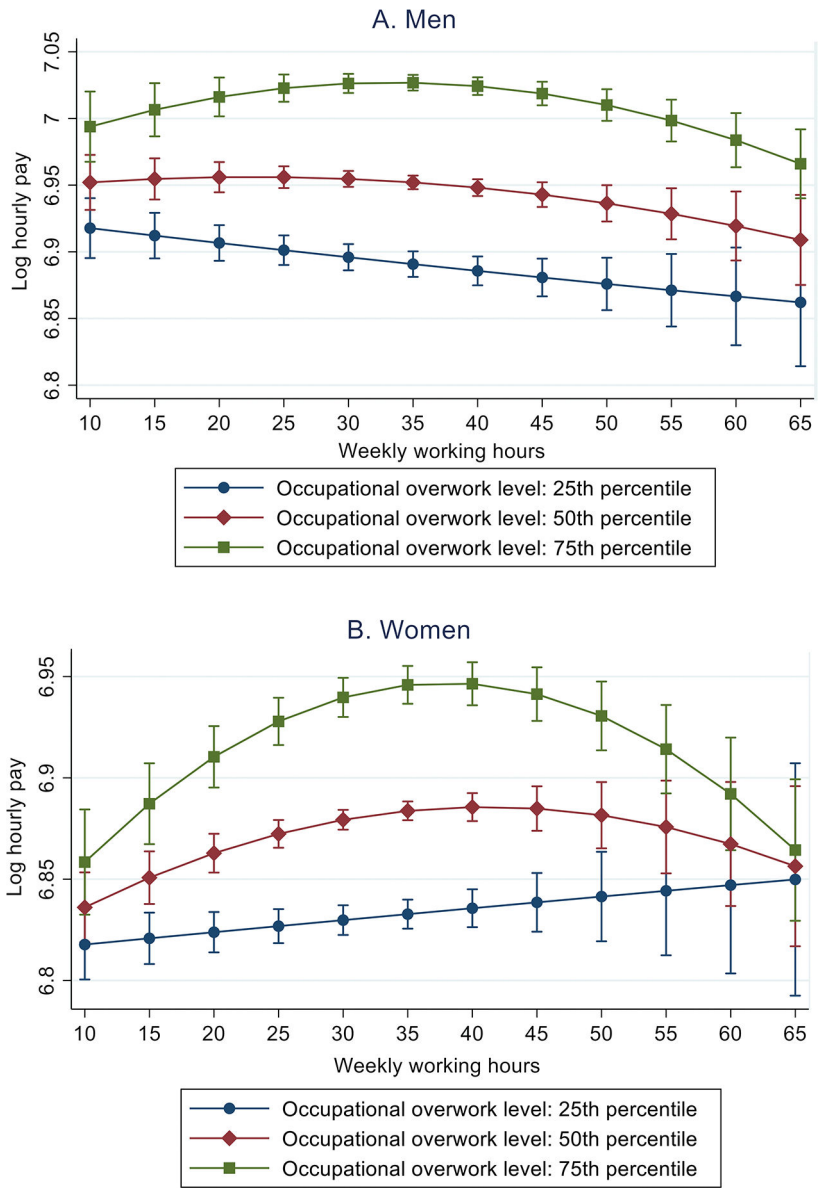

Fig. 1.—.

Predicted log hourly pay by individual working hours and occupational overwork level. Estimated values are based on fixed-effects results from models 4 (*A*) and 8(*B*) in table 4, with the person fixed effects set to zero and all other variables at the sample means. Horizontal bars indicate 95% confidence intervals.

