The U.S. Occupational Mobility from 1988 to 2003: Evidence from SIPP*

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Abstract

This paper uses SIPP, an underutilized data set to analyze the occupational mobility in the U.S. from 1988 to 2003. Exploiting SIPP's detailed information on workers' occupation, I propose and calculate various extended versions of occupational mobility rate to do robustness check, with careful treatment of the coding error. Unlike works that treat occupational mobility homogeneously, I classify all occupational switches into three categories: horizontal, vertical and special. Numerous mobility rates are computed according to different definitions, categories, time intervals, and subgroups. I find that, in terms of shares, horizontal switches dominate vertical and special ones at all times; that the mobility level and trend are generally consistent with other empirical works; and that aging decreases the occupational mobility while education's role ambiguous. Moreover, I examine the interaction between occupational mobility and labor market status, taking advantage of SIPP's high interview frequency and rich labor market information recording. I develop an algorithm to extract nonemployment information between jobs from SIPP. I find that most occupational switchers do not experience nonemployment between jobs, very similar to job changers without involving an occupational switch, but the duration variation is less in the former group than in the latter group. As time goes by, the employment-to-employment mobility fraction is declining for both groups.

Keywords: Occupational Mobility, Mobility Rate, Nonemployment

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1 Introduction

The returns to labor market experience have long been a research interest in macro and labor economics. Earlier works (e.g. Mincer (1974)) attach importance to workers' general human capital, mainly education and overall labor market experience. Later writers stress the significance of firm-specific (e.g. Topel (1991)) or industry-specific (e.g. Neal (1995) and Parent (2000)) human capital. Recent studies show that human capital tends to be occupation-specific. For instance, Kambourov and Manovskii (2009b) report that other things being equal, a five-year occupational tenure is linked with a 12% to 20% increase in wages; and if occupational tenure is taken into account, industry or job tenure is of relatively little importance for explaining the wage level.

This new finding is particularly interesting in that the occupation-specific human capital is closely tied with other macroeconomic phenomena. For example, Kambourov and Manovskii (2009a) calibrate a model to match the level and the change of occupational mobility and it accounts quite well for the level and the change of within-group wage inequality. In Kambourov (2009) and Ritter (forthcoming), occupation-specific human capital plays an important role in the context of international trade.

Given that the occupation-specific human capital is important, and that most of the papers mentioned above stress the loss of human capital during the occupational switch process, one question is why workers change occupations, and how they change. Unfortunately, these issues are not very well addressed. Indeed, there is fairly small literature on the occupational mobility. Moreover, most existing models focus on young people's occupation-shopping activities (e.g. Neal (1999)), very few papers study prime age workers' occupational mobility, which is more relevant to the studies aforementioned. This is partly due to the insufficient empirical research on this important issue. Without learning key facts and patterns of workers' occupational mobility, there is little to say about its underlying mechanisms.

In the limited empirical papers, there seem to be two well known facts concerning the U.S. occupational mobility. The first is that its level is considerably high. Vella and Moscarini (2004) report an annual rate of 8% at the 3-digit level based on the CPS March files from 1976 to 2000. Kambourov and Manovskii (2008) use the PSID original and retrospective files from 1968 to 1997 to calculate the occupational mobility per year: 13% at the 1-digit level, 15% at the 2-digit level, and 18% at the 3-digit level. Some differences exist between the two studies. The former includes only individuals employed at both time t and time t-1 in the sample, while the later also covers those who are unemployed in the previous period. More importantly, although devoting much effort to solving the endogeneity problem, the former does not take into account the coding error in occupation data, whereas the latter puts tremendous effort in correcting coding errors using an extra retrospective file, which makes its result more reliable. In this paper, I control the coding error carefully by verifying other relevant variables and find a 3-digit annual mobility rate ranging from 14.26% to 15.22%, which is close to that reported by Kambourov and Manovskii (2008). Moreover, I

break down all the occupational shifts into the ones with human capital destruction and the ones without. It turns out the former category constitutes a dominant share of all occupational switches.

The second fact is that the U.S. occupational mobility increases in the 1990's than in the 1960's. Parrado et al. (2007) find that the fraction of workers who do not change occupations declines from 38.0% in 1969-80 to 36.4% in 1981-92, and this is the case for both male (from 35.6% to 34.0%) and female (from 50.0% to 42.5%). Their results are obtained from PSID 1968-1992, and are not free from coding error. More reliable results come again from Kambourov and Manovskii (2008). They report a significant increase in the U.S. occupational mobility in late 1990's than in late 1960's, from 10% to 15% at the 1-digit level, from 12% to 17% at the 2-digit level, and from 16% to 20% at the 3-digit level. Based on my data and sampling period, I find that the 3-digit yearly mobility rate rises from 10% in early 1990's to 18% in late 1990's and then drops gradually to 13% in early 2000's.

Despite the above consensus, there are still certain key facts not very clear. One interesting issue is the relationship between occupational mobility and labor market status. Nonemployment (unemployment and/or out of labor force) seems important in occupational mobility studies. Markey and Parks (1989), using 1987 CPS, report that the occupational mobility during 1986-87 is 9.9%, among which 12.5% occupational changes are involuntary, and the median unemployment spell for switchers (25 and older) is 7.5 weeks. Ideally data can tell us the pattern of occupational switches: job-job or job-unemployment-job; if the latter, how long the unemployment spell would be.

The data I use is the Survey of Income and Program Participation (SIPP), which is largely underutilized by economists. SIPP is a large panel data set provided by the U.S. Census Bureau. It has several exclusive advantages over other panel data sets. Specifically, it contains rich labor market data (e.g. primary and secondary employers/industries/occupations, starting/ending date of a job, weekly/monthly labor market status, etc.). In addition, it has a high interview frequency design (every 4 months). Given SIPP records two occupations for each worker in each period, I propose and calculate two extended versions of occupational mobility rate to check the robustness of my findings. Moreover, SIPP's high frequency of interviewing and recording enables me to examine, in addition to conventional annual mobility rate, other mobility rates of shorter time intervals, e.g. monthly mobility rate and 4-month mobility rate. Furthermore, I take advantage of SIPP's large sample to look at mobility differences across age-education subgroups. It is found that as age increases, workers' occupational mobility declines. However, the education's impact is ambiguous.

SIPP's two features are also very helpful for me to investigate the nonemployment-related questions mentioned above. These features enable me to observe a worker's occupation affiliation and labor market activity details within a year. Specifically, I investigate the nonemployment duration between two jobs for both occupational switchers and stayers who change jobs. Though available, the duration information is

not easy to extract. I develop a sophisticated algorithm to obtain the nonemployment duration distributions in the units of as fine as weeks. I find that most occupational switchers do not experience nonemployment between jobs, very similar to job changers without involving an occupational switch. However, the duration variation is less in the former group than in the latter group. And as time goes by, the fraction of job-job mobility decreases for both groups.

The rest of paper is organized as follows: Section 2 introduces some background information of SIPP; Section 3 discusses the paper's key concepts concerning occupational mobility; Section 4 computes and analyzes various occupational mobility rates; Section 5 discusses the nonemployment during occupational switches; and I conclude in section 6.

2 Overview of SIPP

SIPP is designed to collect detailed information on income, employment, and participation in the various government transfer programs of the U.S. civilian noninstitutionalized population who are at least 15 years old. Using a two-stage complex sampling method, SIPP selects a nationally representative sample of households. Once a sample is chosen, SIPP tracks all the sample members (even if they move) and interviews them and the individuals who live with them every 4 months. SIPP is administered in panels, and each panel consists of a new sample. Within a SIPP panel, all the sample members are interviewed every 4 months; each round of interview is called a wave. The whole sample is divided into 4 similar size subsamples; each of them is called a rotation group. In each month, only one rotation group is interviewed, with the information collected regarding the previous 4 months. The month when the interview is held is called the interview month, whereas the months on which the information is gathered are called the reference months. Therefore, in a given wave the interview month and the reference months vary chronologically for different rotation groups. Table 1 uses the 1996 Panel as an example to demonstrate the concepts of wave, rotation group and reference month. Initially SIPP plans on starting a new panel of some 20,000 households each year and continuing a panel for 8 waves, or 32 months, but the actual sample size, the starting time and the panel duration vary due to budget constraint and other factors. There are 14 panels so far with the first one the 1984 Panel and the latest one the 2008 Panel. The number of Wave 1 eligible households varies from 12,425 (the 1986 Panel) to 44,200 (the 2004 Panel), and the panel duration varies from 3 waves (the 1989 Panel) to 15 waves (the 2008 Panel). SIPP changes significantly from the 1996 Panel on: it abandons the time-overlapping panel design and increases the panel size as a remedy; it introduces computer-assisted interviewing to improve data consistency; it modifies variable names and variable attributes drastically; and it reforms data editing and imputation procedures. For convenience, I refer to the panels after the 1996 redesign (from the 1996 Panel onwards) as new panels and the previ-

ous panels old panels. SIPP offers 3 kinds of public use files: core wave files, topical module files, and longitudinal research files. Core wave files only contain information on a given wave and are released when that wave is finished. Aside from the core questions asked repetitively in all the waves for a panel, some supplemental questions are asked in each interview. These questions are of different topics and the topic varies across waves. The respondents' answers to the topical questions are summarized in the topical module files. The longitudinal research files contain information on all the waves of a panel and are not available until the interviewing for that whole panel is completed. This paper makes use of only longitudinal research files.

