NBER WORKING PAPER SERIES

THE DYNAMICS OF DUAL-JOB HOLDING AND JOB MOBILITY

Christina H. Paxson
Nachum Sicherman

Working Paper No. 4968

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
December 1994

We would like to thank Charles Brown, Andrew Caplin, Avinash Dixit, Daniel Tsiddon, and Harald Uhlig for very useful advice. Useful suggestions on an earlier version were also made by seminar participants at Princeton University, Harvard University, University of Chicago, University of Virginia, and Hebrew University. This paper is part of NBER's research program in Labor Studies. Any opinions expressed are those of the authors and not those of the National Bureau of Economic Research.

NBER Working Paper #4968
December 1994

THE DYNAMICS OF DUAL-JOB HOLDING AND JOB MOBILITY

ABSTRACT

This article concerns the incidence and dynamics of dual-job holding, and its link to job mobility. The first section presents evidence on patterns of dual-job holding, hours changes, and job mobility in the United States, using data from the Panel Study of Income Dynamics and the Current Population Survey. The results indicate that most workers experience dual-job holding sometime during their working lives, and there is a great deal of movement into and out of dual-job holding. Mobility into and out of second jobs is associated with large changes in weekly and annual hours, and there is evidence that dual-job holding is prompted by hours constraints on the main job. The second section of the article turns to theories of dual-job holding. Much of the empirical literature on second jobs is motivated by a simple model of labor supply in which workers face upper constraints on main-job hours: a worker who would like to work more on his main job, but cannot, will take a second job provided the second-job wage is high enough. These models do not account for the fact that workers may also avoid hours constraints by finding new main jobs with higher hours. We develop a stochastic dynamic model of dual-job holding and job mobility in which decisions to take second jobs and/or change main jobs are made simultaneously. This model is consistent with our findings and provides new insights into the economics of dual-job holding and labor mobility.

Christina H. Paxson
219 Bendheim Hall
Princeton University
Princeton, NJ 08544
and NBER

Nachum Sicherman
Uris Hall
Columbia University
New York, NY 10027
and NBER

I. Introduction

There has been extremely little research done on the economics of dual-job holding. This lack of attention is surprising, given the prevalence of dual-job holding in the United States. Data drawn from the 1976-1989 waves of the Panel Study of Income Dynamics (PSID) indicate that in any one year roughly 20% of working males and 12% of working females hold a second job in addition to their main job or jobs. Furthermore, the same group of people do not hold second jobs year after year. More than 50% of continuously working males hold a second job some time during their working lives, and there is a great deal of movement into and out of second jobs.

This article is concerned with the characteristics and dynamics of dual job holding. There are two main goals. The first is to characterize dual-jobs and dual-job holders, with a focus on dynamics. For example, we examine patterns of mobility into and out of second jobs for individual workers over time, and the hours changes that accompany movements into and out of second jobs. Our objective is to understand why and when workers move into and out of second jobs. We use for our analysis the 1976-89 waves of the PSID, where individuals are observed over time and asked each year a series of questions about the different jobs they held in the previous year. Whenever possible, we present parallel evidence from the May 1991 Current Population Survey (CPS), where individuals were asked about jobs they held in the week prior to the survey. Although the CPS has no panel element, it can be used to cross-check results from the PSID.

The second aim of the article is to examine models of dual-job holding, in light of the evidence presented in the first section. The existing literature suggests several different motivations for dual-job holding. Workers may face hours constraints on their main jobs.

They may seek to assemble a "portfolio" of jobs which provide desirable bundles of job characteristics. They may use dual-job holding to learn about new occupations or to gain training. Although some of our findings are consistent with several different reasons for dual job holding, none of these theories deal with our principal findings; namely that dual job holding is a prevalent and dynamic process, that workers move in and out of dual job holding along their working careers, that both dual job holding and job change are used to adjust hours of work, and that a discrepancy between working hours and desired hours of work is a common phenomena.

We present a stochastic dynamic model that seeks to explain why and when workers move into and out of second jobs, focusing on the link between dual-job holding and job mobility. The model is one in which dual-job holding is driven by hours constraints on jobs.[1] The hours desired by workers vary over time, due to expected and unexpected changes in factors that determine the value of consumption relative to leisure. Hours required by employers may vary as well. If a worker wants to work more on his main job (but cannot), he must choose between moving to a new main job with higher hours and incurring a mobility cost, or taking a second job at a lower wage. This decision is made in a dynamic context: the worker knows that desired hours will continue to evolve in the future, and decisions about dual-job holding and job mobility are made accordingly. To our knowledge, this is the first article that analyzes joint decisions of job mobility and dual-job holding in a

---

[1] There are a variety of reasons why hours constraints might exist. Firms that must co-ordinate the schedules of many workers may impose hours constraints (see Siow, 1991). Other reasons are discussed in Kahn and Lang (1987). Furthermore, the marginal productivity of a worker **within a job** may decrease with the number of hours worked, making dual-job holding attractive even if hours constraints are not employer-imposed. We thank Edward Lazear for this point.

dynamic framework.[2]

The article proceeds as follows. In section II we describe the data and present descriptive evidence on characteristics of dual-job-holding, for males and females. In section III we discuss the different theories of dual job holding suggested in the literature and evaluate them in light of our findings. In section IV we present our dynamic model of dual-job-holding and job mobility. Section V summarizes the article.

II. Empirical Analysis/Characteristics of Dual-Job Holding

1. Data

The evidence in this section is based on data drawn from the 1976-1989 waves of the PSID (Morgan, Duncan, Hill, and Lepkowski [1992]). For information on an individual to be used in a specific year, the individual had to be a head of household or their spouse. The poverty sub-sample was excluded. We supplement the PSID with data from the May 1991 Current population survey. With the exception of Table 1, we limit the CPS sample to heads of households ("reference person") and their husbands or wives, so it matches the PSID sample.

The accuracy of our results depends critically on whether "dual-job-holding" is measured correctly. We wish to define individuals as dual-job-holders if they held two or more jobs simultaneously. However, the PSID does not explicitly ask respondents about whether "extra" jobs are held simultaneously with main jobs. Specifically, the PSID asks the

---

[2] The few papers that have been written on dual-job holding and hours constraints have been conducted in a static framework (see, for example, Shishko and Rostker, 1976). We discuss these models in section III.

following question:: "Did you (head) [your wife/"wife"[3]] have an extra job or other way of making money in addition to your main job in [the year before the survey]?". This wording makes it possible that some of these "extra jobs" were actually main jobs. For example, a worker who had quit from job A to job B during the year before the survey might have reported job A as an "extra job."

We do not believe this to be a serious problem, for several reasons. First, the question on extra jobs is asked after a series of questions on "job history", and in the context of the survey it seems clear that the question is meant to measure second jobs. Starting in 1981, the preceding employment-history questions became more detailed, making it even more clear that the question was about a second job; Table 1 indicates that there was no dramatic decrease (but rather an increase) in the rate of dual-job holding after 1980.

Second, the CPS and PSID data on dual-job holding appear to be roughly comparable. Since the CPS asks about dual-job holding in the week before the survey, answers are much less likely to reflect sequential jobs. However, it is not straightforward to compare the CPS and PSID numbers because they are based on different reference periods. We converted the "annual" rates of dual-job holding from the PSID to "weekly" values by dividing the weeks of work on the second job by 52 minus weeks of unemployment in the previous year. The mean "weekly" rates of dual job holding in the PSID, reported in Table 2, were 9% for men and 4.4% for women, fairly close to the 7% and 6% reported in the CPS. The PSID and CPS also show similar rates of dual-job holding within main-job occupation groups.

Third, 70% percent of dual job holders from the PSID report more than 52 weeks worked on all jobs, an indication that they held the two (or more) job simultaneously at least

---

[3]The PSID uses the term "wife"(in quotes) in referring to these long-term female cohabitors.

part of the year. Twenty-one percent report total weeks between 96 and 104, indicating that they held more than one job for most of the year.

2. Rates of Dual Job Holding

Table 3 presents information on: 1) the rate of dual-job holding for males and females by occupation; 2) the percentage of cases in which the second job is in the same occupation as the main job; and 3) other occupations in which workers most frequently moonlight[4]. There is considerable variation in dual-job holding across occupations, although with no clear relation to skill level. Not surprisingly, male teachers have the highest rates of dual-job holding.[5] No occupation has a rate of dual-job holding less than 15% for males (and 6% for women).

Nearly 78% of male and 72% of female dual-job-holders have second-job occupations that differ from those on the main job (at a 2-digit level)[6]. Medical professionals, accountants, lawyers and craftsmen are most likely to take second jobs in their main occupation[7]. However, even among these groups, a large fraction (around 40% for accountants) take second jobs in different occupations.

The fact that people often go outside of the occupation of their main job when selecting second jobs is perhaps surprising. However, it is consistent with several models of dual-job

---

[4]Table 4 reports the same information using the CPS sample.

[5]This is **not** merely due to summer jobs held by teachers. Even in the May 1991 CPS, conducted when most schools would have been in session, teachers had the highest rate of dual-job-holding.

[6]In the CPS sample the rates are 83% and 77% respectively.

[7]For women, physicians, dentists, judges and lawyers always report the same occupation as their second job. Other medical and paramedical, accountants and auditors, and service workers also report relatively high rates of moonlighting in the same occupations.

holding. First, it could easily be explained by a "portfolio" model, in which workers are choose packages of jobs so as to optimize over the mean and variance of income. In this case, jobs in different occupations offer some insurance, insofar as the correlation between returns in different occupations is relatively low. Second, it is also consistent with models in which second jobs provide workers with training, professional contacts, or other desirable characteristics that cannot be obtained in the main-job occupation. Finally, workers with hours constraints on their main jobs may seek second jobs in other occupations, simply because evening and weekend hours are not available in their main-job occupations. The high fraction of female dual-job holders who work (in second jobs) in the "other clerical", sales and "other service" suggests that this may be the case.

3. Wages on Main and Second Jobs

Different theories of dual-job holding have different implications for the relationship between the wage on the main and second jobs. For example, the textbook model of dual-job holding in the presence of hours constraints assumes that the second-job wage is lower than the wage on the main job. This produces a "kink" in the worker's budget constraint, given an hours ceiling on the main job. The standard result of this model is that not all workers who are bound by hours constraints on their main jobs will take second jobs.

The evidence on the relationship between main and second job wages is sketchy, because questions about second-job wages and earnings often yield missing data. For example, in the PSID, second-job wages cannot be computed for 27% of the male dual-job holders and 42% of the female dual-job holders in Table 3. The CPS fares even worse, with only about 15% of dual-job holders having non-missing wage data. It may be that the likelihood of having missing data is correlated with the true second-job wage, and so the numbers presented below must be treated extremely cautiously.

Table 5 reports the means and medians, for each occupational group, of the ratio of the second to main-job wage rate, and Table 6 reports the same information using the CPS sample. This ratio may overstate the true ratio of wages on second and main jobs, since fringe benefits are not included in either measure of wages.[8] The median wage ratio is positively correlated with skill level: for example, doctors, judges, lawyers, accountants, and self-employed managers have high wage ratios[9]. Workers who are neither professionals nor managers tend to have lower wage ratios, although there are some exceptions to this rule. One interesting comparison is between college and university teachers (median ratio of 1.29 for males) and primary and secondary school teachers (median ratio of .75 for males). The variation in the wage ratios across occupations suggests that different groups of workers may be motivated to hold second jobs for very different reasons. Hours constraints models of dual-job holding may be relevant to the group with a ratio less than one, whereas other models of dual-job holding may be more appropriate for other groups. Our results in sub-section 6 support this idea.