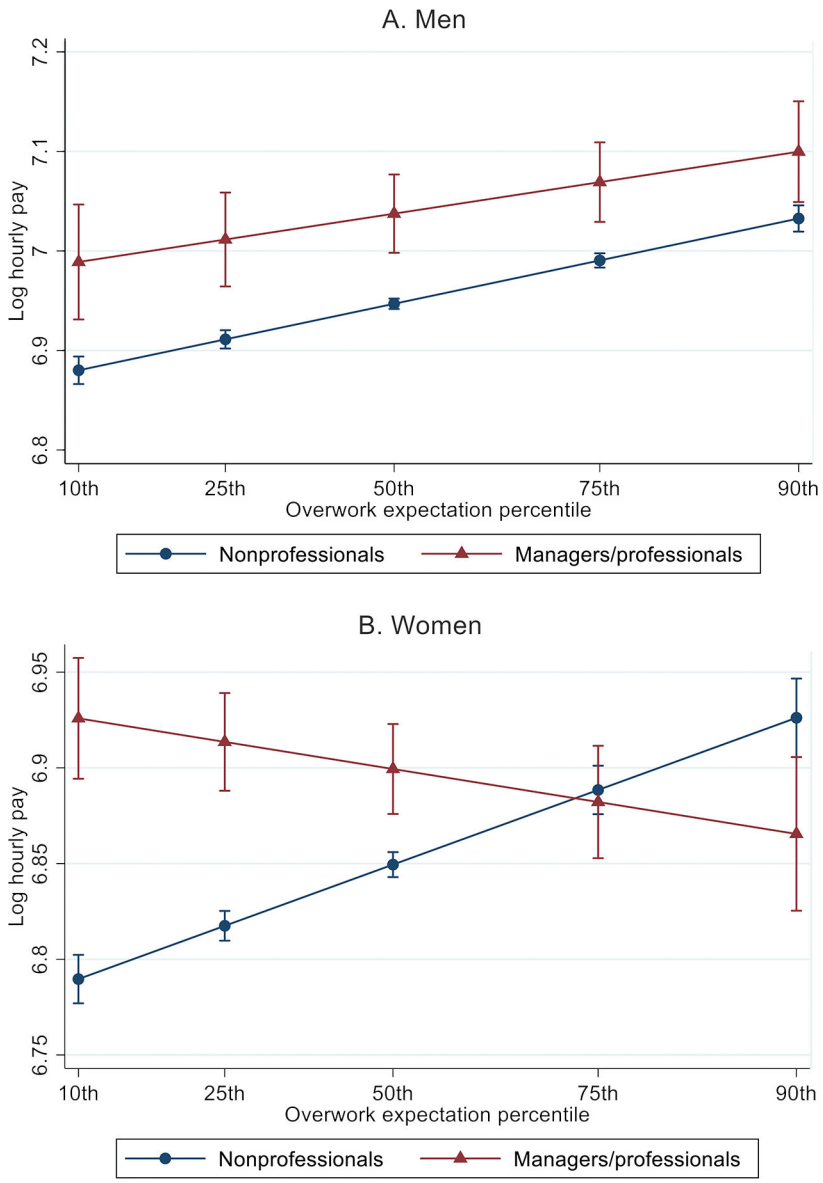

Fig. 2.—.

Predicted log hourly pay by overwork expectation level for managers/professionals and other workers. Predicted values of hourly pay are calculated using coefficients from the models in table 6, with the person fixed effects set to zero and all other variables equal to the sample means. Horizontal bars indicate 95% confidence intervals.

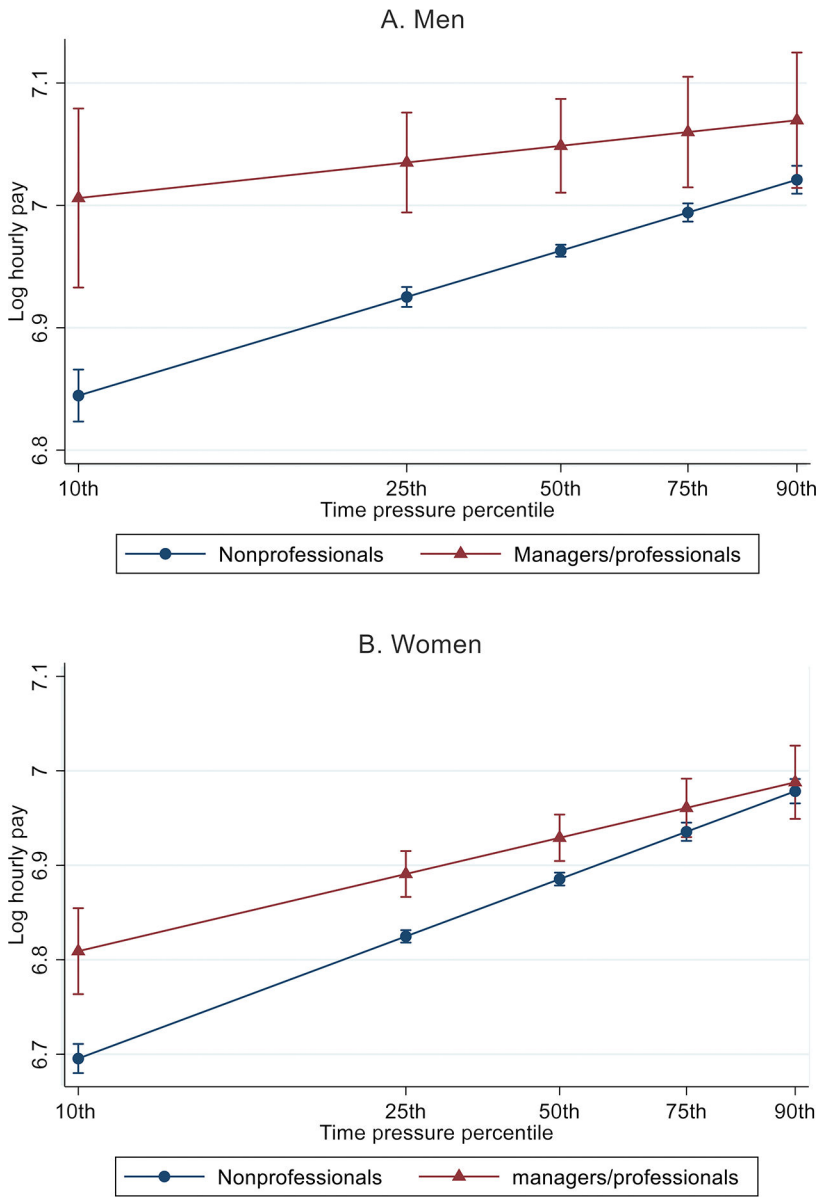

Fig. 3.—.