This paper uses data from 7 SIPP panels: Panels 1988, 1990, 1991, 1992, 1996, and 2001.[1] To make my results comparable with Kambourov and Manovskii (2008)'s, I impose similar sample restrictions on the data. That is, the male workers aged 23-61[2], who are not self- or dual-employed and who do not work for the government. My sample restrictions differ from Kambourov and Manovskii (2008)'s in one dimension: I do not require the sampled individuals to be household heads. They employ the restriction simply because only the household heads have occupation affiliation data available in the PSID, while in SIPP every member has this information recorded. Another point worth noting is that, the individuals who constitute my sample must be SIPP respondents who participate in the first wave interview, or the original sample members. As mentioned above, SIPP interviews all the original sample members and the individuals who live with them at the interview time. SIPP drops the latter from the sample once they stop residing with the original sample members. Therefore, these people enter and exit SIPP sample irregularly and their information is discontinuous and incomplete. So I exclude them from my sample. Table 4 lists the starting reference month, the ending reference month, the number of waves, and the number of observations for each of the 7 samples I select.

Compared with the Current Population Survey (CPS), the longitudinal feature of SIPP obviously makes it more appropriate to study workers' occupation-shifting behavior over time. The CPS has its sampled members 4 months in the survey, then 8 months out, and 4 months in again, and finally dropped permanently, which is by nature designed for cross-sectional studies. Moreover, instead of tracing individuals, the CPS chooses to track addresses, which is a more serious problem for investigating individuals' occupational changes. There exist several other longitudinal surveys, but none of them is as suitable as SIPP concerning my study purposes, in a variety of aspects. The Panel Study of Income and Dynamics (PSID), started in 1968, provides much longer panel data than SIPP. But PSID has about only 5,000 households tracked

[1]When the paper's first draft is written, the 1988 Panel is the earliest panel available on SIPP's official web site. And the then latest panel, the 2004 Panel, is still under editing. I don't use the 1989 Panel, because it is very short (3 waves) and the Census Bureau never produces its longitudinal file.

[2]Individuals out of this age range may stay in the sample part of the time. For instance, an individual may be younger than 23 at wave 1, but when he turns 23 in some later wave, he enters into the sample. The same rule applies to individuals who become older than 61 within the panel duration: they exit the sample at the age of 61.

since then, a much smaller sample size than SIPP. Another advantage of SIPP over the PSID is SIPP's higher survey frequency: SIPP interviews sample members every 4 months while the PSID does it annually, making SIPP suffer less recall errors. Finally SIPP data are much richer and detailed than the PSID data (including the job and labor force data interested in this paper), not only because of more frequent recording but also due to its more comprehensive design. The National Longitudinal Survey of Youth (NLSY) targets some particular year born cohorts, who are first interviewed as children or young adults, and is therefore not as representative of the whole U.S. labor market as SIPP.

3 Key Concepts of Occupational Mobility

3.1 Three Types of Occupational Switches

As recommended in Kambourov and Manovskii (2008) and Vella and Moscarini (2004), I focus on the 3-digit level occupational classification. The essential reason is that, compared with its 1-digit and 2-digit level counterparts, 3-digit occupational classification is more relevant to the conveyance or destruction of occupation-specific human capital during the switch process, which I care about in the current research. And SIPP has been adopting the 3-digit level occupational classification since it was started in 1984. SIPP's occupational classification system is almost the same as the 1990 Census of Population classification[3], which in turn is developed from the 1980 Standard Occupational Classification (SOC 1980). The appendix lists the 1990 Census occupational classification system.

Depending on whether there exists destruction of occupation-specific human capital in the switching process, I classify all the occupational switches into two broad categories, based upon the textual description of every occupation title: no-loss switches and loss switches. When talking about no-loss switches, I assume 100% occupation-specific human capital can be transferred from the source occupation to the target one. Generally there are two types of no-loss switches: (1) moving up or down the career ladder and (2) switches between occupations requiring almost the same knowledge and skills. An example of the former type is a promotion from a sales worker to a sales manager. On the other hand, if an individual turns from an economist to an economics professor in college, I regard it as a second type no-loss switch. Specifically, I refer to the first type no-loss switches as vertical switches, and the second type no-loss switches as special switches. At last, all the other switches (loss switches) are called horizontal switches.

[3]There are slight differences between SIPP's classification and the 1990 Census classification. Specifically, 2 occupations in the 1990 Census classification, 003 (legislators) and 016 (postmasters and mail superintendents), do not exist in SIPP's classification; lawyers (178) and judges (179) are distinct occupations in the 1990 Census classification, while they are combined into one occupation, lawyers and judges (178), in SIPP's classification.

I do the following to break down all the possible SIPP occupational switches into 3 classes: vertical, special, and horizontal. Consider the vertical switches first. In practice, I restrict this class of occupational switches only to adjacent up-moving changes, i.e. workers to supervisors, supervisors to managers. Why do I rule out down-moving changes? Since high-level positions generally demand more sophisticated skills than low-level ones, if an individual moves up his or her career ladder, all the knowledge accumulated at the low-level position can serve as the foundation for learning the high-level position skills. However, if moving down, much of the complex knowledge is no longer useful for the low-level position, which generally requires only simple, practical and repetitive operations. In reality, a worker's reservation wage is going up as occupational tenure increases, and I observe far more up-going movements than down-going ones.[4] The reason I do not count jumping promotions in (e.g. workers to managers directly) is that, it is not common in reality; and even if it happens, because a worker mainly performs concrete tasks while the main content of a manager's work involves management. The required skills by the two kinds of jobs differ considerably and do not overlap much. Of course, saving computational cost is another very important consideration for introducing these two exclusions.

One good feature of the SOC 1980 and hence SIPP's occupational classification, is that in many occupation groups, supervisory positions are listed first, followed by the occupations supervised. This special structure makes it easier for me to identify vertical switches. However, two groups do not have this desired structure: the managerial and professional specialty occupations; and the technical, sales, and administrative support occupations. Therefore, on the one hand I fully take advantage of this vertical design of SIPP's classification, and on the other I put more effort in finding vertical switches within those two groups, e.g. 204 (Dental hygienists) to 085 (Dentist).

In the spirit of SOC 2000, an improved version of SOC 1980, I regard apprentices and assistants as occupations associated with occupation-specific human capital accumulation, but not helpers and aides (too general knowledge). This implies that up-moving switches involving apprentices and assistants are classified as vertical changes, while those related with helpers and aides are included in horizontal switches.

I am very conservative in identifying special switches, again, to minimize subjectivity. This class of changes mainly consists of two categories: (1) switches between research positions and their corresponding teaching positions, e.g. 166 (economists) and 119 (economics teachers, postsecondary) and (2) switches between private household positions and their corresponding service positions, e.g. 404 (cooks, private household) and 436 (cooks).[5]

Tables 2 and 3 list all the possible vertical and special switches under SIPP's occupational classification, respectively. I have identified 250 possible vertical changes

[4]Some may not think these arguments convincing. However, as far as the broad and very broad definitions of occupational change (see Subsection 3.2.2) are concerned, it is no longer potentially problematic.

[5]This is deemed as a flaw of SOC 1980, and SOC 2000 improves on it.

and 44 possible special changes. All other switches, as long as not appearing in either of the two tables, are classified as horizontal switches.

3.2 Measures of Occupational Mobility

3.2.1 Standard Definition of Occupational Mobility

Firstly I define occupational mobility in the same manner as Kambourov and Manovskii (2008) do, that is, the proportion of currently employed workers who report a current occupation different from their most recently reported previous occupation. I call it the standard definition of occupational mobility. Since SIPP records up to 2 occupations, primary and secondary, for each sample member at any given time,[6] I restrict my attention to the primary occupation for this moment (under the standard definition).

Since the PSID's interview interval is one year, the occupational mobility calculated by Kambourov and Manovskii (2008) is annual mobility. However, SIPP interviews its sample members every 4 months, and therefore I can compute the four-month occupational mobility. For convenience, I call it wave occupational mobility. Moreover, old SIPP panels record respondents' occupation affiliation month by month, or 4 primary occupations and 4 secondary occupations in each wave (in contrast, new SIPP panels record occupations wave by wave, or one primary occupation and one secondary occupation in each wave), which implies that I can also calculate monthly mobility for old panels. In order to compare my results with Kambourov and Manovskii (2008)'s, I need calculate yearly mobility. For new panels, I compare current wave's occupation with the occupation 3 waves before; if the source occupation is not available (respondents unemployed, out of the sample, refusing to answer, missing value, etc.), I move one wave backward rather than one year (or 3 waves) backward, in order not to waste information. Similarly, for old panels, I compare current month's occupation with the occupation 12 months before; if the source occupation is not available, I move one month backward rather than one year (or 12 months) backward. I calculate wave mobility for old panels in the same spirit.