4. Prevalence of Dual Job Holding Over Time and Job Mobility

The dramatically higher rates of dual job holding reported (on annual basis) in the PSID relative to those reported in the CPS (on weekly basis) indicate that many workers move into and out of second jobs over time. Table 7 extends this analysis over a longer period of time.

---

[8]If fringe benefits do not vary with hours, then this ratio is an accurate measure of the ratio of the marginal wages on the second and first job.

[9]Although we do not study the link between dual job holding and education, we do make several observations that are potentially important. Dual job holding rates are high among workers with very low levels of education, where wages on the second job are likely to be higher than those on the main job. Beyond eight years of schooling the rates of dual job holding are increasing with schooling and the wage on the second job is increasing as well, especially for post graduates.

For a sample of men from the PSID who had positive work hours in all years between 1976 and 1989 (and women between 1979 and 1989), 64.4% of the men and 42.7% of the women held a second job in at least one year. Presumably, the fraction of workers who hold a second job at some time during their lives is higher. There is also evidence of substantial movements into and out of second jobs. For example, of men who held second jobs in 6 out of the 14 years sampled, only 14.3% held a second job in 6 consecutive years. The data suggest a nonlinear relationship between dual-job holding and mobility on the main job. Workers who either never or almost always hold second jobs have low separation rates from their main jobs. Those who move into and out of second jobs often also change their main jobs more often. Although this fact does not provide direct evidence on an hours constraints model (and could be simply indicate that some workers are more stable than others), it does indicate that a joint analysis of dual-job holding and job mobility is warranted.

5. Hours of Work

Dual-job holding is related to higher average annual work hours (Table 7, column 3, and Table 8). Furthermore, workers who move in and out of second jobs more frequently have more variable work hours. For example, the average coefficient of variation of annual work hours is 13.7% for those who never held a second job, and 23.2% for those who held a second job in 7 out of the 14 years. This fact is consistent with the idea that second jobs may be an important source of hours adjustments for workers.

Table 8 and Figure 1 compare the distributions by sex of working hours on main and second jobs, for dual-job-holders and non-dual-job-holders. Several important observations can be made. First, dual-job-holders have higher average total annual work hours than non-dual-job-holders, and slightly lower annual hours on their main jobs. They work on their main job only about two hours per week less than non dual job holders and spend about 15

hours per week on their second job. The spike in their total annual hours is around 2300 hours for men and 1850 hours for women. Second, dual-job holders spend a large fraction of their working time on second jobs. They moonlight about 18 weeks per year[10] and their average annual hours on the second job account for about 17% of total work hours, for both men and women.

Table 9 presents information on the relationship between hours changes and movements into and out of second jobs. These numbers indicate that movements into second jobs are associated with large increases in average total annual hours (roughly 14%), and only negligible reductions in main-job hours. Likewise, movements out of second jobs result in large total hours reductions and small increases in main-job hours. Similar patterns appear for average hours per week and weeks per year. These numbers are consistent with the results of Table 8, and indicate that dual-job holding may be an important source of hours adjustment.

6. Hours Constraints, Quits and Dual Job Holding

In this section we examine the hypothesis that workers use dual job holding and job mobility to adjust their working hours when faced with hours constraints on their main job. Respondents to the PSID were asked if they would have liked to work more (or less) hours on their job at the current wage. We use this information to examine whether the patterns of job mobility and dual-job holding that are observed can be predicted by hours constraints.

We selected a sample of males from the 1976-1989 waves of the PSID who were: 1) between the ages of 18 and 65, 2) had positive work hours, and 3) held only one main job and no second jobs in the year before the survey. The series of questions from the PSID on

---

[10]The means are 24.6 for men and 22.7 for women, and the medians are 19 and 17 weeks respectively.

hours constraints were used to construct a measure of whether the workers wanted to work more (but couldn't), and wanted to work less (but couldn't).[11] We then looked forward two years in the data, to see which of these men had changed jobs and increased hours, changed jobs and decreased hours, taken second jobs at lower wages (and not quit), taken second jobs at higher wages (and not quit), or had neither changed jobs nor taken second jobs.[12]

---

[11]The questions on hours constraints in the PSID are not ideal. First, workers are asked whether they were constrained on **any** of the jobs(s) they held in the year before the survey. We therefore cannot measure whether workers who changed jobs or held dual jobs faced hours constraints on their **main** job. Second, the questions are sequenced in such a way that individuals who indicate that they would have liked to work more (but could not) were not asked if they would have liked to work less (but could not). It is possible that some workers may have faced upper constraints in part of the year, and lower constraints in another part of the year, and the questionnaire would not pick this up. The number of workers who indicate that they would have liked to work more (but couldn't) is approximately 3 times larger than the number who indicate that they would have liked to work less (but couldn't), and this may be due to the sequence of the questions. Third, it is not clear whether the questions are relevant for salaried workers. To be classified as facing an upper constraint on hours, a worker first had to indicate that no more work hours were available on his job, and then indicate that he would have liked to work more. Salaried workers who could have worked more hours, but would have earned no more money from doing extra work, may have indicated that "more work was available," and would therefore be classified as being unconstrained (even if they would have liked to work more had they been paid for doing so.) More details are given in the notes to table 10.

[12]The sample consisted of those who had neither quit or been laid off in t or t-2, and who held no second job in t-2. The job mobility indicator was constructed by seeing if the workers quit to a new job in t-1. Lay-offs were excluded from the sample. To see if a quit led to greater or fewer work hours, we compared total annual hours in t with those in t-2. An individual was said to move into dual job holding if a second job was held in t. We then compared the reported wage on the second job in t with the reported wage on the main job in t. We looked forward two years, rather than one, so we could be sure that hours measures referred to one job only, rather than a mixture of two jobs for those who changed jobs. We eliminated those who changed main jobs in t and t-2 so that hours measures would not reflect spells of unemployment between jobs. Dual-job holders with missing wages on the second job were excluded. The fraction of dual-job holders who report no wage on the second job is high (roughly 40%). Many of these workers were self-employed in their second job, or worked on several second jobs in the year before the survey. Estimation of models that include this sample (as a separate outcome) indicate that movements into second jobs with missing wages are not influenced by hours constraints.

We estimated a multinomial logit model with each of these transitions as one possible state. The independent variables (all measured in the base period) included the two indicators of hours constraints, tenure, age, and age squared. The top panel of Table 10 shows results from the full sample of workers. The lower panel excludes workers who were salaried in t-2, since it is not clear that the hours constraints variables are meaningful for this group. The results we report do not control for changes in time-varying characteristics of workers (such as marital status, number of children, etc.) Our theory suggests that these variables should influence mobility only through their effects on the discrepancy between desired and actual hours (reflected in the hours constraint indicators). We experimented with adding controls for occupation, the survey year, union status, whether the individual was a government employee, and other personal characteristics such as marital status and number of children (all measured in the base year.) These additions had little effect on the results.

The results in Table 10 indicate that hours constraints affect both job mobility and dual-job holding. The first variable, "wants to work more", is positively and significantly related to changing jobs and increasing hours, and to taking second jobs at lower wages. It is negatively related to changing jobs and decreasing hours, and not related to taking second jobs at higher wages. These results support the idea, discussed earlier, that those who take second jobs at lower wages do so for different reasons than those who take second jobs at higher wages, and a different model of dual-job holding is necessary to explain the behavior of the latter group. As expected, "wanting to work less" is positively and significantly related to changing jobs and decreasing hours, but is not significantly related to other outcomes. In summary, these results indicate that hours constraints affect both job mobility and dual-job holding. However, those who take second jobs at higher wages do not appear to be motivated by hours constraints.

It should be kept in mind when interpreting these results that the information on hours constraints is far from ideal (see footnote 10). The questions on which the constraint indicators are based may be interpreted differently from respondent to respondent, and may also be "job-specific". For example, a worker who dislikes his current job for reasons **other** than required hours may report that he would "like to work less", even though he might like to work more hours on a more desirable job. This could account for our finding that "wants to work less" is positively (although not significantly) related to quitting to jobs with higher hours. Another potential problem is that workers who face severe hours constraints may change jobs or take second jobs soon after the constraints appear. Our analysis examines mobility behavior in the year **after** constraints are reported. (We cannot measure hours constraints in the year the person changed jobs or took a second job, since it is then unclear to which job the hours constraints apply.) Our results may therefore underestimate the true effects of hours constraints on job mobility and dual-job holding. These caveats aside, our analysis show that hours constraints affect mobility and dual-job holding.

III. Theories of Dual Job Holding

The standard textbook model of dual job holding is an hours constraints model (e.g., Perlman 1969). The few papers that have been written on dual-job holding and hours constraints have been conducted in a static framework (see, for example, Shisko and Rostker, 1976). The standard assumptions are that individuals cannot increase the hours they work on their main jobs, but have the option of taking a second job at a typically lower wage. Workers who want to work more on their main job but cannot will take a second job if the wage on the second job exceeds the shadow wage at the main job hours level.

The evidence presented in section II is broadly consistent with the hypothesis that hours

constraints motivate dual-job holding. First, there is evidence that those who want to work more (but cannot) are more likely to take second jobs. Second, movements into second jobs result in large increases in total hours, movements out of second jobs result in large hours declines, and workers do not decrease their main-job hours when they take second jobs. These are the patterns of hours changes one would expect if workers face hours constraints on their main jobs.

There are a variety of other possible reasons for dual-job holding in addition to hours constraints. Two jobs could complement each other, where one job is the main source of income while the other provides professional training, contacts or prestige. Typical examples include physicians who work in a hospital and have a private practice, or professors who engage in consulting. Dual-job-holding can also be viewed within a portfolio framework. For example, one job might provide a steady but low income, and the second might have wages that are high on average but more variable. Second jobs could also be used by workers to gain experience in or to learn about new occupations.

The diversity of possible reasons for dual-job holding is illustrated by data from the CPS survey, which asked dual-job-holders their reasons for holding a second job. Twenty-nine percent of males (37% of females) answered "to meet regular household expenses," 8% (8.4%) said "to pay off debts," 10% (6%) said "to save for the future", 6.4% (8%) said "extra money for something special", 3.7% (6%) said "to help a friend", 9% (8.5%) said "to get experience in a different occupation or build up business", and 19.7% (16%) said they "enjoy work on second job". The rest specified "other." These answers clearly imply that there are multiple reasons for dual-job holding. Of the answers given, the first four are consistent with hours constraints on main jobs, and with other models of dual-job holding as well. Our finding that a substantial number of workers moonlight in a different occupation

than their main job also support the "complementarity" and "portfolio" hypotheses (although they do not contradict the hours constraints model). However, the fact that most dual-job-holders do not work less on their main jobs is inconsistent with these explanations.[13]

Although the data appear to be broadly consistent with the textbook "hours constraints" model of dual-job-holding, there are several issues that this simple model does not address. First, it does not explain how workers come to be working in main jobs with hours that are unsatisfactory: the choice of the main job (and the hours that go along with it) are taken to be exogenous. Second, it does not explain why workers do not change main jobs to avoid hours constraints, rather than take second jobs. These questions can only be addressed by a dynamic model, which we develop in the next section.