Predicted log hourly pay by deadline pressure level for managers/professionals and other workers. Predicted values of hourly pay are calculated using coefficients from the models in table 6, with the person fixed effects set to zero and all other variables equal to the sample means. Horizontal bars indicate 95% confidence intervals.

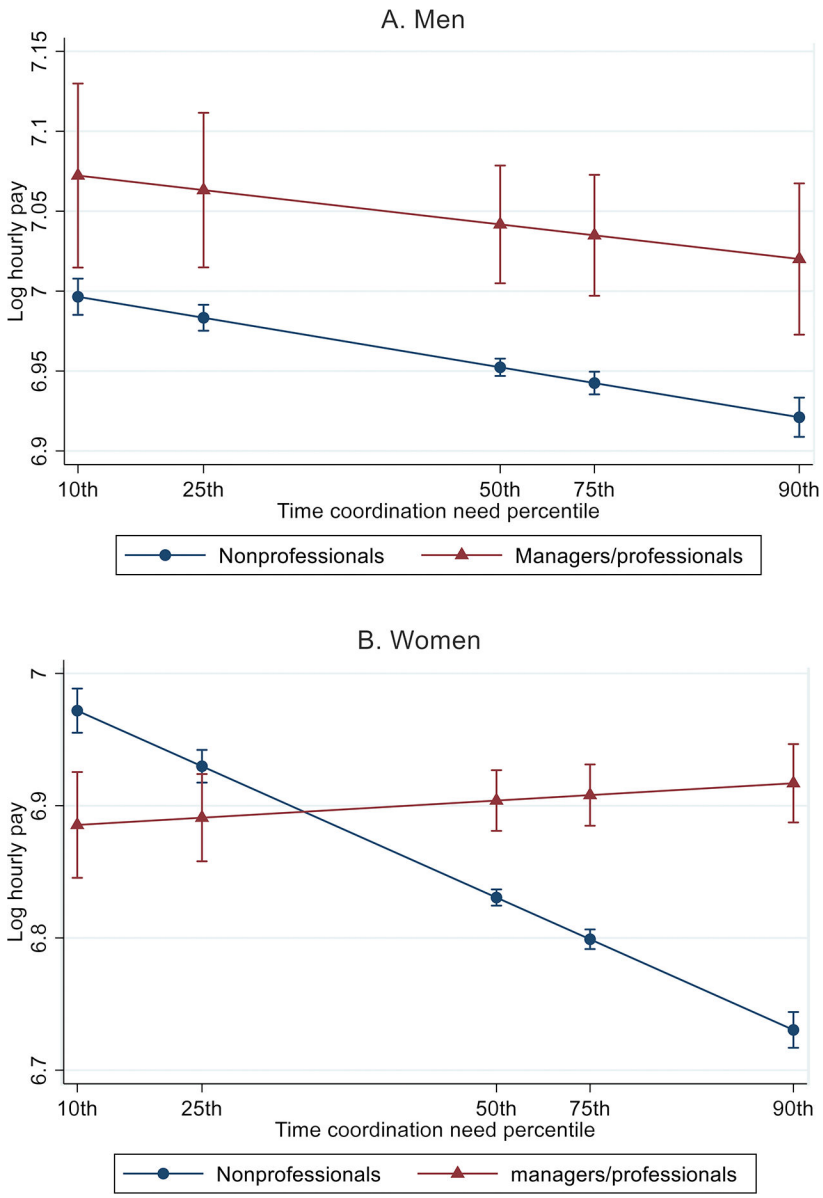

Fig. 4.—.

Predicted log hourly pay by required temporal coordination level for managers/professionals and other workers. Predicted values of hourly pay are calculated using coefficients from the models in table 6, with the person fixed effects set to zero and all other variables equal to the sample means. Horizontal bars indicate 95% confidence intervals.