Coding error is a big concern when one tries to use survey data. For instance, Kambourov and Manovskii (2008) control for the PSID coding error by the use of its Retrospective Occupation-Industry Supplemental Data Files, which unfortunately do not exist for SIPP. Here I apply the approach proposed by Hill (1994). In particular, when I observe an occupational switch (no matter it is horizontal, vertical, or special), I check whether there is an associated change in employer, industry, weekly working hours, and hourly pay. Once I observe one of the 4 changes takes place, I deem the occupational switch reliable and refer to it as a backed switch. Otherwise I regard the occupational switch spurious, caused much likely by the coding error. Table 5 lists

[6]More accurately, SIPP records up to 2 jobs, primary and secondary, and the jobs' occupation affiliations for each respondent at any given time. The primary job either generates more income or has longer working hours than the secondary job. But the decision on which job is primary and which job is secondary is subject to an interviewer's discretion.

the backing rates for the 3 types of occupational switches as well as for the overall occupational switches for different panels.[7] It can be seen that all the backing rates are impressively high[8], which demonstrates that the occupation affiliation data in SIPP are considerably reliable. One possible reason is the dependent coding method where the coding staff have a respondent's SIPP occupation history at hand when coding, which SIPP adopts as early as with the 1986 Panel. Given the approach I take to control for coding errors, the standard definition of occupational mobility would be: the backed proportion of currently employed workers who report a current occupation different from their most recently reported previous occupation.

3.2.2 Extensive Definitions of Occupational Mobility

The standard definition of occupational mobility obviously has its limitations. Suppose a worker works in Occupation A initially, and switches to Occupation B temporarily, and then switches back to Occupation A. According to my standard definition, there are 2 occupational changes regarding this worker. However, in terms of the loss of occupation-specific human capital, the second switch appears not destructive and might involve no loss at all. To address this issue, I propose the broad definition of occupational mobility. Continue to focus on the primary occupation, an occupation pool is constructed for each worker. In particular, all the primary occupations in history (till the previous period) enter into this occupation pool. As one can imagine, as time goes by, a worker's occupation pool tends to expand. When identifying the type of an occupational switch, I assume that no change supersedes vertical change, which in turn supersedes special change, which finally supersedes horizontal change. That is, examine the current primary occupation and one's occupation pool, whenever I can find an element exact the same as the current occupation, I conclude that this worker does not change his occupation at the time being, even if some other element can form a vertical pair, or a special pair, or a horizontal pair with the current occupation. Only when no element can be found the same as the current occupation, do I start to search for an element in the pool to constitute a vertical pair with the current occupation. Depending on whether this endeavor succeeds, the process may end or proceed to the next round.

So far the information on the secondary occupation is not made use of. In the data, it is not uncommon that a worker switches back and forth between the primary and secondary occupations, which intuitively should cause no loss of occupation-specific human capital. I extend the broad definition of occupational mobility to the very broad

[7] These backing rates are associated with the annual occupational mobility.

[8] The backing rates for vertical switches are relatively low. Since promotions are very likely to take place within a firm than across firms, I might not be able to observe anticipated changes in employer or in industry, or even in weekly working hours. The most possible change I can see should be an increase in hourly pay. However, the information on hourly pay is not widely available in SIPP. For instance, in the 2001 Panel, on average less than 20% of the respondents report their hourly pay rates. In the calculation, I regard lacking information as unbacked.

definition of occupational mobility with the help of secondary occupation information. The basic idea is the same as the broad definition of occupational mobility. The only difference is that, when constructing one's occupation pool, his secondary occupations in history are also included.

What the 3 definitions in common is that, when identifying the type of the occupational change, I only investigate the primary occupation as far as the current occupation side is concerned. One reason is that in SIPP the primary occupation is more important than the secondary one. Another is that adding the secondary occupation to the current occupation side would make the judgment rule unnecessarily complicated and hence increase computational cost significantly.

When applying the broad and very broad definitions of occupational mobility, whether an occupational switch is backed or not would be no longer relevant. Since one element in the occupation pool can sometimes be linked with 2 jobs in history, when this element happens to be the one side which forms a no-change pair, or a vertical or special switch pair with the current primary occupation, there is no convincing way to tell which job supersedes the other, and therefore it is difficult to find a reference point.

4 Occupational Mobility in SIPP

4.1 Horizontal Switches Dominate Other Occupational Switches

The first issue examined is the distribution of occupational mobility. Do horizontal, vertical, and special switches always coexist? If yes, how important is each of them? Tables 6 to 8 show the shares of 3 types of occupational switches, under different definitions, for the 7 selected SIPP samples.[9]

The tables clearly show the relative share of each individual occupational switch type. On average, horizontal switches account for more than 95% of all the occupational switches, dominating the other two types. Vertical switches have a share around 3%, which is quite small, and special switches 0.7%, which is trivial. This result is robust across all the 3 definitions of occupational mobility.[10] Given the structure of occupational mobility, in the rest of the paper, I focus mainly on the horizontal mobility, in addition to the overall mobility.

4.2 Occupational Mobility at Different Times

The panel-wide average occupational mobility rates provide us with cross-sectional information. I am equally concerned with the occupational mobility in the time-series dimension. That is, how does the mobility rate evolve as time goes by?

[9]These shares are associated with the annual occupational mobility.

[10]The conclusion also holds robustly when I vary the time interval, i.e., calculating compositional shares based on the wave and monthly mobility.

Since old and new panels differ greatly in many aspects, I apply different methods to compute their occupational mobility rates. As mentioned before, a worker's occupation affiliation is a monthly variable in old panels, but a wave variable in new panels. This implies that I can calculate yearly, wave, and monthly mobility rates for old panels, but only yearly and wave mobility rates for new panels.

In general, SIPP provides enough information to calculate the mobility rate associated with a given calendar month in the sample period. However, one should be aware that the time concept is clearer for old panels than for new panels. Since the occupation affiliation is a monthly variable in old panels, to calculate, for instance, the annual rate, one needs only to look at the occupational information in a given calendar month and 12 months before (the corresponding sequential month numbers would differ across rotation groups). But when the occupation affiliation is a wave variable as it is in new panels, it is ambiguous in what exact occupation a worker works in a given month, since the time distributions of the two occupations recorded over a given wave are not well documented, and moreover, SIPP might drop some worked occupations and record only two occupations in a wave for new panels.

Therefore, for old panels, a straightforward approach is used to compute the occupational mobility for a given month. Specifically, given a calendar month, I map it to the sequential month numbers for different rotation groups individually, and then calculate the mobility rate for each group, and finally average them out. For new panels, I assume implicitly that the occupation affiliation points to the first reference month in each wave, which implies that only one rotation group is used to compute the mobility rate for a given calendar month. For instance, to calculate the mobility for December 1996, only Rotation Group 1 is used; to calculate the mobility for January 1997, only Rotation Group 2 is used (please refer to Table 1).

One important feature of old SIPP panels is that they have some time overlapping in the panel duration. By this design, SIPP is essentially enlarging its sample size in the overlapping period. To exploit this advantage of old panels, if possible, I average the mobility rate for a given calendar month, using sample sizes as weights. New SIPP panels, nevertheless, don't have the overlapping design any longer, and hence I don't average the results.

Figures 1 to 6 plot annual, wave, and monthly rate series according to different mobility definitions for the overall mobility and the horizontal mobility. Note that several time gaps exist in the yearly and wave mobility series[11], due to the unavailability of reference observations in calculation. For instance, the 1988 Panel ends with Dec. 1989 (last calendar month) and thus the last month for which I can compute a mobility rate is Dec. 1989. However, the 1990 Panel starts with Oct. 1989 (first calendar month). To compute its annual mobility, I have to begin with its 13th observations for the first interviewed rotation group, and these observations are associated with Oct.

[11]The 3 gaps for the yearly mobility series are Dec. 1989 to Oct. 1990, Dec. 1995 to Dec. 1996, and Nov. 1999 to Oct. 2001. The wave mobility series has 3 gaps as well, which are: Dec. 1989 to Feb. 1990, Dec. 1995 to Apr. 1996, and Nov. 1999 to Feb. 2001.

1990. Therefore, a gap between Dec. 1989 and Oct. 1990 in the annual mobility series has emerged. Similarly, a narrower gap, from Dec. 1989 to Feb. 1990 appears in the wave mobility series. The monthly mobility series, however, does not have a similar gap, simply because the first available month in this series based on the 1990 Panel is Nov. 1989, which is prior to Dec. 1989. As mentioned above, for the overlapping two months (Nov. and Dec. 1989), a weighted average is calculated as the final result.

It is clear in Figures 1 and 2 that starting from the early 1990's, the annual mobility goes up gradually till the late 1990's, which verifies Kambourov and Manovskii (2008)'s finding, and then levels off (or even mildly declines) afterwards, generally consistent with Vella and Moscarini (2004)'s result. Yet, there seems no overall trending for the whole sample period.