IV. A Model of Job Mobility and Dual-Job Holding

1. Overview of the Model

Two key ideas underlie our analysis of dual-job holding and job mobility. First, we start with the idea that hours adjustments cannot be made within jobs. The truth of this assumption is likely to vary from job to job. However, there are both theoretical reasons as well as empirical evidence in support of the idea that hours constraints may be prevalent.[14] If hours cannot be adjusted within jobs, then workers who want to work greater or fewer hours must change jobs (or add/drop second jobs) in order to alleviate hours constraints.

---

[13]We thank Charles Brown for making this point.

[14]See Card (1987) for a survey. Further references on the theoretical literature are in Altonji and Paxson (1992). Empirical studies include Ham (1979, 1982 and 1986), Moffitt (1984), Gustmann and Steinmeier (1983, 1984), and Kahn and Lang (1987). Siow (1987) argues that workers whose hours differ from those they work with incur wage penalties.

Furthermore, if jobs are costly to change, then workers may continue in jobs with unsatisfactory hours.[15] Data from the PSID support this idea. In any given year, approximately 30% of employed males report dissatisfaction with their work hours.[16]

The second key point in the model is that the desired hours of workers vary over time. Some of this variation may be predictable, reflecting life-cycle changes in desired hours. However, a portion of the variation in desired work hours may be random. The idea is that desired hours are determined by a set of individual-specific factors (in addition to the wage) that affect the value of leisure relative to consumption, and that these factors can vary unexpectedly. For example, non-wage labor supply determinants might include such things as the value of financial wealth, the health status of the worker or of family members, marital status, and numbers of children. Variations in each of these factors over time contain random elements, producing stochastic variations in desired work hours. A good example might be changes in the employment status of a spouse: if one spouse unexpectedly loses a job, the other might want to increase work hours, at least until the spouse can find a new job (see Krishana, 1990). Imperfections in either insurance or credit markets may accentuate the links between changes in labor supply determinants and desired hours. For example, with perfect credit markets, the effects of a spouse's job loss on consumption can be spread over the full lifetime of the household. For credit-constrained consumers, however, the effect of such a job loss on current consumption will be much larger unless the other spouse increases his work hours.

---

[15] Costs might include search costs, foregone returns to firm-specific human capital, or lost deferred benefits, such as pensions.

[16]Similar findings on the frequency of hours constraints, using other data sets, both in the U.S. and other countries were made by Katona, Strumpel, and Zahn (1971) and Bell and Freeman (1994).

In section 2, below, we analyze how stochastic preferences, together with inflexible hours within jobs and mobility costs, affect job mobility decisions when dual-job holding is not an option. Inflexible hours within jobs and costs associated with changing jobs imply that desired hours and actual hours within a job may at times diverge. Controlling for wages, workers will change to new jobs only if the expected gain in welfare due to having more desirable hours outweighs the fixed cost of mobility. The implication is that there will be a **range** of work hours around desired hours which, if required by the employer, would not provoke a job change. The presence of stochastic, rather than static, preferences will generally broaden the range of hours over which no mobility occurs. With on-going uncertainty as to what desired hours will be in the future, workers will take into account the positive probability that desired hours will move back toward current work hours sometime in the future. Specifically, the presence of uncertainty increases the value of not changing jobs (despite current hours constraints) and waiting to see how desired hours continue to evolve in the future. Furthermore, if future desired hours are uncertain, workers who do change jobs may choose hours on their new jobs differently than if expectations had been static.

In section 3, we allow for the possibility that second jobs can be used by workers to alleviate hours constraints. The major assumption made is that workers can always find, at no cost, a lower wage job at any hours level. The addition of second jobs alters the analysis of job mobility in several respects. First, for workers who are dissatisfied with their hours, dual-job holding and job mobility represent alternative methods of adjusting hours. In general, the availability of second jobs should lower mobility. Second, dual-jobs add asymmetry to the model. Second jobs can be used to increase but not reduce hours. This fact has implications for the hours levels workers will choose given that they change main jobs.

Specifically, the availability of second jobs reduces the expected utility cost of choosing a new main job with "low" hours, since the worker knows that hours can be supplemented with a second job if necessary.

The ideas discussed above are similar to those in a series of papers on topics such as pricing decisions, S-s inventory decisions, and investment decisions[17]. All of these papers investigate adjustment behavior in the presence of fixed costs in a stochastic dynamic setting. For example, in the menu cost model developed in Dixit (1991), firms must decide whether to adjust their prices (at a fixed cost), given that the general price level follows a stochastic process. In the model presented in this article, workers must decide whether to adjust hours (by changing jobs) at a fixed cost, given that desired hours follow a stochastic process. Our model offers a twist on those in the papers cited above in that there is more than one method of adjustment available: workers may change their work hours by changing jobs or by moving into and out of second jobs. Second jobs operate as release valves for hours constraints, and the availability of second jobs should result in less job mobility.

Our model is also similar in some respects to the theory of job matching and turnover (Jovanovic, 1979). For example, in the Jovanovic model job mobility is driven by the discrepancy between the value of the current job relative to outside opportunities, where the value of the job match is a function of the worker's productivity on the job. In this model, the true value of the job match is fixed but, ex-ante, not known. Workers and employers learn more about the value of the match over time. In the context of our model, a "good match" can be interpreted as a job in which desired hours match required hours. However, unlike in the Jovanovic model, the value of a job match is stochastic, and varies as desired

---

[17]For example, Scarf (1960), Grossman and Laroque (1987), Caplin and Leahy (1989), and Dixit (1989, 1990, 1991).

hours evolve. Moreover, opportunities for dual-job holding also affect the value of the current match, since dual-job holding provides dissatisfied workers with an alternative means of changing work hours.

In the following sections we sketch a model that shows how workers make job mobility and dual-job holding decisions. For ease of exposition we do not provide all the technical details of the model (which are available in Paxson and Sicherman, 1992). We also discuss the assumptions we make about functional forms to yield tractable results. The model should be thought of as a specific example, which can be used to illustrate the general points discussed above.

2. A Model of Job Mobility with No Second Jobs

We begin by developing a model of job mobility when second jobs cannot be used to increase hours. This model is then modified to allow for dual-job holding.

The basic assumptions of the model are: 1) the preferred hours level is stochastic, 2) the wage rate is fixed, and 3) work hours are inflexible within jobs but can be altered to any level by changing jobs at a fixed cost. The rationale for the first of these assumptions was discussed above. The assumption of a fixed wage rate is made to focus attention on mobility due to changes in desired hours. The third assumption, of fixed hours within jobs, is obviously somewhat unrealistic. Even if firms fix the hours that workers must provide, firms may change required work hours in response to fluctuations in output demand. We discuss, below, how the model can be altered to allow for fluctuations in required work hours.

The worker's instantaneous utility function is represented as:

$$U_t = wH_t - \beta(X_t)H_t^2 \qquad (1)$$

where H_t is hours of work at time t and w is the wage rate. X_t is a set of stochastic labor

supply determinants, and $\beta(X_t)$ measures the effects of these variables on the marginal utility of work hours. In what follows, $\beta(X_t)$ will be shortened to β_t. However, if should be kept in mind that we do not consider the underlying parameters of the utility function to be stochastic. Variations in β_t do not represent variations in tastes, but rather changes in the labor supply variables X_t. The utility function that is chosen is linear in consumption but concave (specifically, quadratic) in work hours. This utility function is actually less restrictive than it appears to be. For example, a utility function that is quadratic in both consumption and hours can be written in the form of equation (1) if the worker earns no non-labor income[18].

If changing jobs was costless, or if hours were perfectly flexible within jobs, then hours would be chosen at each instant simply by maximizing (1) with respect to H_t, given β_t. The result of this maximization yields a desired hours level H^*_t equal to $w/2\beta_t$. It is useful, in what follows, to express the utility function in terms of H^*_t rather than β_t:

$$U_t=\frac{wH_t^*}{2}[2x_t-x_t^2], \tag{2}$$

where x_t is the ratio of actual to desired hours ($x_t = H_t/H^*_t$.)

The assumptions that hours are inflexible within jobs and that there are costs associated with changing jobs implies that workers will not always work hours equal to H^*_t. Instead, workers will change hours (and jobs) only if the expected welfare gain associated with the change exceeds the fixed cost of the change. Furthermore, the worker makes this decision knowing that desired hours will continue to evolve in the future. The value function

---

[18]Specifically, suppose that $U_t = wH_t - \alpha_{1t}(wH_t)^2 - \alpha_{2t}H_t^2$. Define $\beta_t=(\alpha_1 w^2 + \alpha_2)$ to get a utility function of the same form as that specified in (1).

associated with this maximization problem can be written as:

$$V(H,H^*) = MAX\ E\ \{ \int_0^{\infty}[(w/2)H_t^*(2x_t-x_t^2)]e^{-rt}dt-\sum_i Ke^{-rt_i}\ \} \qquad (3)$$

where initial hours and desired hours are denoted as H and H^*, respectively, r is the interest rate, K is the cost of changing jobs and t_i denotes the times at which the job is changed. Thus, given initial values for hours and desired hours, the worker must decide both whether to change jobs and, if so, what hours level to pick on the new job.

In order to derive a solution for the worker's optimization problem, the stochastic process that H^* follows must be specified. We assume that desired hours follows a geometric Brownian motion[19], such that:

$$\frac{dH^*}{H^*} = \mu dt + \sigma dz\ . \qquad (4)$$

Equation (4) implies that the logarithm of desired hours follows an arithmetic Brownian motion with a trend term of μ-(1/2)σ^2 and variance of σ^2. The basic assumption underlying this choice of stochastic process is that random changes in the variables X_t that underlie the change in desired hours display a great deal of persistence. This seems to be a sensible assumption for some variables, such as changes in financial wealth or health status, that might drive movements in desired hours. However, one can also imagine desired hours following a process that is much less persistent. For example, desired hours could fluctuate randomly around a fixed mean, with no correlation in desired hours across years. In general, the greater the degree of persistence in desired hours, the more attractive job mobility will be

[19]A simple Browninan motion can be derived as the continuous limit of a discrete-time random walk. For the usefulness and various uses of geometric Brownian motion, see Dixit and Pindyck (1994).

given a discrepancy between desired and actual hours.

The solution to (3) consists of three numbers, denoted x_1, x_2 and x_3, where $x_1 < x_2 < x_3$. The term x_1 is defined as the lowest ratio of actual to desired hours that will not induce a job change: if desired hours rise enough such that H/H^* is less than x_1, the worker will quit to a new job with higher hours. Likewise, x_3 is the highest acceptable ratio of actual to desired hours. If H/H^* rises above x_3, the workers moves to a new job with lower hours. The term x_2 describes the ratio of actual to desired hours that will be chosen given that the job is changed. Thus, if a change is made new hours are chosen such that $H = H^* x_2$.

In Paxson and Sicherman (1992), we solve the model, discuss some of the assumptions we make, and use simulations to analyze its implications[20]. In what follows we present our main results.