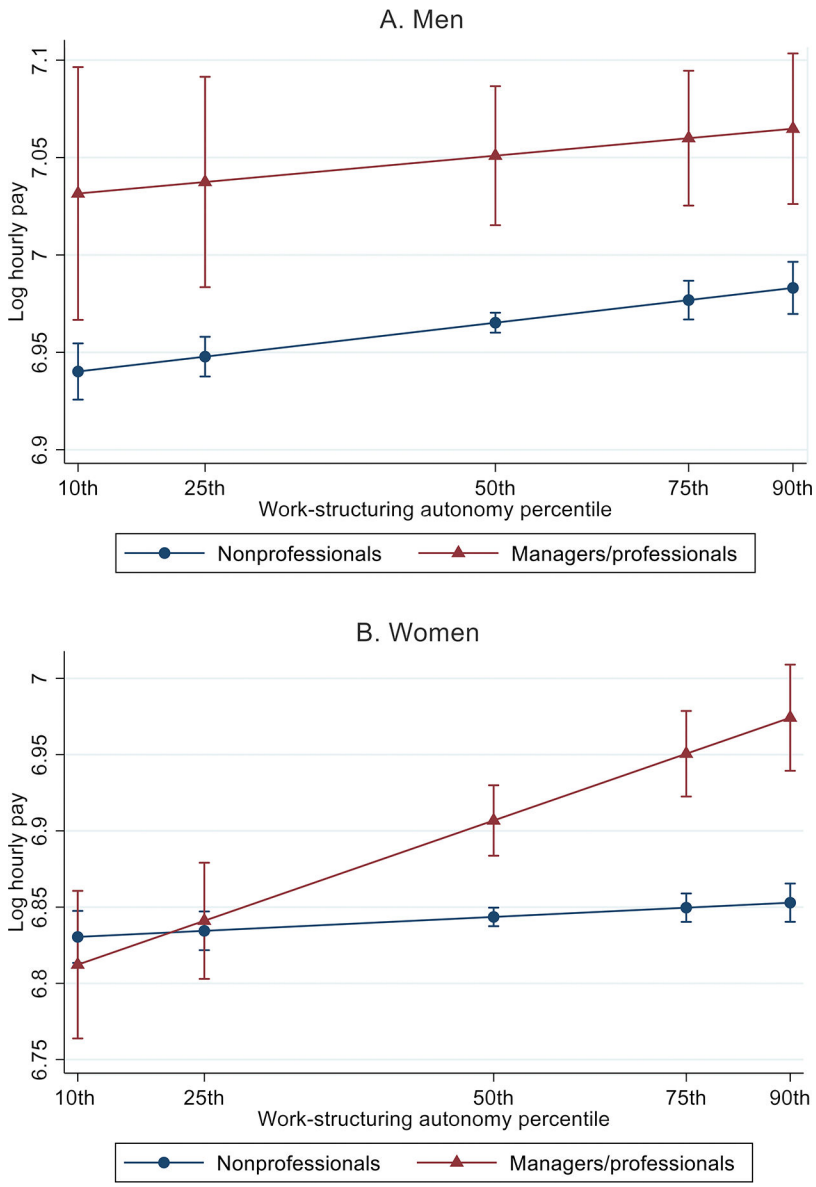

Fig. 5.—.

Predicted log hourly pay by work-structuring autonomy level for managers/professionals and other workers. Predicted values of hourly pay are calculated using coefficients from the models in table 6, with the person fixed effects set to zero and all other variables equal to the sample means. Horizontal bars indicate 95% confidence intervals.