As can be seen in the figures that there are a few obvious outliers for the annual and wave mobility series,[12] which, though do not significantly affect the mean values of the corresponding mobility rates, increase individual series' variances appreciably. With the outliers excluded, Table 9 lists average mobility rates for various series. As anticipated, the horizontal mobility rates are very close to their overall counterparts, since the horizontal switch is the dominant type among all 3 occupational switches. No matter what time intervals are considered, annual, wave, or monthly, the magnitudes of mobility rates are similar under the three definitions, which shows that these numbers are quite robust. The annual mobility, for instance, is around 15% concerning all three definitions, roughly consistent with Kambourov and Manovskii (2008)'s finding (18%)[13]. And the wave mobility is about 7%. As the time interval declines (i.e. from annual to wave, from wave to monthly), the mobility series' variation increases nevertheless. Taking the overall mobility as an example and considering the annual rate, the coefficients of variation for the standard, broad and very broad mobility are all equal to 0.14. But for the wave rate, the 3 values turn to 0.14, 0.16, and 0.16, respectively. Finally as far as the monthly rate is concerned, the results become 0.30, 0.31, and 0.34, respectively. The same pattern applies to the horizontal mobility as well. A possible reason is, as the time interval declines, the random factors that may cancel out one another to a large extent in the relatively long time spans (e.g. a year, or a wave), would start to play noticeable roles, which results in the fact that the coefficient of variation for a monthly rate is considerably larger than that of its annual or wave counterpart. Therefore, I would concentrate on the annual and wave mobility henceforth.

[12]The annual mobility outliers are Dec. 1996 (2.6 to 3.0 times the average) and Apr. 1997 (2.6 to 2.8 times the average), under all the 3 definitions for both overall and horizontal mobility. Similarly, there is one outlier, Aug. 1996 (4.5 to 6.0 times the average), for the wave mobility. A probable reason is that for the 1996 Panel, the occupation affiliation data are relatively inaccurate for Rotation Group 1's first 2 waves, making those mobility rates which use these 2 waves as references unusually high.

[13]Their sample period is from 1968 to 1997. And they report the mobility rate of 20% in the late 1990's. But as my figures show, the mobility tends to decrease after that period, which would average down the mobility level from 20% even if I were to use the PSID data.

Comparing the annual mobility and the wave mobility in Table 9, one finds that the former is slightly more than twice but far less than 3 times the latter for both overall and horizontal series. Since one year consists of 3 waves, this indicates that some workers keep changing occupations after their first occupational switch, otherwise on average the annual mobility would be roughly 3 times the wave mobility. This finding echoes Vella and Moscarini (2004)'s result that a residual persistence exists in the occupational-matching process: some less-lucky and poorly matched workers keep changing their occupations.

4.3 Occupational Mobility in Different Age-Education Subgroups

I break down each of the 7 selected SIPP samples into 6 age-education subgroups. Along the age dimension, there are 3 categories: young-age group (23–35), middle-age group (36–48), and old-age group (49–61). According to an individual's education attainment, he falls either in low-education group (high school and less) or in high-education group (some college and college). Following the same method in Subsection 4.2, I compute various annual and wave occupational mobility rates for every age-education subgroup, according to types (overall and horizontal) and definitions (standard, broad, and very broad).

As in Subsection 4.2, the magnitudes of mobility rates are similar under the three definitions, no matter what time interval is concerned, for a given age-education subgroup; as the time interval decreases from annual to wave, the mobility series' variation increases; the horizontal mobility rates are very close to their corresponding overall mobility rates; and the patterns of both the annual and wave series resemble that of their whole-sample counterparts in Subsection 4.2, for all the 6 age-education subgroups: climbing up slowly in the 1990's, leveling out and declining gradually afterwards, showing no general trend in the sample period.

First consider age's impact on occupational mobility. Since human capital is largely occupation-specific and occupational switches cause losses of occupational human capital (horizontal switches dominate the other two types), as age increases and occupational human capital accumulates, the opportunity cost of changing one's occupation will go up. Therefore, the occupational mobility should decline with age. My results confirm this intuition just like Kambourov and Manovskii (2008)'s do. As two examples, Figures 7 and 8 depict the annual overall mobility under standard definition and the wave horizontal mobility under very broad definition for all the 6 age-education subgroups, respectively. It is clear that the occupational mobility indeed declines with age whatever education group a worker belongs to. In each panel of Figures 7 and 8, an age group forms a stratum for itself and separates one another coarsely. However, the demarcation between the middle-age and old-age groups becomes ambiguous in the 2000's for the low-education workers, which might indicate that a high school graduate reaches the peak of his learning curve earlier nowadays than in the past, per-

haps because the high school education is increasingly general and thus decreasingly helpful in terms of building a worker's occupational human capital. Another pattern is that the within-group variation increases with age. For instance, the coefficients of variation for the young-age, middle-age, and old-age groups in Figure 8's top panel (low-education group) are 0.20, 0.27, and 0.43, respectively, and for the bottom panel (high-education group), 0.20, 0.32, and 0.49, respectively. This indicates that the young-age workers' occupation-switching behavior is more uniform across time than other two age groups'. It could be the case that young-age workers are mainly influenced by the occupational matching process, while middle- and old-age workers are affected more by the macroeconomic conditions (e.g. occupational shocks). The above two patterns are common in all the mobility series calculated in this subsection.

I continue by investigating the influence of education attainment on the occupational mobility. Different from Kambourov and Manovskii (2008) who uncover that the college educated workers exhibit lower occupational mobility than the less-educated, I find no simple patterns in this regard. In particular, for middle-age workers, a college-education lowers one's occupational mobility; whereas for old-age workers, a college-education plays an exactly opposite role. For the young-age group, however, the evidence is mixed. For instance, in Figure 7 Group 1[14]'s average mobility is 19.92%, less than that of Group 2[15] (20.31%); conversely, in Figure 8 Group 1's average mobility is 7.87%, greater than that of Group 2 (7.60%). My finding appears more relevant to that of Vella and Moscarini (2004), who claim that the college effect is ambiguous.

5 Nonemployment Intervened in Occupational Switches

SIPP provides detailed information on workers' labor market status in new panels. From Panel 1996 on, individuals' weekly and monthly labor market states are recorded. However, panels prior to 1996 are weak in this regard. Hence, I put my focus on new panels in this section.

5.1 Nonemployment Fractions

I examine how nonemployment (unemployment and/or out of labor force) relates to occupational shifts in two steps. The first step is a natural extension of Section 4. Specifically, I ask how many occupational switchers experience nonemployment between the source and target occupations. As a comparison, I compute this fraction for the job changers who nonetheless do not switch their occupations. A very important consideration in calculating these statistics is the sample size. Different from the statistic of occupational mobility, which is based on a considerably large sample containing all the original SIPP members who satisfy my sample restriction conditions

[14]They are young-age low-education workers.

[15]They are young-age high-education workers.

(see Table 4: Sample Size), the sample size (denominator) shrinks dramatically for the statistics of nonemployment fraction. Take the 1996 Panel as an example, the average sample size for computing the annual mobility rates is 6808. However, on average there are 1137 backed horizontal switchers, 39 backed vertical switchers, and 4 backed special switchers, who constitute the samples based on which the nonemployment fractions of horizontal, vertical, and special switchers, respectively, are calculated. It is obviously not appropriate to compute the nonemployment fractions of vertical and special switchers on the basis of above two very small samples. Since the nonemployment time distributions of horizontal and vertical switchers appear much different,[16] it is also not sensible to group these two distinct classes of occupational switchers together and calculate the "overall" nonemployment fraction of occupational switchers. Therefore, I calculate only horizontal switchers' nonemployment fraction, together with the above-mentioned nonemployment fraction of the job changers who do not switch their occupations. Again, restricted by the relatively small sample, I need pool observations from all the 4 rotation groups together in the computation, which implies that I am unable to calculate a statistic that corresponds to a definite calendar month as in Section 4. Since in order to do that especially for the new panels, rotation group-wise statistics are indispensable. But here I have to combine different rotation groups to enlarge the sample size. So chronologically speaking, all the nonemployment fractions are based on waves in this subsection (as is the same case in the following subsection for the same reason), and caution should be exercised in explaining the results whenever there involves a time dimension.

For new panels, in computing the standard annual mobility in Section 4, a worker's current occupation is compared with the one 3 waves before,[17] so as to determine whether he is an occupational switcher or not, and if yes, what type this switch is. Therefore, my extended exercise would be to check whether the worker experiences any nonemployment during the intervening 2 waves. The SIPP variable I make use of is the Monthly Employment Status Recode (MESR), and it has a finer classification than the conventional three-class categorization (employed, unemployed, and out of labor force). MESR classifies a worker's monthly employment status into one of the

[16] See Subsection 5.2.

[17] Essentially I am caring about whether any nonemployment is involved between the adjacent 2 occupations. However, some occupational switches could take place in the intervening 2 waves. If this is the case, the nonemployment period associated with the intervening 2 waves should be irrelevant with the source and target occupations that constitute the annual mobility. Despite this weakness, I continue with the nonemployment fraction based on annual mobility, for the following three reasons. (1) Annual mobility is the most often used statistic in the literature, and the annual mobility based nonemployment fraction is its natural extension. (2) The time span of 2 waves (or 8 months) is not problematically long so that further occupational changes are not very likely to occur. (3) I use this statistic just to get a general picture of the nonemployment related to occupational shifts, and another more accurate measure is used in Subsection 5.2. However, to reduce inaccuracy, I restrict my attention to the standard definition in Section 5. Since under broad and very broad definitions, it is very likely that the source occupation is in history and more than 3 waves apart and thus potentially more problematic.

following 8 classes.

1: with job entire month, worked all weeks.
2: with job entire month, missed one or more weeks but not because of a layoff.
3: with job entire month, missed one or more weeks because of a layoff.
4: with job part of month, but not because of a layoff or looking for work.
5: with job part of month, some time spent on layoff or looking for work.
6: no job in month, spent entire month on layoff or looking for work.
7: no job in month, spent part of month on layoff or looking for work.
8: no job in month, no time spent on layoff or looking for work.