The first result is that there is a wide range of desired hours over which hours are not changed. An increases in the costs of mobility widen the range of inactivity, and reduce the quit probability. Even a very modest cost results in a substantial range of inactivity. For example, with no trend in desired hours (and relatively low variance of $\sigma = .05$), and a discount rate of 10%, mobility cost of only 2.5% of income can generate a range of inactivity where individuals will not quit until actual hours are less than 78% of desired hours or more than 126% of desired hours.

Second, an increase in the variance of desired hours result in wider range of inaction. However, an increase in the variance of desired hours *increases* the probability that a quit will occur. Thus, although individuals with more variable hours will accept larger deviations between actual and desired hours, the increase in x_3 and reduction in x_1 is not large enough

---

[20]Due to the nature of the problem, a closed-form solution for x_1, x_2, and x_3 cannot be derived. As is commonly done we use simulations as a substitute.

to reduce the quit probability. Our finding of a positive correlation between the coefficient of variation of annual hours of work and quit probabilities support this result.

As might be expected, trends in desired hours have an asymmetric effect on x_1 and x_3. An individual who expects desired hours to fall over time will be less likely to quit from a job that demands fewer hours than are currently desired, and more likely to quit from a job that demands more hours than are currently desired. Furthermore, positive trends in desired hours are associated with higher hours choices given that a quit occurs, and negative trends result in lower hours choices given a quit. Overall, larger absolute trends in desired hours result in higher quit rates.

How does the model change if the hours required by firms are allowed to vary? Adding variability in required hours does little to alter the basic implications of the model. Workers make mobility decisions taking into account the fact that hours constraints on the current job may be alleviated in the future, through changes in either required or desired hours. We do not extend the analysis to the case in which the hours required by firms co-move (due, for example, by common macroeconomic shocks). Economy-wide fluctuations in hours requirements are likely to produce economy-wide fluctuations in the real wage, calling for a model in which wages are endogenously determined.

The solutions to the problem with and without variation in required hours are similar. The major differences are as follows. First, the worker takes into account variability in both his desired hours and in required hours when making mobility decisions. In all of the equations presented above, it is the **sum** of these variances that affects mobility decisions and the choice of hours. Second, trends in required and desired hours have opposite effects on mobility decisions. Workers will be more likely to separate when the different trends diverge. As expected, trends in required hours produce asymmetric effects in x_1 and x_3. All

else equal, workers who want to work more will be less likely to quit if required hours trend up, and more likely to quit if required hours trend down.

3. The Model With Second Jobs.

Next, we modify the model described above to allow for dual-job holding. For simplicity, we assume that required hours are non-stochastic, although extending the model to allow for stochastic variation in required hours is straightforward. Assume that: 1) second jobs are costless to obtain, and 2) the wage on second jobs is lower than that on main jobs. The assumption that second jobs are costless to obtain implies that hours constraints on second jobs do not exist: even if a specific second job has a fixed hours requirement, the worker can easily move to a different second job if a different hours level is desired. The assumption that the wage on the second job is less than the wage on the main job is crucial. Without this assumption, workers would always prefer to take second jobs as their main jobs, and no one would face hours constraints. The data presented in Tables 5 and 6 indicate that although for many workers second-job wages are lower than main job wages, this is not true for all workers, especially those in more skilled occupations. It may make sense to think of the model presented here as applying to the former group, with the latter group choosing second jobs for reasons other than hours constraints. This assumption is supported by the results reported in Table 10.

The addition of second jobs means that the utility function becomes:

$$U_t = wH_t + w_2H_{2t} - \beta_t(H_t + H_{2t})^2 \qquad (5)$$

where w_2 is the second job wage, and H_{2t} is hours on the second job.

Since hours on the second job are perfectly flexible, H_{2t} will be chosen to maximize utility at each instant. The solution for H_{2t} is:

$$H_{2t}^{*}=MAX(\lambda H_{t}^{*}-H_{t},0), \tag{6}$$

where λ is the ratio of the second-job wage to the main-job wage ($\lambda=w_2/w$). By assumption, λ is less than 1. Equation (6) implies that the worker will take a second job only if $x_t<\lambda$.

The solution to the worker's maximization problems consists of three numbers, which will now be denoted xx_1, xx_2 and xx_3 to distinguish them from the solutions when there is no dual-job holding. As before, these three numbers denote the minimum acceptable ratio of actual to desired hours, the ratio of actual to desired hours chosen in the case of a quit, and the maximum acceptable ratio of actual to desired hours. There are three possible types of solutions for xx_1 through xx_3:

CASE 1: $\lambda < xx_1 < xx_2 < xx_3$. The worker will never accept a second job. If desired hours increase relative to actual hours such that $x < xx_1$, the worker will prefer to change to a new job rather than accept a second job. In this case, the solutions for xx_1, xx_2 and xx_3 are identical to the solutions for x_1, x_2 and x_3.

CASE 2: $xx_1 < \lambda < xx_2 < xx_3$. In this case, the worker will take a second job if x lies between xx_1 and λ. However, when the worker does change to a new job, any second job previously held will be quit. In other words, at the optimal hours level given that a quit takes place the worker will not want a second job.

CASE 3: $xx_1 < xx_2 < \lambda < xx_3$. In this case, as in Case 2, the worker will hold a second job if $x < \lambda$. Furthermore, since xx_2 is less than λ, the worker who quits to a new main job will also simultaneously take a second job, even if a second job was not held before the quit. For example, a person for whom x exceeds xx_3 (indicating that the person wants to work less on the main job) will quit to a new main job with lower hours *and* take a second job to supplement hours. Such behavior, which may seem odd, actually makes sense in the

context of a dynamic model. The worker may prefer to move to main jobs with lower-than-desired hours to guard against the possibility that desired hours decline in the future, and supplement these hours with a second job.

Simulations of xx_1, xx_2 and xx_3 show that the availability of second jobs affects the quit rate from the main job. Specifically, as the wage on the second job relative to that on the main job increases, the quit probability declines. Furthermore, increases in the second-job wage have asymmetric effects on the threshold levels of hours at which a quit occurs. As λ increases, xx_1, xx_2 and xx_3 decline. In words, as the wage opportunities on second jobs rise, workers become more willing to stay in jobs that require fewer hours than are desired, less willing to stay in jobs that require greater than desired hours, and will choose new jobs with lower hours levels (relative to desired hours.) As λ increases, the decline in xx_1 is much larger than the decline in xx_3, and the probability that a quit occurs declines. Thus, workers who can command high wages on second jobs should have less mobility in their main jobs, all else equal.

As might be expected, increases in the variance of desired hours increase both job mobility and dual-job holding. Workers with "unstable" desired hours are more likely to move from main job to main job, and into and out of second jobs. This finding is consistent with the evidence in Table 7, which shows that the group of people who moves into and out of second jobs frequently also change main jobs frequently. In the context of this model, these people would be characterized as those with highly variable desired hours levels. Another prediction of the model is that increases in the costs of changing jobs reduces job mobility and increases the probability of dual-job holding. Again, this is consistent with the evidence in Table 7. Those workers who consistently hold second jobs year after year (but who change main jobs infrequently) should be those with high mobility costs. It should be

noted that if costs are low enough, workers may choose to never hold second jobs (as in Case 1, above.)

As in the case of no dual-job holding, trends in hours increase mobility rates between jobs. However, the effects of trends in desired hours on rates of dual-job holding depend on the value of λ chosen. When λ is relatively low, workers with downward trends in desired hours are less likely to hold second jobs, and workers with upward trends are more likely to hold second jobs. By contrast, when λ is close to 1, workers with downward trends hold second jobs **more** frequently than workers with no trends. The reason is that, with high λ, workers who quit will simultaneously take a second job (i.e. $x_2 < \lambda$). This is the outcome described in Case 3, above. The pattern for workers with downward trends in hours and high λ is to quit to a new main job with lower hours and take a second job to supplement hours, and then give up the second job as desired hours continue to fall. When λ is low, workers who quit and reduce main-job hours do **not** simultaneously take a second job. Therefore, downward trends in desired hours reduce the likelihood of dual-job holding.

V. Conclusions

The commonly cited rate of dual-job holding in the U.S. is around 6 percent. This rate is based on data drawn from the CPS, where individuals are asked about their employment in the week prior to the survey. This article is the first, to our knowledge, to analyze the incidence and dynamics of dual job holding over a long period of time. Using the PSID, we find that in any one year roughly 20% of working males and 12% of working females hold a second job in addition to their main job. More than 50% of working men hold a second job sometime during their working lives.

We also show that there is a great deal of movement into and out of dual-job-holding.

Mobility into and out of second jobs is associated with large changes in weekly and annual hours, and there is evidence that dual-job holding is prompted by hours constraints on the main job.

Much of the empirical literature on second jobs is motivated by a simple model of labor supply in which workers face upper constraints on main-job hours: a worker who would like to work more on his main job, but cannot, will take a second job provided the second-job wage is high enough. Such models do not account for the fact that workers may also avoid hours constraints by finding new main jobs with higher hours. We develop a stochastic dynamic model of dual-job-holding and job mobility in which decisions to take second jobs and/or change main jobs are made simultaneously. This model is consistent with our findings; especially those that are not dealt with in a static framework: namely that dual job holding is a prevalent and dynamic process, that workers move in and out of dual job holding along their working careers, that both dual job holding and job change are used to adjust hours of work, and that a discrepancy between working hours and desired hours of work is a common phenomena.

REFERENCES

Altonji, Joseph and Christina H. Paxson (1986) "Job Characteristics and Hours of Work", Research in Labor Economics, Vol.8, pp:1-55.

Altonji, Joseph and Christina H. Paxson (1988) "Labor Supply, Hours Constraints, and Hours Wages Trade off" Journal of Labor Economics Vol. 6 no. 2, pp: 254-276

Altonji, Joseph and Christina H. Paxson (1992) "Labor Supply, Hours Constraints and Job Mobility," Journal of Human Resources, vol. 27, no. 2 (Spring 1992): 256-278.

Bell, Linda and Richard Freeman "Why do Americans and Germans Work Different Hours?" Working Paper # 4808, National Bureau of Economic Research, Cambridge MA, July 1994.

Brown, James N, and Light, Audrey "Interpreting Panel Data on Job Tenure" Journal of Labor Economics vol 10, no. 3, July 1992, pp:219-257

Caplin, Andrew and John Leahy (1989)"State Dependent Pricing and the Dynamics of Money and Output", Discussion Paper Series No. 448, Columbia University, October 1989.

Card, D. 1987. "Supply and Demand in the Labor Market", Industrial Relations Section Working Paper No. 228, Princeton University (November).

Dixit, Avinash (1989) "Irreversible Investment with Price Ceilings," Princeton University, mimeo.

Dixit, Avinash (1990) "Investment and Hysteresis," Princeton University, mimeo.

Dixit, Avinash (1991) "Analytical Approximations in Models of Hysteresis," Review of Economic Studies, Vol 58, pp. 141-151.

Dixit, Avinash and Pindyck, Robert "Investment under Uncertainty", Princeton University Press, Princeton NJ: 1994.

Grossman, Stanford J., and Guy Laroque (1987) "Asset pricing and optimal portfolio choice in the presence of illiquid durable consumption goods," Finance Research Center Memorandum No, 83, Princeton University.

Gustmann, A., and T. Steinmeier. 1983. "Minimum Hours Constraints and Retirement Behavior," Contemporary Policy Issues, a supplement to Economic Enquiry, 3:77-91.