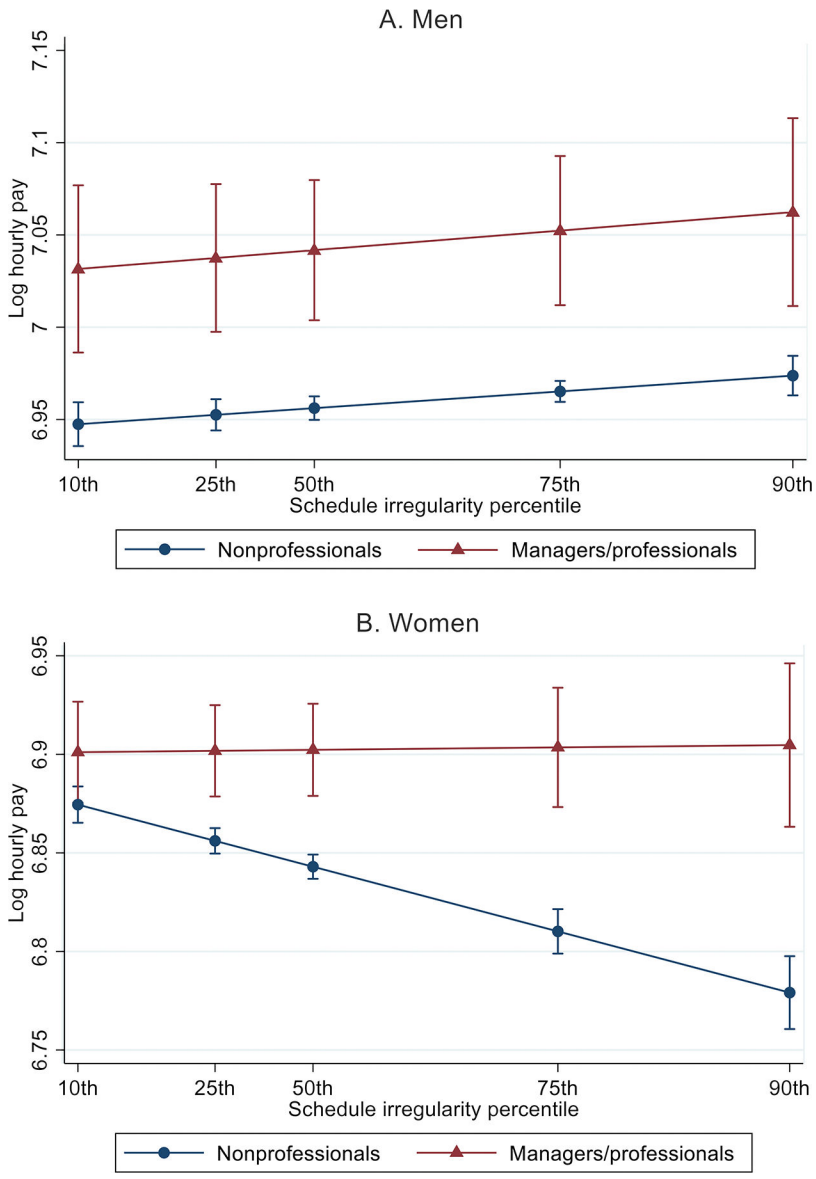

Fig. 6.—.

Predicted log hourly pay by schedule irregularity level for managers/professionals and other workers. Predicted values of hourly pay are calculated using coefficients from the models in table 6, with the person fixed effects set to zero and all other variables equal to the sample means. Horizontal bars indicate 95% confidence intervals.

TABLE 1

Summary of Relevant Theories and Hypotheses

	Ideal Worker Norms	Compensation Differentials	Labor Market Segmentation
Returns to time-related occupational demands	Wage premiums	Wage premiums	Wage penalties
Gender disparities	Greater premiums among men	Greater premiums among women	Greater penalties among women
Managers/professionals vs. others (nonprofessionals)	Greater premiums for managers/professionals than nonprofessionals	Greater premiums for nonprofessionals than managers/professionals	More/only penalties for nonprofessional workers

TABLE 2

Descriptive Statistics and Examples of Time-Related Occupational Demands

			MEAN				EXAMPLE	
	MIN	MAX	Managers/ professionals	Nonprofessionals	Men	Women	High Level	Low Level
Expectation of overwork	1.05	2.97	2.35	1.96	2.12	1.87	Anesthesiologists	Dental hygienists
			(.37)	(.37)	(.39)	(.40)	Chefs and head cooks	Cashiers
Deadline pressure	1.91	4.94	3.82	3.61	3.78	3.53	Broadcasting news analysts	Historians
			(.37)	(.64)	(.54)	(.64)	Customer service representatives	Childcare workers
Temporal coordination need	−4.51	1.92	.58	−.12	−.05	.11	Registered nurses	Insurance underwriters
			(.64)	(.79)	(.84)	(.78)	Freight and material movers	Truck drivers
Work-structuring autonomy	2.07	5.00	4.19	3.76	3.83	3.88	Social workers	Actors
			(.26)	(.39)	(.39)	(.42)	Insurance claim processing clerks	Cutting workers
Schedule irregularity	1.00	2.40	1.21	1.30	1.34	1.23	Tax preparers	Optometrists
			(.20)	(.20)	(.21)	(.18)	Fence erectors	Bakers
N (person-years)	90,037	90,037	17,921	72,116	45,063	44,974		

NOTE.—Values of occupational demands were derived from the O*NET database, with a higher value representing a higher level of the given working condition (e.g., stronger expectation of overwork, greater deadline pressure, higher work-structuring autonomy). The NLSY97 longitudinal sampling weights are used to calculate the descriptive statistics. All mean values are significantly different ($P < .05$) between managers/professionals and nonprofessionals, as well as between men and women. Numbers in parentheses are SDs.

TABLE 3

Correlations among Time-Related Indicators

	Overwork Expectation	Deadline Pressure	Temporal Coordination Need	Freedom to Structure Work	Schedule Irregularity	Actual Working Hours
Men:						
Expectation of overwork	1.00					
Deadline pressure	.51	1.00				
Temporal coordination need	.36	.12	1.00			
Work-structuring autonomy	.43	.25	.38	1.00		
Schedule irregularity . . .	.07	.09	−.01	−.19	1.00	
Actual working hours	.36	.21	.15	.17	−.01	1.00
Women:						
Expectation of overwork	1.00					
Deadline pressure	.58	1.00				
Temporal coordination need . . .	.45	.21	1.00			
Work-structuring autonomy	.63	.57	.43	1.00		
Schedule irregularity . . .	−.07	−.14	−.24	−.23	1.00	
Actual working hours	.34	.28	.20	.24	−.13	1.00

NOTE.—The correlations are calculated using the analytic sample, which includes 90,037 person-year observations. The NLSY97 longitudinal sampling weights are used to calculate the correlations.