Following Ryscavage (1989) I adopt 2 definitions of unemployment, a limited one (MESR equal to 6 or 7) and a comprehensive one (MESR equal to 3, 5, 6, or 7). MESR equaling 8 would be classified as out of labor force. The judgment rule is straightforward: if the limited definition of unemployment is taken, all the 8 MESR's for the intervening 2 waves are examined one by one (MESR is a monthly variable and subject to change across months); as long as a value of 6 or 7 is observed, the worker is believed to have experienced unemployment during the switch; by the same token, a value of 8 leads to the conclusion that the worker leaves the labor force for some time; only when all the MESR's take on a value other than 6, 7, or 8 do I conclude that there is no nonemployment intervened in the switching process. Note that being unemployed and being out of labor force are not mutually exclusive, that is, it could be the case that a worker experiences both unemployment and out of labor force (subsequently) in the intervening 2 waves.

Table 10 lists various measures of nonemployment fraction for the backed horizontal occupational switchers and for the job changers who nonetheless do not switch their occupations. Three findings emerge. (1) No matter which of the 5 measures is considered, the nonemployment fraction is very similar between the occupational switchers and the occupational stayers. (2) The majority of occupational switchers do not experience nonemployment when they change occupations: they just move directly from the source occupation to the target one. Likewise, more than 50% of the occupational stayers switch directly between employers, without experiencing any unemployment or out of labor force period. This indicates that on-the-job search is extremely important for both types of switching behavior. (3) The fraction of occupational switchers who experience intervening nonemployment rises in the 2001 Panel than in the 1996 Panel, as is also true for occupational stayers.

5.2 Nonemployment Duration Distributions

Due to the limitations of nonemployment fractions (see Footnote 17 for details), I proceed by investigating the nonemployment time intervened in the two *adjacent* occupations, which is undoubted a more direct and accurate statistic in examining the importance of nonemployment to occupational changes. And SIPP is exceptionally suitable for this computation. Compared with other often used panel data, SIPP's

high frequency of interviewing (every 4 months) and recording (in terms of occupation affiliation, every 4 months for new panels and every month for old panels) obviously stands it out.[18] More importantly, SIPP records workers' Weekly Employment Status Recode (WKESR, from which MESR is derived), which, on the one hand makes SIPP users more confident in its labor force data's reliability, and on the other enables researchers to measure nonemployment time in the units of as fine as weeks. Despite these desirable features, surprisingly, SIPP has never been used to study the nonemployment time distributions during occupational switches. One possible reason is that SIPP is not well known among researchers; another might be that the algorithm to compute this statistic is somewhat involved.

The basic idea is to first identify the ending date for the source occupation ("date ending" henceforth) and the starting date for the target occupation ("date starting" henceforth), and then to examine each of the WKESR's in between so as to calculate the total numbers of unemployment weeks and out of labor force weeks.[19] It follows that, for new panels, the computation would be based on wave occupational changes since it is the two adjacent occupations that are of interest, which is different from that in Subsection 5.1.

The information on a "date starting" or a "date ending" is not always available in SIPP: take the 1996 Panel for instance, the average responding rates to "date starting" and "date ending" questions are 85% and 4%[20], respectively, for all the sample members. Even if it is available, I need further check the information's consistency. Recall that the occupation affiliation is a wave variable in new panels. Consider the source occupation first and call its corresponding wave the source wave. Denote the source wave's first day "date A" and its last day "date B". Consistency requires that "date ending" fall in between "date A" and "date B", obviously. If this condition is violated, I regard "date ending" illegitimate and do not use it in the subsequent computation. Then move on to the target occupation and similarly call its corresponding wave the target wave. Denote the target wave's last day "date D". Again, consistency would require that "date starting" fall in between "date A" and "date D". Likewise, its violation would lead to the ignorance of "date starting" subsequently. In addition to the above two basic consistency conditions, there is another consistency condition:

[18] Although I cite unemployment spell statistics from studies based on the CPS in Section 1, as argued before, the CPS is not suited for this research purpose, due to its non-longitudinal nature. Readers are sometimes prone to doubt those results' reliability.

[19] SIPP records "date starting" and "date ending" data in terms of calendar time. However, WKESR's are organized according to their sequential month number (relative to the starting reference month, or Month 1, of a given panel) and sequential week number (1 to 5). It is necessary to analyze a "date starting" or a "date ending" and to transform it into the corresponding sequential month number and sequential week number, which requires some effort.

[20] Intuitively, the responding rate of "date ending" should be comparable to the occupational mobility rate (in this case, the wave mobility rate of about 7%). A 4% overall responding rate translates into a responding rate of 57% for occupational switchers. The reason for this low availability rate, however, is not very clear.

"date ending" should be no later than "date starting". If this condition does not hold, there is, however, no convincing way to tell which of "date starting" and "date ending" is invalid. Given that the availability rate is always higher for "date starting" than for "date ending", I just assume that violation of the third consistency condition results in the nullity of "date ending" and the validity of "date starting".

It follows that, whether a "date starting" or a "date ending" is usable will depend on both its availability and its validity. According to the usability of "date starting" and "date ending", I break down all the occupational switches into 4 groups. In Group 1, both "date starting" and "date ending" are usable. I start with "date starting" and move backwards until "date ending" is reached,[21] to examine each WKESR in between. In Group 2, only "date starting" is available and valid. Thus I start by "date starting" and move backwards until the first WKESR suggesting the status of employment is reached. By this it is implicitly assumed that this first WKESR indicates the ending of the source occupation. However, if no such WKESR exists, the investigation stops at "date A". The approach is symmetric for Group 3, in which only "date ending" is usable. I start by "date ending" and move forwards until the first WKESR which suggests the status of employment is reached. If I cannot find such a WKESR, I stop at "date D". In Group 4, neither "date starting" nor "date ending" can be used. Consider the time interval between "date A" and "date D", it is anticipated that a pattern of employment– nonemployment– employment should arise somewhere.[22] The principle therefore is to locate this structure first and then to identify the nonemployment period in the middle. It does not matter where to start, "date A" or "date D", and I choose the former in my approach. Intuitively, the more information of the survey is made use of to compute a statistic, the more confidence I have in the result. In this sense, I hope as many as possible observations fall in Group 1 and as few as possible in Group 4. Fortunately the samples behave nicely in this regard. For instance, the 1996 Panel's sample has the following composition: 33.81% for Group 1, 56.43% for Group 2, 4.67% for Group3, and 5.09% for Group 4.

Like MESR, WKESR has a finer classification than the conventional three-class categorization. WKESR classifies a worker's weekly employment status into one of the following 5 classes.

1: with job or business, working.
2: with job or business, absent without pay, but not on layoff.
3: with job or business, absent without pay, on layoff.
4: no job or business, looking for work or on layoff.
5: no job or business, not looking for work and not on layoff.

To be compatible with Ryscavage (1989), I also propose two definitions of unemployment based on WKESR, a limited one (WKESR equal to 4) and a comprehensive one

[21] Equivalently, one can start with "date ending" and move forwards until "date starting" is reached. Both methods will yield the same result.

[22] It could be the case that this structure is preceded by some nonemployment time and/or followed by some nonemployment time.

(WKESR equal to 3 or 4). WKESR equaling 5 would be classified as out of labor force.

Tables 11 to 13 list the nonemployment time distributions for horizontal occupational switchers, occupational stayers (job changers), and vertical occupational switchers, respectively, based on the data of Wave 2, the 1996 Panel. Each provides a typical example of its own kind. In particular, horizontal occupational switchers have a very similar nonemployment time distribution to that of occupational stayers. No matter what measure is considered, the majority of both do not experience any intervening nonemployment period during the switching process. The feature is more salient as far as the out of labor force duration is concerned. This verifies the finding in Subsection 5.1, but with a more rigorous measure.[23] On the other hand, the nonemployment time distribution for vertical occupational switchers appears very different: it is far less spread than that for the above two classes of workers. Vertical occupational switchers tend to cluster around zero nonemployment and some very limited number of medium-length nonemployment time spans. Because of this significant difference and the very small sample size of vertical switchers, I choose to put this group aside and focus only on horizontal switches.

To get a more general picture, I classify the nonemployment duration into 5 categories according to its length: no interruption (zero week), short (less than a month, or 1-4 weeks), medium (more than a month but less than a quarter, or 5-13 weeks), long (more than a quarter but less than a year, or 14-52 weeks), and very long (more than a year, or 53+ weeks). Tables 14 and 15 show the average nonemployment time distributions under the above five-group classification of horizontal switchers and occupational stayers (job changers) for the 1996 Panel and the 2001 Panel, respectively. Note that the two definitions of unemployment yield very similar unemployment duration distributions, which makes the two associated nonemployment duration distributions analogous as well. For both horizontal switchers and occupational stayers (job changers), most of them do not experience any nonemployment periods in the switching process and this feature is most pronounced for the out of labor force duration distribution; the number of workers who experience a very long interruption (53+ weeks) is trivial; and the remaining workers are distributed roughly evenly in the other three interruption groups. Comparing the 1996 Panel and the 2001 Panel,[24] it is observed that the number of workers falling in the no interruption group is declining, while that of workers experiencing a long interruption time is rising considerably, for both horizontal switchers and occupational stayers (job changers). This pattern is more salient for the two nonemployment duration distributions.