_____. 1984. "Partial Retirement and the Analysis of Retirement Behavior," Industrial and Labor Relations Review, 37(3):403-415.

Guthrie, Harold W. (1965) "Who Moonlights and Why," Illinois Business Review, March

1965, Vol. 22, pp: 6-8.

Guthrie, Harold W. (1969) "Teachers in the Moonlight" Monthly Labor Review, February 1969, Vol. 92, pp. 28-31.

Ham, J. 1979. "Rationing and the Supply of Labor: An Econometric Approach," Industrial Relations Section Working Paper No. 103A. Princeton University. (May).

_____. 1982. "Estimation of a Labor Supply Model with Censoring Due To Unemployment and Underemployment." The Review of Economic Studies. 49(3):335-354.

_____. 1986. "Testing Whether Unemployment Represents Life-Cycle Labor Supply," The Review of Economic Studies. 53(3):559-78.

Hamel, Harvey R. (1967) "Moonlighting - An Economic Phenomenon" Monthly Labor Review, October 1967, Vol. 90, pp. 17-22.

Jovanovic, Boyan. (1979) "Job Matching and the Theory of Turnover," Journal of Political Economy 87, No. 5 (October): 972-990.

Kahn, S., and K. Lang. 1987. "Constraints on the Choice of Work Hours: Agency Versus Specific Capital", NBER working Paper No. 2356. Cambridge.

Katona, G., Strumpel, B., and Zahn, E. *Aspirations and Affluence: Comparative Studies in the U.S. and Western Europe*. New York: McGraw-Hill, 1971.

Krishnan, Pramila "The Economics of Moonlighting: A Double Self-Selection Model" *Review of Economics and Statistics*, 72(2) (May 1990): 361-367.

Moffitt, R. 1984. "The Estimation of a Joint Wage-Hours Labor Supply Model." Journal of Labor Economics, 2(4): 550-66.

Morgan, James N., Greg J. Duncan, Martha S. Hill, and James Lepkowski, Panel Study of Income Dynamics, 1968-1989 [Waves I-XXII] [Computer file]. Ann Arbor, MI: Survey Research Center [Producer], 1992. Ann Arbor, MI: Inter-university Consortium for Political and Social Research [Distributor], 1992.

Moses, Leon N., (1962) "Income, Leisure, and Wage Pressure" The Economic Journal, Vol. 72, no. 286, June 1962, pp: 320-334

Paxson, Christina H. and Sicherman, Nachum "The Dynamics of Job Mobility and Dual-Job Holding" Working paper # FB-92-04, First Boston Working Paper Series, Columbia University, January, 1992.

Perlman, Richard, (1969) *Labor Theory*, John Wiley & Sons, New York.

Scarf, H. (1960) "The Optimality of (S,s) policies in the dynamic inventory problem," in Mathematical Methods in the Social Sciences, 1959, eds. Kenneth J. Arrow, Samuel Karlin and Patrick Suppes. Stanford University Press

Shishko, Robert, and Bernard Rostker, (1976) "The Economics of Multiple Job Holding," The American Economic Review, June 1976, pp: 298-308.

Siow, A. 1987. "The Use of Wages in Coordinating Hours of Work", unpublished paper, Columbia University.

Stinson, John F., Jr. (1986) "Moonlighting by Women Jumped to Record Highs," Monthly Labor Review, November 1986, pp. 22-25.

Taylor, Daniel E., and Edward S. Sekscenski (1982) "Workers on Long Schedules, Single and Multiple Jobholders," Monthly Labor Review, May 1982, pp. 47-53.

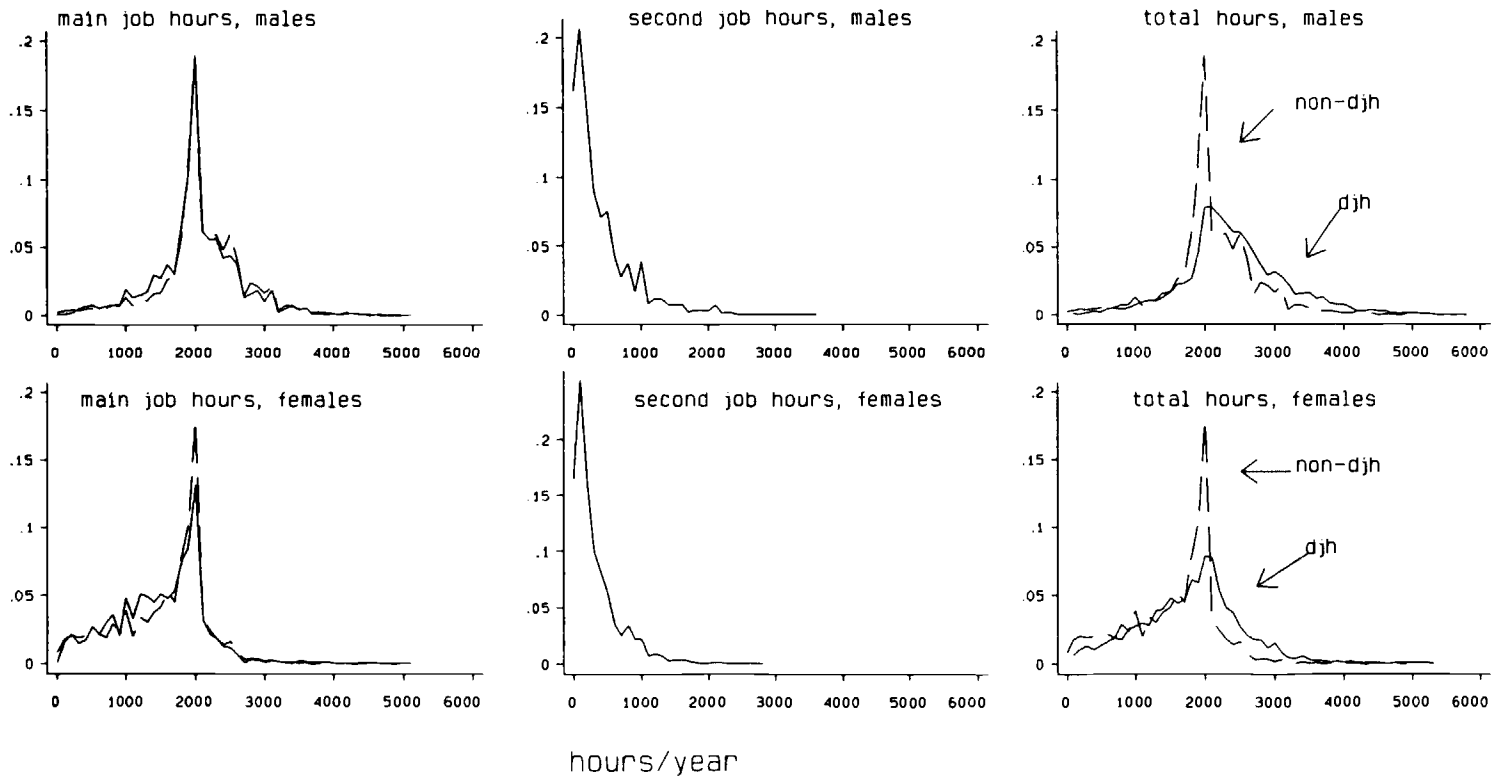

Figure 1: Distributions of annual hours

Table 1
Rates of Dual Job Holding Over Time
PSID and CPS

Year	PSID Including Army Males	PSID Including Army Females	PSID Excluding Army Males	PSID Excluding Army Females	CPS Males	CPS Females
76	.229	.110	.218	.109	5.8	2.6
77	.208	.141	.196	.141	6.2	3.4
78	.214	.149	.209	.149	5.8	3.3
79	.223	.098	.212	.097	5.9	3.5
80	.210	.098	.200	.096	5.8	3.8
81	.229	.116	.217	.112		
82	.230	.114	.216	.112		
83	.230	.114	.213	.111		
84	.202	.131	.197	.124		
85	.205	.148	.187	.135	5.9	4.7
86	.203	.137	.180	.126		
87	.204	.134	.185	.123		
88	.181	.110	.164	.099		
89	.197	.130	.180	.117	6.4	5.9
91					6.4	5.9
76-91	.211	.122	.197	.115		

The PSID sample includes heads of household and spouses, and reports the rate of dual job holding in the prior calendar year. The poverty sub-sample is excluded. The CPS sample include all employed individuals, and reports rates over the week prior to the survey. For details, see News Bulletin, Bureau of Labor Statistics, USDL 91-547, October, 1991.

Table 2
"Weekly"* Rates of Dual-Job Holding by Main Job Occupation
PSID, heads of households and spouses, 1976-89
(Excluding the Poverty Sub-sample)

	Males		Females	
	Freq.	Rate	Freq.	Rate
1. Physicians, dentists	238	.105	26	.227
2. Other medical and paramedical	206	.216	1030	.056
3. Accountants and auditors	491	.093	240	.046
4. Teachers, primary and secondary school	603	.210	1832	.071
5. Teacher(college), social sci., librarians	405	.149	368	.100
6. Architects, engineers, scientists	1474	.061	94	.057
7. Technicians	1368	.088	759	.048
8. Public advisors	542	.101	485	.046
9. Judges, lawyers	351	.102	60	.036
10. Professional, technical & kindred not above	354	.187	344	.111
11. Managers, non-farm, not self-employed	4355	.079	1918	.043
12. Managers, non-farm, self-employed	1620	.090	417	.044
13. Secretaries, stenographers, typists	28	.099	2550	.035
14. Other clerical workers	1383	.110	5182	.039
15. Sales workers	1044	.075	827	.034
16. Foremen	828	.064	52	.051
17. Other craftsmen & kindred worker	5914	.081	296	.040
18. Govt (fire, police, marshals & constables)	515	.159	68	.069
19. Member of armed forces	611	.067	75	.017
20. Transport equipment operatives	1750	.066	197	.055
21. Operatives, except transport	3059	.087	2331	.023
22. Unskilled laborers (nonfarm)	1291	.072	186	.034
23. Farm laborers and foremen	375	.095	64	.041
24. Private household workers	3	.000	358	.040
25. Other service workers	1121	.084	4292	.043
26. Farmers (owner & tenant) & managers	901	.139	46	.036
Total	30830	.090	24098	.044

* We use this measure in order to compare the rates of Dual Job Holding in the PSID to those in the CPS, where people were asked whether they had more than one job **last week**. We obtain this measure by dividing weeks of work (last year) in second (and third, when available) jobs, by 52 minus weeks of unemployment last year.