TABLE 4

Results from Fixed-Effects Models Predicting Log Hourly Wages by Gender

	MEN				WOMEN			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
Occupation's expectation of overwork		.218**	.222**	.055**		.166**,a	.167**,a	−.051b
		(.011)	(.011)	(.040)		(.012)	(.012)	(.044)
Hours worked per week	.003**		.002+	−.018**	.005**		.004**,a	−.025**
	(.001)		(.001)	(.005)	(.001)		(.001)	(.006)
Hours worked^2	−.00004**		−.00004**	.0002**	−.0001**		−.0001**,b	.0004**
	(.000)		(.000)	(.000)	(.000)		(.000)	(.000)
Occupation's overwork expectation × hours worked				.010**				.015**
				(.002)				(.003)
Occupation's overwork expectation × hours worked^2				−.0001**				−.0002**,b
				(.000)				(.000)
Education (ref. less than high school):								
High school	.006	.000	.000	.002**	−.042**,a	−.041**,a	−.044**,a	−.042**,a
	(.012)	(.012)	(.012)	(.012)	(.012)	(.012)	(.012)	(.012)
Some college	.016	.012	.014	.017**	−.021+,a	−.016a	−.021+,a	−.018a
	(.012)	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)
College and above	.208**	.196**	.200**	.203**	.204**	.197**	.189**	.190**
	(.021)	(.021)	(.021)	(.021)	(.020)	(.019)	(.020)	(.019)
Enrolled in school	−.123**	−.111**	−.116**	−.114**	−.078**,a	−.082**,a	−.078**,a	−.075**,a
	(.009)	(.008)	(.009)	(.009)	(.008)	(.008)	(.008)	(.008)
Relationship status (ref. married):								
Cohabiting	−.069**	−.067**	−.068**	−.066**	−.053**	−.052**	−.053**	−.053**
	(.011)	(.010)	(.010)	(.010)	(.010)	(.010)	(.010)	(.010)
Unpartnered	−.118**	−.113**	−.114**	−.112**	−.071**,a	−.071**,a	−.071**,a	−.071**,a
	(.010)	(.010)	(.010)	(.010)	(.010)	(.010)	(.010)	(.010)
Unknown	−.118**	−.117**	−.116**	−.118**	−.034*,a	−.043**,a	−.038**,a	−.042**,a
	(.017)	(.017)	(.017)	(.016)	(.015)	(.015)	(.015)	(.015)
Number of children	.008	.007	.007	.006**	−.029**,a	−.029**,a	−.029**,a	−.029**,a
	(.005)	(.005)	(.005)	(.005)	(.006)	(.006)	(.006)	(.006)
Work experience since age 14	.016**	.016**	.016**	.015**	.017**	.017**	.017**	.016**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Work experience unknown	.002	.007	.009	.009**	.046	.047	.046	.043
	(.023)	(.023)	(.023)	(.022)	(.032)	(.031)	(.031)	(.031)
Job tenure	.037**	.035**	.035**	.035**	.026**,a	.024**,a	.025**,a	.024**,a

	MEN				WOMEN			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**	**Model 8**
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)
Job tenure^2	−.002**	−.002**	−.002**	−.002**	−.002**	−.002**	−.002**	−.002**
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Number of employment breaks	−.022**	−.021**	−.022**	−.022**	−.013**	−.014**	−.014**	−.014**
	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)	(.004)
Occupational education	.003**	.002**	.002**	.002**	.005**	.004**	.004**	.004**
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Firm size (ref. small):								
Medium	−.001	.003	.003	.002**	−.035^{**,a}	−.031^{**,a}	−.031^{**,a}	−.031^{**,a}
	(.009)	(.009)	(.009)	(.009)	(.008)	(.008)	(.008)	(.008)
Large	.102**	.098**	.098**	.097**	.119**	.116**	.117**	.115**
	(.011)	(.010)	(.010)	(.010)	(.010)	(.010)	(.010)	(.010)
Unknown	−.101**	−.092**	−.091**	−.090**	−.074**	−.070**	−.068**	−.064**
	(.013)	(.012)	(.012)	(.012)	(.011)	(.011)	(.011)	(.011)
Firm with multiple locations (ref. no):								
Yes	.000	.006	.005	.006**	.030^{**,a}	.032^{**,a}	.030^{**,a}	.030^{**,a}
	(.007)	(.007)	(.007)	(.007)	(.006)	(.006)	(.006)	(.006)
Unknown	−.024	−.018	−.020	−.022**	.008	.003	.004	.002
	(.020)	(.020)	(.020)	(.020)	(.018)	(.018)	(.018)	(.018)
Unionized job (ref. no):								
Yes	.110**	.106**	.105**	.106**	.094**	.095**	.093**	.093**
	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)
Unknown	.050**	.044*	.045*	.046**	.006^{b}	.009^{b}	.006^{b}	.006^{b}
	(.018)	(.018)	(.018)	(.017)	(.013)	(.013)	(.013)	(.013)
Region (ref. Northeast):								
Midwest	−.060	−.062	−.060	−.059**	−.077*	−.081*	−.075*	−.072*
	(.041)	(.041)	(.040)	(.040)	(.035)	(.036)	(.035)	(.035)
South	−.061^{+}	−.063*	−.061*	−.060**	−.059^{+}	−.061^{+}	−.057^{+}	−.056^{+}
	(.031)	(.031)	(.031)	(.031)	(.031)	(.031)	(.031)	(.031)
West	.046	.040	.042	.042**	.021	.015	.019	.020
	(.037)	(.037)	(.037)	(.037)	(.037)	(.037)	(.036)	(.036)
Urban areas	−.006	−.005	−.005	−.005**	.014	.015^{+}	.015	.015^{+}
	(.010)	(.010)	(.010)	(.010)	(.009)	(.009)	(.009)	(.009)
Constant	6.241**	5.903**	5.885**	6.215**	5.985**	5.825**	5.764**	6.192**
	(.038)	(.040)	(.041)	(.087)	(.036)	(.038)	(.039)	(.093)
N (person-vears)	45,063	45,063	45,063	45,063	44,974	44,974	44,974	44,974
N (respondents)	4,347	4,347	4,347	4,347	4,197	4,197	4,197	4,197