[23] Even when I compute these two distributions based on data later than Wave 2 (namely, occupational switchers and occupational stayers in Waves 3, 4, 5, etc.), although the upper bounds of support increase, the conclusion still holds qualitatively.

[24] Although it is warned earlier that one should be careful when comparing results across time in this section, these two panels are separated quite apart chronologically (they even do not have overlapping time), and hence the panel-wise statistics can be compared meaningfully.

At last, I calculate the mean nonemployment duration under different measures, associated with their coefficients of variation. As three examples, Figures 9 to 11 plot backed horizontal switchers and occupational stayers (job changers)' mean unemployment durations (limited definition), mean out of labor force durations, and mean nonemployment durations (comprehensive definition), respectively, together with their corresponding coefficients of variation. Despite many similarities between horizontal switchers and occupational stayers discussed above, the graphs show some interesting differences. It is clear that in most cases horizontal switchers have a longer mean nonemployment duration than occupational stayers do. However, the variation is always smaller for the former than for the latter. It could be the case that many occupational switchers cannot afford a long nonemployment duration for a desired job and are forced to change their occupation to make ends meet. Although the time concept is vague in this section, one can still see a general rising trend in all the figures: the mean interruption time is increasing for both groups of workers. My previous finding, that the no interruption group is shrinking while the long interruption time group expanding, naturally leads to this result.

6 Conclusion

This paper uses SIPP, an underutilized data set to analyze the occupational mobility in the U.S. from 1988 to 2003. Exploiting SIPP's detailed information on workers' occupation, I propose and calculate various extended versions of occupational mobility rate to do robustness check, with careful treatment of the coding error. Unlike works that treat occupational mobility homogeneously, I classify all occupational switches into three categories: horizontal, vertical and special. Numerous mobility rates are computed according to different definitions, categories, time intervals, and subgroups. I find that, in terms of shares, horizontal switches dominate vertical and special ones at all times; that the mobility level and trend are generally consistent with other empirical works; and that aging decreases the occupational mobility while education's role ambiguous. Moreover, I examine the interaction between occupational mobility and labor market status, taking advantage of SIPP's high interview frequency and rich labor market information recording. I develop an algorithm to extract nonemployment information between jobs from SIPP. I find that most occupational switchers do not experience nonemployment between jobs, very similar to job changers without involving an occupational switch, but the duration variation is less in the former group than in the latter group. As time goes by, the employment-to-employment mobility fraction is declining for both groups.

In the job turnover literature, two important indicators are (gross) mobility and net mobility (one-half of sum of the absolute changes in employment shares of different establishments). They shed light on the mechanisms accounting for the occupational mobility here as well. If the gross mobility is comparable with the net mobility, then it

is the occupational shock that matters: occupations that receive good shocks expand and induce mainly labor inflows, whereas occupations that receive bad shocks contract and induce mainly labor outflows. On the other hand, if the gross mobility dominates the net mobility, then it is the matching process that matters: there are workers entering into and exiting from an occupation at the same time and the two effects cancel out each other a great deal.

Kambourov and Manovskii (2008)'s results show that both mechanisms above seem at work. In the 1960's, the gross mobility is 16% and the net one is 9%. In the 1990's, the gross mobility is 20% and the net one is 13%. In both cases, the former is greater than the latter, but not by a significant amount (less than twice the latter). Therefore, a theoretical model of prime age workers' occupational switch needs to include occupation-level shocks and the matching process. In addition, my findings in this article suggest that search also plays an important role. On the one hand, on-the-job search seems to be a common practice as most workers do not experience nonemployment between the source and target occupations. On the other, the fact that mean nonemployment duration is on the rise implies that search frictions become more serious than before.

References

Hill, Daniel H. (1994), "The relative empirical validity of dependent and independent data collection in a panel survey." *Journal of Official Statistics*, 10, 359–359.

Kambourov, Gueorgui (2009), "Labour market regulations and the sectoral reallocation of workers: The case of trade reforms." *Review of Economic Studies*, 76, 1321–1358.

Kambourov, Gueorgui and Iourii Manovskii (2008), "Rising occupational and industry mobility in the united states: 1968–1997." *International Economic Review*, 49, 41–79.

Kambourov, Gueorgui and Iourii Manovskii (2009a), "Occupational mobility and wage inequality." *Review of Economic Studies*, 76, 731–759.

Kambourov, Gueorgui and Iourii Manovskii (2009b), "Occupational specificity of human capital." *International Economic Review*, 50, 63–115.

Markey, James P. and William Parks (1989), "Occupational change: pursuing a different kind of work." *Monthly Labor Review*, 3–12.

Mincer, Jacob (1974), "Schooling, experience, and earnings. human behavior & social institutions no. 2."

Neal, Derek (1995), "Industry-specific human capital: Evidence from displaced workers." *Journal of labor Economics*, 653–677.

Neal, Derek (1999), "The complexity of job mobility among young men." *Journal of Labor Economics*, 17, 237–261.

Parent, Daniel (2000), "Industry-specific capital and the wage profile: Evidence from the national longitudinal survey of youth and the panel study of income dynamics." *Journal of Labor Economics*, 18, 306–323.

Parrado, Eric, Asena Caner, and Edward N. Wolff (2007), "Occupational and industrial mobility in the united states." *Labour Economics*, 14, 435–455.

Ritter, Moritz (forthcoming), "Offshoring and occupational specificity of human capital." *Review of Economic Dynamics*.

Ryscavage, Paul (1989), *Measuring spells of unemployment and their outcomes*. US Bureau of the Census.

Topel, Robert (1991), "Specific capital, mobility, and wages: Wages rise with job seniority." *Journal of Political Economy*, 145–176.

Vella, Francis and Giuseppe Moscarini (2004), "Aggregate worker reallocation and occupational mobility in the united states: 1976-2000." In *2004 Meeting Papers*, 183, Society for Economic Dynamics.

Table 1: 1996 Panel: Rotation Groups, Waves, and Reference Months

Reference Month	Rotation Group				Reference Month	Rotation Group			
	1	2	3	4		1	2	3	4
Dec-95	W1 1				Dec-97	W7 1			
Jan-96	W1 2	W1 1			Jan-98	W7 2	W7 1		
Feb-96	W1 3	W1 2	W1 1		Feb-98	W7 3	W7 2	W7 1	
Mar-96	W1 4	W1 3	W1 2	W1 1	Mar-98	W7 4	W7 3	W7 2	W7 1
Apr-96	W2 1	W1 4	W1 3	W1 2	Apr-98	W8 1	W7 4	W7 3	W7 2
May-96	W2 2	W2 1	W1 4	W1 3	May-98	W8 2	W8 1	W7 4	W7 3
Jun-96	W2 3	W2 2	W2 1	W1 4	Jun-98	W8 3	W8 2	W8 1	W7 4
Jul-96	W2 4	W2 3	W2 2	W2 1	Jul-98	W8 4	W8 3	W8 2	W8 1
Aug-96	W3 1	W2 4	W2 3	W2 2	Aug-98	W9 1	W8 4	W8 3	W8 2
Sep-96	W3 2	W3 1	W2 4	W2 3	Sep-98	W9 2	W9 1	W8 4	W8 3
Oct-96	W3 3	W3 2	W3 1	W2 4	Oct-98	W9 3	W9 2	W9 1	W8 4
Nov-96	W3 4	W3 3	W3 2	W3 1	Nov-98	W9 4	W9 3	W9 2	W9 1
Dec-96	W4 1	W3 4	W3 3	W3 2	Dec-98	W10 1	W9 4	W9 3	W9 2
Jan-97	W4 2	W4 1	W3 4	W3 3	Jan-99	W10 2	W10 1	W9 4	W9 3
Feb-97	W4 3	W4 2	W4 1	W3 4	Feb-99	W10 3	W10 2	W10 1	W9 4
Mar-97	W4 4	W4 3	W4 2	W4 1	Mar-99	W10 4	W10 3	W10 2	W10 1
Apr-97	W5 1	W4 4	W4 3	W4 2	Apr-99	W11 1	W10 4	W10 3	W10 2
May-97	W5 2	W5 1	W4 4	W4 3	May-99	W11 2	W11 1	W10 4	W10 3
Jun-97	W5 3	W5 2	W5 1	W4 4	Jun-99	W11 3	W11 2	W11 1	W10 4
Jul-97	W5 4	W5 3	W5 2	W5 1	Jul-99	W11 4	W11 3	W11 2	W11 1
Aug-97	W6 1	W5 4	W5 3	W5 2	Aug-99	W12 1	W11 4	W11 3	W11 2
Sep-97	W6 2	W6 1	W5 4	W5 3	Sep-99	W12 2	W12 1	W11 4	W11 3
Oct-97	W6 3	W6 2	W6 1	W5 4	Oct-99	W12 3	W12 2	W12 1	W11 4
Nov-97	W6 4	W6 3	W6 2	W6 1	Nov-99	W12 4	W12 3	W12 2	W12 1
Dec-97		W6 4	W6 3	W6 2	Dec-99		W12 4	W12 3	W12 2
Jan-98			W6 4	W6 3	Jan-00			W12 4	W12 3
Feb-98				W6 4	Feb-00				W12 4