Table 3
Rate of Dual-Job Holding and 2nd Job Occupations by Main Job Occupation (PSID, heads of households and spouses, 1976-89)

Males

Occupational Category	OBS	%DJH	Same Occ.	Other Occupations			
1. Physicians, dentists	238	.246	.842	11	.070	10	.053
2. Other medical and paramedical	206	.332	.403	8	.224	26	.119
3. Accountants and auditors	491	.230	.559	11	.135	19	.090
4. Teachers, primary and secondary school	603	.517	.235	17	.156	10	.113
5. Teacher(college), social sci., librarians	405	.457	.293	10	.232	6	.111
6. Architects, engineers, scientists	1474	.152	.225	17	.165	12	.101
7. Technicians	1368	.202	.279	26	.103	11	.077
8. Public advisors	542	.235	.129	10	.202	5	.137
9. Judges, lawyers	351	.237	.378	15	.232	10	.159
10. Professional, technical & kindred not above	354	.371	.279	4	.109	5	.101
11. Managers, non-farm, not self-employed	4355	.176	.128	15	.119	17	.106
12. Managers, non-farm, self-employed	1620	.186	.122	26	.190	11	.160
13. Secretaries, stenographers, typists	28	.179	.200	10	.400	3	.200
14. Other clerical workers	1383	.206	.075	25	.175	10	.118
15. Sales workers	1044	.177	.193	11	.122	10	.111
16. Foremen	828	.166	.000	17	.256	26	.222
17. Other craftsmen & kindred worker	5914	.210	.410	26	.106	25	.057
18. Govt (fire, police, marshals & constables)	515	.326	.074	25	.228	19	.142
19. Member of armed forces	611	.176	.066	17	.160	25	.141
20. Transport equipment operatives	1750	.165	.168	17	.186	22	.118
21. Operatives, except transport	3059	.184	.077	17	.183	25	.115
22. Unskilled laborers (nonfarm)	1291	.203	.227	25	.141	17	.129
23. Farm laborers and foremen	375	.243	.189	17	.211	26	.200
24. Private household workers	3	.333	.000	12	1.00		
25. Other service workers	1121	.213	.203	17	.198	22	.129
26. Farmers (owner & tenant) & managers	901	.325	.096	17	.186	15	.139
Total	30830	0.211	.223				

The sample includes heads of households and spouses. The poverty sub-sample is excluded. Results where the poverty sub-sample is included are available upon request.

OBS = number of person*years
%DJH= % of observations in which individuals reported holding a second job in the year before the survey.
Same Occ= % of dual-job holders with the same 2-digit second and main job occupation codes.
Other occ.= Occupational code and % of dual job holders in the most frequent occupation of 2nd job (beside same job).

(Table 3, cont.)

Females

Occupational Category	OBS	%DJH	Same Occ.	Other Occupations			
1. Physicians, dentists	26	.308	1.00	0			
2. Other medical and paramedical	1030	.142	.466	25	.115	19	.107
3. Accountants and auditors	240	.125	.393	14	.286	25	.107
4. Teachers, primary and secondary school	1832	.202	.315	10	.110	14	.098
5. Teacher(college), social sci., librarians	368	.275	.258	10	.138	4	.112
6. Architects, engineers, scientists	94	.143	.083	10	.250	2	.167
7. Technicians	759	.132	.322	25	.144	15	.122
8. Public advisors	485	.143	.125	4	.156	10	.156
9. Judges, lawyers	60	.123	1.00	0			
10. Professional, technical & kindred not above	344	.299	.255	4	.160	15	.128
11. Managers, non-farm, not self-employed	1918	.099	.059	14	.196	15	.149
12. Managers, non-farm, self-employed	417	.132	.102	15	.184	25	.102
13. Secretaries, stenographers, typists	2550	.106	.221	14	.186	25	.160
14. Other clerical workers	5182	.098	.259	25	.227	15	.155
15. Sales workers	827	.132	.238	14	.190	25	.191
16. Foremen	52	.146	.000	14	.286	15	.286
17. Other craftsmen & kindred worker	296	.124	.118	14	.265	21	.177
18. Govt (fire, police, marshals & constables)	68	.185	.182	25	.455	17	.182
19. Member of armed forces	75	.056	.000	10	.333	20	.333
20. Transport equipment operatives	197	.174	.069	21	.276	25	.207
21. Operatives, except transport	2331	.062	.149	25	.422	14	.116
22. Unskilled laborers (nonfarm)	186	.086	.000	25	.357	4	.143
23. Farm laborers and foremen	64	.167	.250	21	.375	4	.125
24. Private household workers	358	.120	.256	25	.256	15	.103
25. Other service workers	4292	.124	.462	15	.115	21	.090
26. Farmers (owner & tenant) & managers	46	.171	.000	15	.333	7	.167
Total	24098	.122	.284				

Table 4
Rates of Dual Job Holding (over last week) & Other Occupations Held*
by Main Job Occupation
May 91 CPS, Heads of Household and Spouses
(Using Supplement Weights)

Males

	Occupations	Obs.	Rate	Same Occ.	Other Occupations			
1	Administrators & Officials, Public Administrators	191	.112	.000	34	.230	2	.199
2	Other Executives, Administrators, & Managers	3768	.066	.121	12	.172	43	.118
3	Management Related Occupations	1051	.068	.182	2	.141	19	.078
4	Engineers	934	.053	.144	33	.148	2	.140
5	Mathematical & Computer Scientists	309	.088	.311	15	.168	9	.145
6	Natural Scientists	174	.044	.501	10	.239	43	.130
7	Health Diagnosing Occupations	386	.093	.492	43	.148	19	.118
8	Health Assessment & Treating Occupations	146	.121	.264	12	.181	43	.121
9	Teachers, College & University	251	.197	.080	12	.310	3	.140
10	Teachers, except College & University	606	.193	.199	12	.164	2	.078
11	Lawyers & Judges	363	.054	.263	9	.184	12	.139
12	Other Professional Specialty Occupations	1057	.101	.407	9	.095	2	.077
13	Health Technicians	98	.144	.252	15	.143	2	.138
14	Engineering & Science Technicians	468	.086	.150	33	.127	12	.114
15	Technicians not health, Engineering & Science	338	.088	.169	12	.189	19	.105
16	Supervisors & Proprietors, Sales Occupations	1352	.049	.126	2	.118	43	.115
17	Sales Representatives, Finance & Business Service	721	.048	.219	12	.327	2	.167
18	Sales Representatives, Commodities, not Retail	671	.059	.171	12	.135	19	.133
19	Sales, Retail & Personal Services	729	.057	.138	26	.128	18	.104
20	Sales Related Occupations	18	.038	.000	29	.556	17	.444
21	Supervisors, Administrative Support	160	.074	.000	16	.214	5	.177
22	Computer Equipment Operators	125	.096	.000	19	.297	43	.183
23	Secretaries, Stenographers & Typists	28	.171	.000	44	.340	9	.292
24	Financial Records, Processing Occupations	107	.099	.000	26	.187	12	.186
25	Mail & Message Distributing	278	.085	.000	19	.144	33	.133
26	Other Administrative Support & Clerical	904	.082	.106	12	.151	19	.124
27	Private Household Service	12	.000	.				
28	Protective Service Occupations	876	.144	.323	2	.095	34	.075
29	Food Service Occupations	523	.060	.350	19	.197	33	.071
30	Health Service Occupations	99	.169	.122	44	.212	38	.136
31	Cleaning & Building Service Occupations	819	.065	.300	28	.097	43	.079
32	Personal Service Occupations	216	.080	.114	19	.282	10	.144
33	Mechanics & Repairers	2180	.053	.181	43	.197	31	.081
34	Construction Trades	2530	.054	.248	43	.158	2	.100
35	Other Precision Production Occupations	1612	.055	.067	43	.115	2	.110
36	Machine Operators & Tenders, not Precision	1364	.058	.036	43	.138	33	.110
37	Fabricators, Assemblers Inspectors & Samplers	793	.041	.044	43	.244	42	.131
38	Motor Vehicle Operators	1673	.060	.144	34	.111	19	.103
39	Other Transportation & Material Moving	646	.052	.068	43	.297	33	.157
40	Construction Laborer	331	.044	.090	44	.279	43	.243
41	Freight, Stock & Material Handlers	415	.106	.084	43	.136	12	.110
42	Other Handler Equipment Cleaners & Laborers	643	.053	.055	10	.099	17	.098
43	Farm Operators & Managers	752	.061	.043	38	.280	44	.100
44	Farm Workers & Related Occupations	681	.061	.069	43	.402	34	.139
45	Forestry & Fishing Occupations	107	.061	.000	44	.493	1	.194
46	Armed Forces, Currently Civilian	9	.	.				
47	Total	31514	.070	.1720				

* See footnotes to Table 1.

Females

	Occupations	Obs.	Rate	Same Occ.	Other Occupations			
1	Administrators & Officials, Public Administrators	158	.081	.000	12	.333	10	.175
2	Other Executives, Administrators, & Managers	2147	.059	.079	19	.146	24	.108
3	Management Related Occupations	1069	.057	.223	19	.185	17	.062
4	Engineers	67	.068	.000	12	.856	19	.146
5	Mathematical & Computer Scientists	180	.037	.000	9	.306	19	.283
6	Natural Scientists	64	.063	.224	19	.560	9	.216
7	Health Diagnosing Occupations	79	.090	.809	9	.191		
8	Health Assessment & Treating Occupations	1162	.089	.636	30	.077	10	.071
9	Teachers, College & University	157	.131	.265	12	.223	3	.142
10	Teachers, except College & University	1788	.069	.279	12	.201	19	.093
11	Lawyers & Judges	96	.000	.				
12	Other Professional Specialty Occupations	1152	.096	.377	9	.098	19	.067
13	Health Technicians	640	.093	.528	19	.133	30	.066
14	Engineering & Science Technicians	155	.042	.000	38	.361	44	.247
15	Technicians not health, Engineering & Science	232	.021	.000	3	.363	19	.236
16	Supervisors & Proprietors, Sales Occupations	705	.039	.000	19	.342	29	.124
17	Sales Representatives, Finance & Business Service	512	.043	.098	12	.207	19	.190
18	Sales Representatives, Commodities, not Retail	179	.045	.000	8	.391	32	.236
19	Sales, Retail & Personal Services	1798	.066	.209	2	.096	12	.080
20	Sales Related Occupations	31	.042	.000	19	.775	36	.225
21	Supervisors, Administrative Support	248	.056	.000	19	.518	23	.234
22	Computer Equipment Operators	224	.073	.094	19	.370	31	.128
23	Secretaries, Stenographers & Typists	2427	.055	.138	19	.252	26	.110
24	Financial Records, Processing Occupations	1247	.062	.298	19	.290	29	.068
25	Mail & Message Distributing	179	.085	.085	19	.225	24	.177
26	Other Administrative Support & Clerical	3487	.062	.206	19	.180	29	.112
27	Private Household Service	298	.068	.057	19	.299	31	.216
28	Protective Service Occupations	127	.075	.000	31	.307	19	.279
29	Food Service Occupations	1467	.053	.210	19	.244	43	.082
30	Health Service Occupations	988	.066	.398	31	.126	27	.104
31	Cleaning & Building Service Occupations	729	.047	.369	19	.144	32	.105
32	Personal Service Occupations	1099	.060	.168	19	.196	29	.132
33	Mechanics & Repairers	75	.007	.000	2	1.000		
34	Construction Trades	56	.003	.000	19	1.000		
35	Other Precision Production Occupations	483	.046	.108	19	.241	16	.201
36	Machine Operators & Tenders, not Precision	1125	.039	.028	19	.212	29	.168
37	Fabricators, Assemblers Inspectors & Samplers	599	.037	.000	19	.288	43	.171
38	Motor Vehicle Operators	230	.062	.000	19	.410	43	.155
39	Other Transportation & Material Moving	33	.000	.				
40	Construction Laborer	9	.000	.				
41	Freight, Stock & Material Handlers	142	.030	.000	37	.538	26	.342
42	Other Handler Equipment Cleaners & Laborers	277	.054	.000	29	.235	19	.230
43	Farm Operators & Managers	145	.078	.000	26	.275	23	.199
44	Farm Workers & Related Occupations	222	.071	.179	43	.349	26	.122
45	Forestry & Fishing Occupations	5	.000	.				
46	Armed Forces, Currently Civilian	4	.	.				
47	Total	28296	.061	.233				