NOTE.—All models include person and survey-round fixed effects. Values in parentheses are robust SEs; ref. = reference. The NLSY97 longitudinal sampling weights are used to estimate the models. Two-tailed significance tests.

$^{+}P < .10$.

$^{*}P < .05$.

$^{**}P < .01$.

$^{a}P < .05$, when comparing women's coefficient with men's in the equivalent models.

$^{b}P < .10$, when comparing women's coefficient with men's in the equivalent models.

TABLE 5

Fixed-Effects Models of Log Hourly Wages on Time-Related Occupational Demands

	MEN			WOMEN			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	MODEL 2 VERSUS 5
Occupational demands:							
Overwork expectation	.142**	.146**	.079**	.068**	.071**	.057**	**
	(.012)	(.012)	(.012)	(.013)	(.013)	(.013)	
Deadline pressure . . .	.100**	.099**	.085**	.163**	.162**	.124**	**
	(.009)	(.009)	(.009)	(.007)	(.007)	(.007)	
Temporal coordination	−.036**	−.037**	−.038**	−.086**	−.086**	−.076**	**
	(.005)	(.005)	(.005)	(.006)	(.006)	(.006)	
Work-structuring autonomy	.031*	.033**	.033**	.027*	.028*	−.001	
	(.013)	(.013)	(.012)	(.013)	(.013)	(.014)	
Schedule irregularity	.056**	.061**	.024	−.139**	−.135**	−.022	**
	(.018)	(.018)	(.019)	(.021)	(.020)	(.022)	
Hours worked per week		.002+	.0005		.004**	.003**	+
		(.001)	(.001)		(.001)	(.001)	
Hours worked^2		−.00004**	−.00003**		−.00006**	−.00006**	
		(.000)	(.000)		(.000)	(.000)	
Education (ref. less than high school):							
High school	−.003	−.003	−.014	−.045**	−.047**	−.055**	**
	(.012)	(.012)	(.011)	(.012)	(.012)	(.012)	
Some college	.010	.012	−.001	−.022*	−.025*	−.032**	*
	(.011)	(.011)	(.011)	(.011)	(.011)	(.011)	
College and above . . .	.192**	.197**	.189**	.199**	.194**	.195**	
	(.020)	(.021)	(.020)	(.018)	(.019)	(.018)	
Enrolled in school	−.110**	−.115**	−.097**	−.075**	−.073**	−.067**	**
	(.008)	(.009)	(.008)	(.008)	(.008)	(.007)	
Relationship status (ref. married):							
Cohabiting	−.067**	−.069**	−.067**	−.053**	−.053**	−.054**	
	(.010)	(.010)	(.010)	(.010)	(.010)	(.009)	
Unpartnered	−.112**	−.113**	−.106**	−.067**	−.067**	−.064**	**
	(.010)	(.010)	(.010)	(.009)	(.009)	(.009)	
Unknown	−.116**	−.116**	−.114**	−.039**	−.034*	−.031*	**
	(.016)	(.016)	(.016)	(.014)	(.014)	(.014)	
Number of children	.008	.008	.005	−.028**	−.028**	−.027**	**
	(.005)	(.005)	(.005)	(.006)	(.006)	(.005)	
Work experience since age 14	.016**	.016**	.015**	.017**	.017**	.016**	