NOTES: The cell entry W1 1 represents Wave 1, Reference Month 1. For Rotation Group 1, the reference months for Wave 1 are Dec-95 through Mar-96. (Source: SIPP Users' Guide, 3rd Ed., Table 2-2)

Table 2: Vertical Occupational Switches in SIPP

023–025: 007	337–344: 305	486–489: 485
027: 008	337: 023	495, 496: 494
028–033: 009	348, 353: 306	498: 497
034: 013	354–378: 307	505–549: 503
035: 018	379: 303	506: 505
106: 084	404: 433	563–565: 553
204: 085	405: 448	564: 563
207: 095	407: 448	567, 569: 554
213: 055	413–415: 006	569: 567
214: 056	416, 417: 413	575–577: 555
215: 057	418–424: 414	576: 575
218: 063	425–427: 415	579–584: 556
223: 078	433: 017	585, 587: 557
224: 073	434–444: 433	587: 585
229: 064	439: 404, 436	614–617: 613
234: 178	443: 435	634–699: 628
243: 013	445: 085	635: 634
253–285: 243	449–455: 448	639: 637
305: 007	457–469: 456	654: 653
308, 309: 304	473: 475	804–814: 803
327: 028, 029	474: 476	844–859: 843
328: 027	477: 475, 476	865–889: 864
329: 164	479–484: 477	

NOTES: There are 250 possible pairs in total, with the source occupation code before the colon and the target occupation code after the colon.

Table 3: Special Occupational Switches in SIPP

004: 005	118: 167	404: 436
005: 004	119: 166	405: 449
064: 129	125: 168	406: 466
069: 116	129: 064	407: 453
073: 115	133: 083	436: 404
077, 079: 136	136: 077, 079	445: 204
078: 114	166: 119	449: 405
083: 133	167: 118	453: 407
114: 078	168: 125	466: 406
115: 073	204: 445	804–809: 804–809
116: 069		

NOTES: There are 44 possible pairs in total, with the source occupation code before the colon and the target occupation code after the colon.

Table 4: Overview of Selected Samples

Original Panel	Starting Month	Ending Month	Number of Waves	Sample Size
1988	Oct. 1987	Dec. 1989	6	5,204
1990	Oct. 1989	Aug. 1992	8	9,815
1991	Oct. 1990	Aug. 1993	8	6,471
1992	Oct. 1991	Mar. 1995	10	8,848
1993	Oct. 1992	Dec. 1995	9	8,835
1996	Dec. 1995	Feb. 2000	12	8,507
2001	Oct. 2000	Dec. 2003	9	8,285

Table 5: Backing Rates for Selected Samples (%)

Panel	Overall	Horizontal	Vertical	Special
1988	94.09	94.48	84.95	95.62
1990	94.63	94.66	92.91	100
1991	95.54	95.62	91.17	100
1992	95.96	96.21	87.96	100
1993	96.08	96.18	91.84	93.85
1996	95.79	95.84	93.79	100
2001	95.99	96.14	90.04	100
Average	95.44	95.59	90.38	98.5

Table 6: Shares of Horizontal, Vertical and Special Switches: Standard Definition (%)

Panel	Horizontal	Vertical	Special
1988	95.52	2.92	1.56
1990	96.05	3.25	0.7
1991	96.93	2.29	0.78
1992	96.86	2.83	0.31
1993	96.8	2.82	0.38
1996	96.67	3	0.33
2001	97.19	2.49	0.32
Average	96.57	2.8	0.63

Table 7: Shares of Horizontal, Vertical and Special Switches: Broad Definition (%)

Panel	Horizontal	Vertical	Special
1988	94.71	3.42	1.88
1990	95.81	3.56	0.62
1991	96.76	2.44	0.81
1992	96.4	3.36	0.24
1993	96.33	3.14	0.53
1996	95.88	3.3	0.42
2001	96.52	3.11	0.37
Average	96.06	3.19	0.7

Table 8: Shares of Horizontal, Vertical and Special Switches: Very Broad Definition (%)

Panel	Horizontal	Vertical	Special
1988	94.76	3.5	1.74
1990	95.72	3.65	0.62
1991	96.42	2.55	1.03
1992	96.28	3.46	0.27
1993	96.34	3.15	0.51
1996	95.65	3.86	0.49
2001	96.37	3.22	0.41
Average	95.93	3.34	0.72

Table 9: Average Rates for Overall Mobility and Horizontal Mobility (%)

Definition	Overall Mobility			Horizontal Mobility		
	Annual	Wave	Monthly	Annual	Wave	Monthly
Standard	15.22	7.10	1.79	14.70	6.88	1.74
	(2.13)	(0.99)	(0.54)	(2.09)	(0.99)	(0.52)
Broad	14.77	6.66	1.62	14.18	6.40	1.55
	(2.03)	(1.03)	(0.50)	(1.97)	(1.02)	(0.48)
Very Broad	14.26	6.03	1.34	13.67	5.78	1.29
	(1.93)	(0.96)	(0.46)	(1.86)	(0.95)	(0.44)

NOTES: Outliers are excluded (see Footnote 12 for details). In parentheses are standard deviations.

Table 10: Average Nonemployment Fractions for Panels 1996 and 2001 (%)

	Panel 1996		Panel 2001	
	Switcher	Stayer	Switcher	Stayer
Unempl (lim)	15.07	17.35	23.36	21.48
	(2.10)	(1.89)	(3.90)	(4.77)
Unempl (comp)	22.69	26.7	31.53	30.67
	(2.08)	(1.50)	(3.45)	(3.71)
Out	11.91	13.52	17.34	18.43
	(2.87)	(3.11)	(2.76)	(2.05)
Nonempl (lim)	22.59	25.77	33.9	33.98
	(3.58)	(2.65)	(3.99)	(4.99)
Nonempl (comp)	29.36	33.92	40.68	41.91
	(3.50)	(2.58)	(3.69)	(3.99)

NOTES: For columns, Switcher refers to the backed horizontal occupational switchers, and Stayer the occupational stayers who change their jobs (employers). For rows, Unempl (lim) represents unemployment (limited definition), Unempl (comp) unemployment (comprehensive definition), Out out of labor force, Nonempl (lim) unemployment (limited definition) or out of labor force, and Nonempl (comp) unemployment (comprehensive definition) or out of labor force. All statistics are associated with the annual occupational mobility under the standard definition. In parentheses are standard deviations.

Table 11: Nonemployment Duration Distributions for Backed Horizontal Switchers: Panel 1996, Starting Wave 2

Unempl (lim)		Unempl (comp)		Out		Nonempl (lim)		Nonempl (comp)	
Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)
0	66.6	0	65.54	0	79.85	0	54.21	0	53.15
1	5.31	1	5.86	1	5.55	1	8.7	1	9.25
2	3.04	2	3.04	2	3.83	2	3.3	2	3.3
3	3.46	3	3.46	3	0.96	3	4.63	3	4.63
4	1.57	4	1.57	4	4.44	4	4.41	4	4.41
5	3.06	5	3.06	5	0.66	5	3.56	5	3.56
6	1.25	6	1.25	6	1.5	6	1.66	6	1.66
7	2.82	7	3.33	7	0.47	7	1.78	7	2.29
8	1.79	8	1.79	8	0.61	8	2.44	8	2.44
9	0.94	9	0.94	9	0.27	9	1.91	9	1.91
10	1.72	10	1.72	10	1.28	10	2.43	10	2.43
12	1.69	12	1.69	12	0.58	11	0.36	11	0.36
14	1.83	14	1.83			12	2.85	12	2.85
17	0.66	17	0.66			13	0.47	13	0.47
19	0.27	19	0.27			14	1.47	14	1.47
20	1.95	20	1.95			17	0.66	17	0.66
21	0.22	21	0.22			18	0.36	18	0.36
23	0.38	23	0.38			19	0.27	19	0.27
25	1.16	25	1.16			20	1.64	20	1.64
26	0.27	26	0.27			21	0.22	21	0.22
						22	0.57	22	0.57
						23	0.38	23	0.38
						24	0.31	24	0.31
						25	1.16	25	1.16
						26	0.27	26	0.27

NOTES: Unempl (lim) represents unemployment (limited definition), Unempl (comp) unemployment (comprehensive definition), Out out of labor force, Nonempl (lim) unemployment (limited definition) or out of labor force, and Nonempl (comp) unemployment (comprehensive definition) or out of labor force. All frequencies are associated with the wave occupational mobility under the standard definition.