Table 5
Wages on Second Job, relative to Wages on Main Job
by 2 digit Occupational Classification
PSID 76-89, Heads of Households and Spouses
(Excluding the Poverty Sub-sample)

Occupation	Males Obs.	Mean	Median	Females Obs.	Mean	Median
1. Physicians, dentists	42	2.495	1.781	7	2.579	2.310
2. Other medical and paramedical	52	1.153	0.996	91	1.491	1.115
3. Accountants and auditors	84	2.010	1.381	17	1.770	1.178
4. Teachers, primary and secondary school	246	0.922	0.751	210	1.068	0.876
5. Teacher(college), social sci., librarians	140	1.683	1.293	55	1.183	1.051
6. Architects, engineers, scientists	153	1.618	1.127	6	0.846	0.607
7. Technicians	206	1.626	1.072	67	1.464	1.132
8. Public advisors	88	2.072	1.233	40	1.859	1.027
9. Judges, lawyers	56	2.726	1.648	6	4.801	4.728
10. Professional, technical & kindred not above	106	1.569	1.203	53	3.348	1.280
11. Managers, non-farm, not self-employed	474	1.510	0.992	112	1.463	0.928
12. Managers, non-farm, self-employed	189	3.615	1.807	16	4.198	1.593
13. Secretaries, stenographers, typists	5	1.078	0.897	153	1.571	0.956
14. Other clerical workers	207	1.475	0.802	289	1.334	0.995
15. Sales workers	108	2.196	1.167	36	1.799	0.973
16. Foremen	86	1.395	1.012	5	0.742	0.704
17. Other craftsmen & kindred worker	856	1.527	1.071	22	1.321	0.847
18. Govt (fire, police, marshals & constables)	143	0.982	0.905	6	2.199	1.094
19. Member of armed forces	85	1.373	0.886	3	3.475	1.365
20. Transport equipment operatives	208	1.445	0.991	18	1.065	0.910
21. Operatives, except transport	396	1.281	0.863	86	1.432	0.825
22. Unskilled laborers (nonfarm)	200	1.772	1.115	10	1.988	1.200
23. Farm laborers and foremen	52	1.779	1.212	5	1.953	1.814
24. Private household workers	1	1.799	1.799	31	2.230	1.204
25. Other service workers	177	1.561	1.091	269	1.460	1.074
26. Farmers (owner & tenant) & managers	200	6.517	2.350	4	3.636	1.361
27. All*	4724	1.839	1.050	1716	1.715	1.005

* "All" include 164 cases for men and 99 cases for women in which the main job occupation code is missing.

Wage on second job is the pay per hour, on average, on the first extra job, in the previous calendar year. Wage on the main job is the labor income in the previous calendar year, divided by total hours of work. Labor income includes income from: 1)labor part of farm income, 2) labor part of business income, 3) wages income, 4) bonuses, overtime, commissions, 5) income from professional practice or trade, 6) labor part of market gardening income, and 7) labor part of roomers and boarders income. This variable is constructed by the PSID. For more detail, see PSID Code books. We also calculated this table using the hourly wage reported at the time of the previous survey. The estimates are lower, with total means and medians of 1.528 and .972 for men, and 1.403 and .947 for women.

Table 6
Wage on Second Job Relative to Wage on Main Job
May 91 CPS, Heads of Household and Spouses
(Using Supplement Weights)

	Occupations	Men			Women		
		Obs.	Mean	Median	Obs.	Mean	Median
1	Administrators & Officials, Public Administrators	1	2.500	2.500	1	0.400	0.400
2	Other Executives, Administrators, & Managers	26	1.181	0.805	13	1.520	1.067
3	Management Related Occupations	11	0.994	0.893	8	1.755	1.315
4	Engineers	10	1.196	0.953	0	.	.
5	Mathematical & Computer Scientists	5	2.149	2.500	3	1.303	0.840
6	Natural Scientists	2	1.969	1.372	2	0.463	0.761
7	Health Diagnosing Occupations	1	0.780	0.780	0	.	.
8	Health Assessment & Treating Occupations	3	0.581	0.952	21	0.973	0.906
9	Teachers, College & University	5	2.271	1.584	4	1.813	1.478
10	Teachers, except College & University	20	0.854	0.739	17	1.117	1.067
11	Lawyers & Judges	2	0.448	0.368	0	.	.
12	Other Professional Specialty Occupations	18	2.410	1.143	11	1.193	0.833
13	Health Technicians	1	1.185	1.185	10	1.036	0.978
14	Engineering & Science Technicians	5	0.890	0.829	0	.	.
15	Technicians not health, Engineering & Science	2	0.329	0.545	3	0.549	0.314
16	Supervisors & Proprietors, Sales Occupations	7	2.893	0.887	2	0.500	0.536
17	Sales Representatives, Finance & Business Service	4	0.948	0.950	0	.	.
18	Sales Representatives, Commodities, not Retail	5	0.871	0.867	1	1.667	1.667
19	Sales, Retail & Personal Services	11	1.927	2.174	15	1.358	1.083
20	Sales Related Occupations	0	.	.	0	.	.
21	Supervisors, Administrative Support	1	0.755	0.755	1	0.600	0.600
22	Computer Equipment Operators	2	2.019	2.222	6	0.836	0.884
23	Secretaries, Stenographers & Typists	1	0.215	0.215	22	1.293	0.932
24	Financial Records, Processing Occupations	1	0.516	0.516	12	0.982	0.811
25	Mail & Message Distributing	2	1.020	0.999	2	1.257	1.347
26	Other Administrative Support & Clerical	11	0.670	0.694	36	0.898	0.722
27	Private Household Service	21	1.048	1.000	2	0.438	0.720
28	Protective Service Occupations	11	1.771	1.000	1	0.778	0.778
29	Food Service Occupations	5	1.098	0.750	9	1.437	1.350
30	Health Service Occupations	7	0.799	0.775	6	0.677	0.695
31	Cleaning & Building Service Occupations	0	.	.	7	1.117	0.933
32	Personal Service Occupations	12	1.130	1.159	10	1.167	0.960
33	Mechanics & Repairers	19	1.000	0.909	0	.	.
34	Construction Trades	11	0.642	0.522	0	.	.
35	Other Precision Production Occupations	13	0.801	0.694	5	0.702	0.491
36	Machine Operators & Tenders, not Precision	5	0.737	0.609	8	1.658	1.213
37	Fabricators, Assemblers Inspectors & Samplers	14	0.874	0.667	2	0.936	0.854
38	Motor Vehicle Operators	3	0.733	0.875	1	0.909	0.909
39	Other Transportation & Material Moving	2	0.570	0.525	0	.	.
40	Construction Laborer	9	0.888	0.594	0	.	.
41	Freight, Stock & Material Handlers	1	1.000	1.000	1	0.521	0.521
42	Other Handler Equipment Cleaners & Laborers	0	.	.	2	0.865	1.026
43	Farm Operators & Managers	8	2.021	1.953	0	.	.
44	Farm Workers & Related Occupations	0	.	.	0	.	.
45	Forestry & Fishing Occupations	0	.		0	.	.
46	Armed Forces, Currently Civilian	0	.		0	.	.
47	Total	298	1.205	.871	244	1.135	.959

Wages are calculated as weekly earning divided by weekly hours of work. Out of 1949 males who had a second job and were either heads or spouses of household, only 298 had all information required to be included in the table. For women the numbers are 1553 and 244, respectively.

Table 7
Dual-Job Holding Over Time and Job Mobility

1. Males who worked in all years from 1976 to 1989 (Sample: 1017 people)

Number of years in a second job	Obs	(% of sample)	Annual Hours Mean	Annual Hours CV	Sepn Rate	# Spells of Second Jobs (% of Row) 1	2	3+
0	362	(35.6)	2214.6	13.7	.064	.	.	.
1	149	(14.7)	2233.6	17.0	.108	100.0	.	.
2	99	(9.7)	2367.3	17.7	.118	44.4	55.6	.
3	61	(6.0)	2406.1	18.9	.146	29.5	57.4	13.1
4	58	(5.7)	2424.7	18.6	.115	32.8	36.2	31.0
5	48	(4.7)	2356.2	20.2	.138	16.7	43.8	39.5
6	35	(3.4)	2308.4	19.8	.159	14.3	28.6	57.1
7	35	(3.4)	2446.3	23.2	.139	8.6	42.9	48.5
8	43	(4.2)	2389.1	21.6	.123	23.3	30.2	46.5
9	22	(2.2)	2357.3	18.7	.152	45.5	27.3	27.2
10	26	(2.6)	2478.4	17.2	.047	30.8	42.3	26.9
11	22	(2.2)	2491.5	17.3	.062	27.3	50.0	22.7
12	23	(2.3)	2591.5	17.6	.071	43.5	39.1	17.4
13	14	(1.4)	2422.1	22.9	.071	42.9	57.1	.
14	20	(2.0)	2786.6	16.3	.050	100.0	.	.

2. Females who worked in all years from 1979 to 1989 (Sample: 627 people)

Number of years in a second job	Obs	(% of sample)	Annual Hours Mean	Annual Hours CV	Sepn Rate	# Spells of Second Jobs (% of Row) 1	2	3+
0	359	(57.3)	1753.4	16.9	.074	.	.	.
1	98	(15.6)	1780.4	21.8	.120	100.0	.	.
2	45	(7.2)	1780.5	26.7	.194	62.2	37.8	.
3	32	(5.1)	1868.8	19.6	.148	43.8	46.9	9.4
4	26	(4.2)	1881.8	25.0	.164	7.7	50.0	42.3
5	11	(1.8)	1917.2	23.0	.116	27.3	54.6	18.2
6+	56	(8.9)	1891.6	25.8	.162	37.5	33.9	28.6

Note: The samples consists of individuals who worked positive hours in each year between 1976 and 1989 (males) and 1979 to 1989 (females). Individuals could have experienced spells of unemployment or spells out of the labor force. The number of years in a second job is the number of years from 1976-1989 that the person reported at least one job in addition to his or her main job or jobs. The number of spells of second jobs is the number of groups of contiguous years in which the individual was a dual-job holder. The data do not indicate whether individuals changed their second jobs, so a single spell of dual-job holding could consist of several dual jobs held contiguously. The mean and CV of hours is the average, over all individuals, of each person's mean and coefficient of variation of total annual hours over the sample period. Sepn Rate is the mean, over all individuals, of each person's separation rate from his or her main job. Information on tenure and separation in the PSID is problematic (see Brown and Light, 1992). Details of how we constructed these variables to ensure reliability and consistency of the data are available upon request.