	MEN			WOMEN			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	MODEL 2 VERSUS 5
	(.003)	(.003)	(.002)	(.003)	(.003)	(.003)	
Work experience unknown	.012	.013	.017	.047	.046	.050 +	
	(.022)	(.022)	(.021)	(.029)	(.030)	(.029)	
Job tenure	.035 **	.035 **	.037 **	.026 **	.027 **	.029 **	+
	(.003)	(.003)	(.003)	(.003)	(.003)	(.003)	
Job tenure^2	−.002 **	−.002 **	−.002 **	−.002 **	−.002 **	−.002 **	
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	
Number of employment breaks	−.021 **	−.022 **	−.022 **	−.014 **	−.014 **	−.014 **	
	(.004)	(.004)	(.004)	(.004)	(.004)	(.003)	
Occupational education	.003 **	.003 **	.004 **	.004 **	.004 **	.004 **	**
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)	
Firm size (ref. small):							
Medium	.008	.008	.016 +	−.027 **	−.026 **	−.023 **	**
	(.009)	(.009)	(.009)	(.007)	(.007)	(.007)	
Large	.099 **	.099 **	.088 **	.095 **	.096 **	.076 **	
	(.010)	(.010)	(.010)	(.010)	(.010)	(.009)	
Unknown	−.092 **	−.091 **	−.079 **	−.057 **	−.056 **	−.052 **	*
	(.012)	(.012)	(.012)	(.011)	(.011)	(.010)	
Firm with multiple locations (ref. no):							
Yes	.005	.005	.020 **	.032 **	.030 **	.037 **	**
	(.007)	(.007)	(.006)	(.006)	(.006)	(.006)	
Unknown	−.017	−.019	−.009	.005	.006	.020	
	(.020)	(.020)	(.019)	(.017)	(.017)	(.017)	
Unionized job (ref. no):							
Yes	.108 **	.107 **	.093 **	.097 **	.097 **	.095 **	
	(.011)	(.011)	(.010)	(.011)	(.011)	(.011)	
Unknown	.041 *	.042 *	.033 +	.011	.008	.009	
	(.018)	(.018)	(.017)	(.013)	(.013)	(.013)	
Region (ref. Northeast):							
Midwest	−.068 +	−.066 +	−.062 +	−.073 *	−.068 *	−.069 *	
	(.040)	(.039)	(.037)	(.036)	(.034)	(.033)	
South	−.063 *	−.061 *	−.062 *	−.048	−.044	−.043	
	(.030)	(.030)	(.028)	(.031)	(.030)	(.029)	
West	.038	.040	.042	.019	.023	.026	
	(.036)	(.036)	(.034)	(.035)	(.034)	(.034)	
Urban areas	−.003	−.003	−.002	.013	.012	.011	
	(.010)	(.010)	(.009)	(.009)	(.009)	(.009)	
Industry	No	No	Yes	No	No	Yes	

	MEN			WOMEN			
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	MODEL 2 VERSUS 5
Constant	5.452**	5.423**	5.565**	5.574**	5.443**	5.559**	
	(.063)	(.064)	(.071)	(.046)	(.056)	(.069)	
N (person-years)	45,063	45,063	45,063	44,974	44,974	44,974	
N (respondents)	4,347	4,347	4,347	4,197	4,197	4,197	

NOTE.—All models include person and survey-round fixed effects. Values in parentheses are robust SEs; ref. = reference. The NLSY97 original sampling weights are used to estimate the models. Two-tailed significance tests.

+ $P < .10$.

* $P < .05$.

** $P < .01$.

TABLE 6

Fixed-Effects Models Examining Wage Associations of Time-Related Occupational Demands by BroAD Occupational Group

	Men	Women
Managers/professionals	.437*	−.151
	(.178)	(.133)
Expectation of overwork	.145**	.130**
	(.012)	(.015)
Overwork expectation × managers/professionals	−.040	−.188**
	(.039)	(.030)
Deadline pressure	.099**	.159**
	(.009)	(.007)
Deadline pressure × managers/professionals	−.063*	−.059**
	(.030)	(.021)
Temporal coordination need	−.036**	− .114**
	(.005)	(.007)
Temporal coordination × managers/professionals	.011	.129**
	(.019)	(.014)
Work-structuring autonomy	.044**	.023
	(.013)	(.014)
Structuring autonomy × managers/professionals	−.010	.142**
	(.041)	(.037)
Schedule irregularity	.048*	−.175**
	(.019)	(.023)
Schedule irregularity × managers/professionals	.008	.182**
	(.059)	(.049)
Hours worked per week	.002*	.004**
	(.001)	(.001)
Hours worked^2	−.00004**	−.0001**
	(.000)	(.0000)
Constant	5.434**	5.452**
Constant	(.066)	(.061)
N (person-years)	45,063	44,974
N (respondents)	4,347	4,197

NOTE.—All models contain person and survey-round fixed effects and the same variables included in models 2 and 5 in table 5 (i.e., a series of human capital attributes, various firm characteristics, relationship status, number of children, occupational education, region, and urban residence), but the coefficients are omitted to conserve space. Values in parentheses are robust SEs. The NLSY97 longitudinal sampling weights are used to estimate the models. Two-tailed significance tests.

$^{+}P < .10$.

*$P < .05$.

**$P < .01$.