Table 8
Hours of Work and Dual-Job Holding

Males - Hours Levels

	Dual-job Holders (obs=5307)			Non-dual job holders (obs=25413)
	Main job	Second job	Total	Main job
Annual Hours, Median	2000.0	240.0	2336.0	2040.0
Annual Hours, Mean	2013.5	405.9	2419.4	2099.1
Annual Hours, Std. Deviation	606.2	467.4	749.2	631.2
Hours/Week, Median	40.0	15.0		42.0
Hours/Week, Mean	43.5	17.9		45.3
Hours/Week, Std. Deviation	10.7	17.9		10.7
Weeks/Year, Median	49.0	19.0		49.0
Weeks/Year, Mean	46.1	24.6		46.1
Weeks/Year, Std. Deviation	7.4	18.8		8.0

Females - Hours Levels

	Dual-job Holders (obs=2142)			Non-dual job holders (obs=18289)
	Main job	Second job	Total	Main job
Annual Hours, Median	1575.0	192.0	1852.0	1739.0
Annual Hours, Mean	1488.0	314.7	1802.7	1540.6
Annual Hours, Std. Deviation	649.5	344.3	748.9	659.1
Hours/Week, Median	37.0	12.0	.	40.0
Hours/Week, Mean	34.0	15.6	.	36.0
Hours/Week, Std. Deviation	12.5	12.7	.	11.3
Weeks/Year, Median	48.0	17.0	.	48.0
Weeks/Year, Mean	43.4	22.7	.	42.1
Weeks/Year, Std. Deviation	9.5	17.7	.	11.8

Notes: The sample consists of heads or spouses who were not in the poverty subsample, had positive work hours in the survey year and nonmissing information on dual-job-holding status and second-job hours. Data for females are drawn from 1979-1989 only. The definition of hours/week and weeks/year on the second job changes slightly between 1983 and 1984. Up to 1983, dual-job holders who had more than one second job were not asked separate questions about hours on each second job, and for these workers reported second-job hours presumably reflect an aggregation across all second jobs. After 1983, workers were asked about hours/week and weeks/year on up to two second jobs, but since they were not asked whether multiple second jobs were held simultaneously or sequentially it is not possible to compute hours/week and weeks/year for all second jobs (although second-job annual hours can be constructed.) For these later years, second-job hours/week and weeks/year refers to time spent on the first second-job reported.

Table 9
Hours Change and Transitions into and out of Dual-Job Holding

Males

		$DJH_{t-1}=0$ $DJH_t=0$	$DJH_{t-1}=0$ $DJH_t=1$	$DJH_{t-1}=1$ $DJH_t=0$	$DJH_{t-1}=1$ $DJH_t=1$
ΔAnnual Hours,	Median	0	0	35	0
Main Job	Mean	12.8	-8.0	78.8	23.3
	Std. Dev.	508.6	632.3	599.6	488.9
ΔAnnual Hours,	Median	.	160	-160	0
Second Job	Mean	.	302.1	-306.1	11.36
	Std. Dev.	.	383.4	386.2	448.9
ΔAnnual Hours,	Median	0	200	-155	10
Total	Mean	12.8	294.1	-227.4	34.7
	Std.Dev.	508.6	704.4	691.6	634.3
ΔHours/Week,	Median	0	0	0	0
Main Job	Mean	.1	-.6	1.1	.2
	Std.Dev.	8.3	10.5	10.2	8.9
ΔHours/Week,	Median	.	14	-15	0
Second Job	Mean	.	17.7	-18.6	-.2
	Std.Dev.	.	15.0	15.5	14.7
ΔWeeks/Year,	Median	0	0	0	0
Main Job	Mean	.2	.6	.6	.3
	Std.Dev.	7.7	9.6	9.1	6.8
ΔWeeks/Year,	Median	.	12	-12	0
Second Job	Mean	.	19.4	-18.8	.6
	Std.Dev.	.	17.4	17.1	17.8
Observations		19,604	1,584	1,695	2,560

Notes: For details, see notes to Table 8.

Table 9 - cont.

Females

		$DJH_{t-1}=0$ $DJH_t=0$	$DJH_{t-1}=0$ $DJH_t=1$	$DJH_{t-1}=1$ $DJH_t=0$	$DJH_{t-1}=1$ $DJH_t=1$
ΔAnnual Hours,	Median	0	0	30	0
Main Job	Mean	37.3	46.9	65.3	56.8
	Std. Dev.	510.0	608.3	571.5	492.6
ΔAnnual Hours,	Median	.	156	-160	0
Second Job	Mean	.	275.8	-274.1	18.7
	Std. Dev.	.	330.3	323.9	386.9
ΔAnnual Hours,	Median	0.0	205.0	-155.0	34.0
Total	Mean	37.3	322.7	-208.8	75.5
	Std.Dev.	510.0	683.8	645.4	602.2
ΔHours/Week,	Median	0.0	0.0	0.0	0.0
Main Job	Mean	.3	-.7	1.4	.8
	Std.Dev.	7.7	11.3	10.5	9.3
ΔHours/Week,	Median	.	13.0	-14.0	0.0
Second Job	Mean	.	15.9	-16.0	-.4
	Std.Dev.	.	12.7	12.3	12.7
ΔWeeks/Year,	Median	0.0	0.0	0.0	0.0
Main Job	Mean	.8	2.4	-.1	.8
	Std.Dev.	11.4	11.6	11.6	8.6
ΔWeeks/Year,	Median	.	13.0	-13.0	0.0
Second Job	Mean	.	19.3	-19.4	1.2
	Std.Dev.	.	16.4	16.7	19.1
Observations		13,201	827	857	794

Table 10
Hours Constraints, Quits, and Transitions into Second Jobs
Multinomial Logit Estimation Results
(Estimated Coefficients and marginal probabilities, standard errors in parentheses)

Variable	quit to higher hours (1)		quit to lower hours (2)		2nd job at lower wage (3)		2nd job at higher wage (4)		No Quit No 2nd job. (5)	Sample Means (6)
Panel 1: Full Sample (15251 observations; Log Likelihood=-6743)										
Age	-.0558	-.0011	-.0860	-.0012	-.0087	-.0002	-.0015	.0000	.0025	39.8
	(.0392)		(.0433)		(.0363)		(.0334)			
Age^2	.0002	.0000	.0006	.0000	-.0004	-.0000	-.0002	-.0000	.0000	
	(.0005)		(.0005)		(.0004)		(.0004)			
Tenure	-.1549	.0032	-.1304	-.0018	-.0101	-.0001	-.0170	-.0003	.0054	7.7
	(.0375)		(.0373)		(.0261)		(.0308)			
Tenure^2	.0023	.0000	.0035	.0000	.0008	.0000	-.0023	-.0001	-.0000	
	(.0021)		(.0017)		(.0011)		(.0016)			
Schooling	.0651	.0012	-.0111	-.0002	.0990	.0028	.0812	.0021	-.0059	12.3
	(.0226)		(.0256)		(.0190)		(.0187)			
Up	**.0445**	**.0007**	**-.2740**	**-.0041**	**.3636**	**.0109**	**.0423**	**.0009**	**-.0084**	**.236**
	(.1353)		**(.1752)**		**(.1081)**		**(.1199)**			
Low	**.2391**	**.0054**	**.5313**	**.0079**	**-.7691**	**-.0232**	**-.0842**	**-.0020**	**.0119**	**.055**
	(.2336)		**(.2416)**		**(.3096)**		**(.2295)**			
Constant	-2.0639	-.0381	-1.1661	-.0127	-3.7790	-.1072	-3.8663	-.1012	.2592	
	(.7265)		(.8338)		(.6763)		(.6539)			
Observations	327		221		468		431		13804	
$\hat{P}$	.0260		.0176		.0372		.0343			
Panel 2: Non Salaried in t-2 (observations=8958; Log Likelihood=-3714)										
Age	-.0523	-.0011	-.0090	-.0001	.0261	.0008	-.0095	-.0002	.0007	39.6
	(.0497)		(.0601)		(.0469)		(.0410)			
Age^2	.0001	.0000	.0000	-.0000	-.0008	-.0000	-.0001	-.0000	.0000	
	(.0006)		(.0007)		(.0006)		(.0005)			
Tenure	-.1477	-.0031	-.1563	-.0021	.0083	.0004	-.0548	-.0013	.0060	7.3
	(.0521)		(.0476)		(.0371)		(.0445)			
Tenure^2	.0013	.0000	.0049	.0001	-.0010	-.0000	-.0023	-.0001	-.0000	
	(.0032)		(.0021)		(.0018)		(.0026)			
Schooling	.0366	.0006	-.0617	-.0010	.1050	.0030	.1232	.0031	-.0058	11.3
	(.0319)		(.0364)		(.0273)		(.0268)			
Up	**.0999**	**.0019**	**-.2731**	**-.0040**	**.3769**	**.0110**	**.1447**	**.0035**	**-.0124**	**.308**
	(.1578)		**(.2083)**		**(.1306)**		**(.1446)**			
Low	**.0550**	**.0014**	**.4721**	**.0068**	**-.7215**	**-.0216**	**.2121**	**.0059**	**.0075**	**.046**
	(.3724)		**(.3568)**		**(.4585)**		**(.3068)**			
Constant	-1.6934	-.0301	-1.8757	-.0220	-4.4741	-.0126	-4.1191	-.1029	.2810	
	(.9354)		(1.1671)		(.8830)		(.8271)			
Observations	195		126		271		242		8124	
$\hat{P}$	.0218		.0141		.0302		.0270			

Notes: The basic sample is of male heads of households who: (1) were not dual-job holders in t-2, (2) did not change their main jobs in t or t-2, and (3) were not laid off in t-1. QUIT=1 if a quit occurred in t-1. TAKE 2nd=1 if the individual held a second job in t and did not quit. Hours increases and decreases are based on total annual work hours. Four percent of the sample who quit and did not change hours were included in category 1; putting them in category 2 did not change

the results. "Higher wage" and "Lower wage" refers to whether the second job wage is higher or lower than the main job wage. Observations for which 2nd job wages were missing were excluded. All controls were measured in t-2. Marginal probability is calculated as $\hat{P}_j\left[\beta_j - \sum_k p_k \beta_k\right]$. The coefficients for state #5 (no quits and no dual job holding) are normalized to be zeros.

Construction of "hours constraints" variables: The set of questions in 76-78 is different than that in 79-87 (in 88 and 89 these questions were not asked). These are the questions asked in 76-78:

MRWRK= Was there more work available on (your job/any of your jobs) so that you could have worked more if you had wanted to?
WNTMR= Would you have liked to work more if you could have found more work?
LSWRK= Could you have worked less if you had wanted to?
LSPAY= Would you have preferred to work less even if you had earned less money?

Starting in 1979, the order of the questions is changed and two additional questions are asked. The repeated questions are asked in the following order: MRWRK LSWRK LSPAY WNTMR, followed by the next two new questions:

LS2WRK= Could you have worked less if you wanted to?
LS2PAY= Would you have preferred to work less even if you had earned less money?

We use the above input variables to construct the following variables that we use in the analysis:

1) up= 1=can't work more and wants to, 0=doesn't want to work more, whether one can or not.
2) low= 1=can't work less and wants to, 0=doesn't want to work less, whether one can or not.

Notice that it is not possible to construct values for lower constraints (i.e. want to work less but can't) that are comparable across survey years. Note, also, that before 1979, "low" is problematic: People who said they wanted to work more but couldn't, were never asked whether they wanted to work less and couldn't. We assume that (for these years) such people did not want to work less.