Table 12: Nonemployment Duration Distributions for Occupational Stayers: Panel 1996, Starting Wave 2

Unempl (lim)		Unempl (comp)		Out		Nonempl (lim)		Nonempl (comp)	
Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)
0	74.33	0	74.33	0	88.72	0	67.78	0	67.78
1	3.36	1	3.36	1	1.83	1	4.2	1	4.2
2	2.19	2	2.19	2	2.08	2	2.14	2	2.14
3	4.17	3	4.17	3	0.85	3	4.3	3	4.3
4	4.6	4	4.6	5	1.3	4	5.1	4	5.1
6	1.41	6	1.41	6	0.84	5	1.3	5	1.3
7	2.01	7	2.01	7	1.32	6	0.57	6	0.57
9	0.71	9	0.71	8	1.28	7	2.34	7	2.34
12	0.56	12	0.56	9	1.22	8	0.98	8	0.98
16	2.86	16	2.86	10	0.56	9	1.93	9	1.93
17	0.62	17	0.62			11	0.72	11	0.72
18	0.82	18	0.82			12	0.84	12	0.84
21	1.31	21	1.31			14	0.56	14	0.56
25	1.06	27	1.06			16	2.86	16	2.86
						17	0.62	17	0.62
						18	0.82	18	0.82
						20	0.56	20	0.56
						21	1.31	21	1.31
						25	1.06	27	1.06

NOTES: Unempl (lim) represents unemployment (limited definition), Unempl (comp) unemployment (comprehensive definition), Out out of labor force, Nonempl (lim) unemployment (limited definition) or out of labor force, and Nonempl (comp) unemployment (comprehensive definition) or out of labor force. All frequencies are associated with the wave occupational mobility under the standard definition.

Table 13: Nonemployment Duration Distributions for Backed Vertical Switchers: Panel 1996, Starting Wave 2

Unempl (lim)		Unempl (comp)		Out		Nonempl (lim)		Nonempl (comp)	
Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)	Num.of Weeks	Freq. (%)
0	64.52	0	64.52	0	76.67	0	64.52	0	64.52
6	12.15	6	12.15	1	23.33	6	12.15	6	12.15
7	23.33	7	23.33			8	23.33	8	23.33

NOTES: Unempl (lim) represents unemployment (limited definition), Unempl (comp) unemployment (comprehensive definition), Out out of labor force, Nonempl (lim) unemployment (limited definition) or out of labor force, and Nonempl (comp) unemployment (comprehensive definition) or out of labor force. All frequencies are associated with the wave occupational mobility under the standard definition.

Table 14: Nonemployment Duration Distributions for Horizontal Switchers and Occupational Stayers: Panel 1996 (%)

Num.of	Unempl (lim)		Unempl (comp)		Out		Nonempl (lim)		Nonempl (comp)	
Weeks	SW	ST	SW	ST	SW	ST	SW	ST	SW	ST
0	73.29	75.82	71.62	74.84	77.81	80.14	60.43	63.82	58.89	63.06
	(4.17)	(4.50)	(4.20)	(4.02)	(3.83)	(5.50)	(4.78)	(6.52)	(4.99)	(6.14)
1–4	9.54	8.97	10.58	9.52	10.22	8.69	13.53	13.61	14.42	13.99
	(2.16)	(3.51)	(2.52)	(3.74)	(2.46)	(2.18)	(3.19)	(2.17)	(3.56)	(2.06)
5–13	9.52	7.37	9.84	7.6	5	5.18	11.82	9.52	12.26	9.67
	(2.26)	(2.67)	(2.29)	(2.63)	(1.71)	(1.95)	(3.10)	(2.32)	(3.05)	(2.30)
14–52	7.33	7.72	7.65	7.91	6.06	5.13	12.45	11.76	12.65	12.01
	(1.49)	(2.59)	(1.50)	(2.41)	(2.81)	(3.12)	(3.18)	(4.04)	(3.37)	(3.92)
53+	0.32	0.13	0.32	0.13	0.91	0.87	1.78	1.28	1.78	1.28
	(0.43)	(0.30)	(0.43)	(0.30)	(0.76)	(1.22)	(1.36)	(1.50)	(1.36)	(1.50)

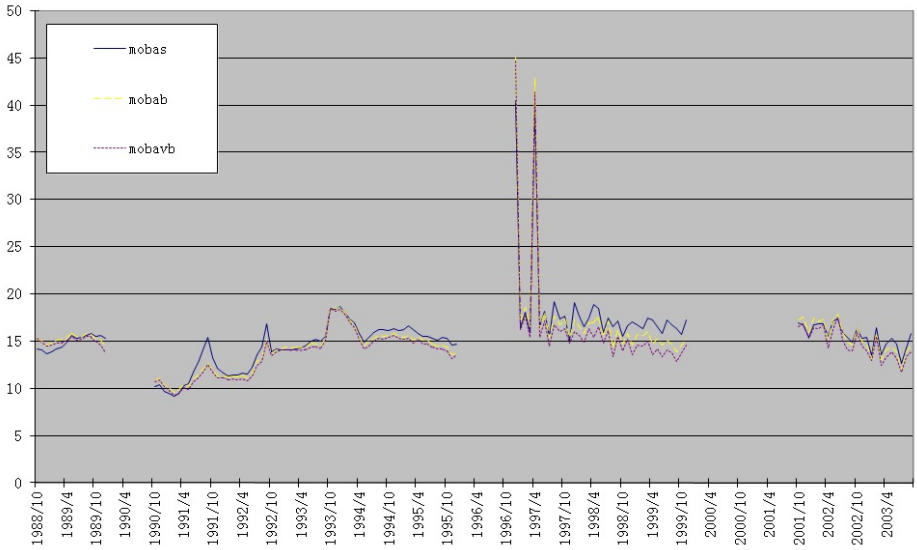
NOTES: SW refers to the backed horizontal occupational switchers, and ST the occupational stayers who change their jobs (employers). Unempl (lim) represents unemployment (limited definition), Unempl (comp) unemployment (comprehensive definition), Out out of labor force, Nonempl (lim) unemployment (limited definition) or out of labor force, and Nonempl (comp) unemployment (comprehensive definition) or out of labor force. All frequencies are associated with the wave occupational mobility under the standard definition. In parentheses are standard deviations.

Table 15: Nonemployment Duration Distributions for Horizontal Switchers and Occupational Stayers: Panel 2001 (%)

Num.of	Unempl (lim)		Unempl (comp)		Out		Nonempl (lim)		Nonempl (comp)	
Weeks	SW	ST	SW	ST	SW	ST	SW	ST	SW	ST
0	65.67	69.13	63.1	66.93	72.49	72.2	50.91	53.69	48.38	51.78
	(5.37)	(6.33)	(4.01)	(5.73)	(5.25)	(4.71)	(5.23)	(6.64)	(4.33)	(6.17)
1–4	10.32	9.85	11.94	10.77	8.64	7.94	12.01	13.44	13.59	14.36
	(2.63)	(2.80)	(2.11)	(2.38)	(2.36)	(1.79)	(2.94)	(3.89)	(3.39)	(3.88)
5–13	9.98	10.49	10.72	11.37	7.99	7.92	13.43	12.99	14.18	13.42
	(2.20)	(2.74)	(2.34)	(3.18)	(2.34)	(2.72)	(3.49)	(1.72)	(3.78)	(2.41)
14–52	13.38	10.14	13.58	10.55	10.23	9.29	21.29	18.33	21.49	18.88
	(5.55)	(4.70)	(5.48)	(4.85)	(3.99)	(3.47)	(6.40)	(5.63)	(6.32)	(5.89)
53+	0.65	0.39	0.65	0.39	0.64	0.66	2.36	1.55	2.36	1.55
	(0.95)	(0.67)	(0.95)	(0.67)	(0.58)	(1.06)	(2.17)	(1.77)	(2.17)	(1.77)

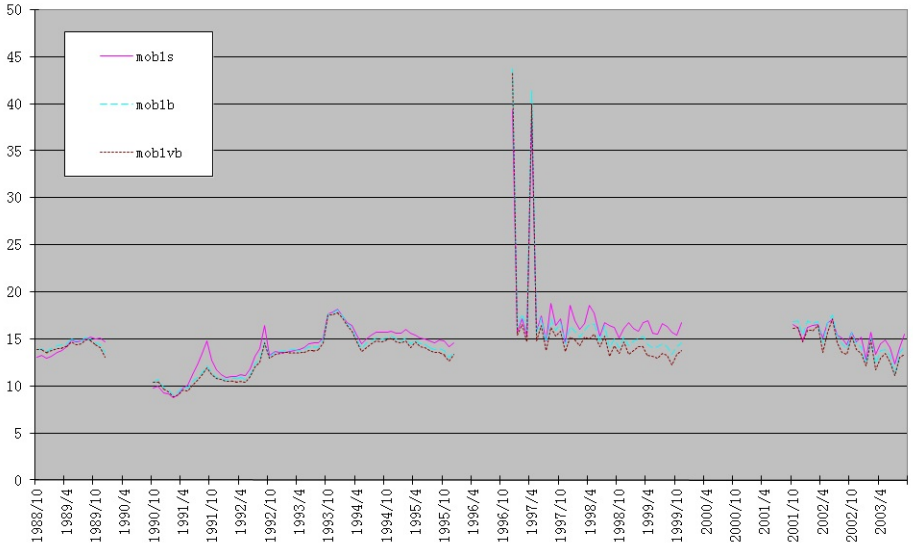
NOTES: SW refers to the backed horizontal occupational switchers, and ST the occupational stayers who change their jobs (employers). Unempl (lim) represents unemployment (limited definition), Unempl (comp) unemployment (comprehensive definition), Out out of labor force, Nonempl (lim) unemployment (limited definition) or out of labor force, and Nonempl (comp) unemployment (comprehensive definition) or out of labor force. All frequencies are associated with the wave occupational mobility under the standard definition. In parentheses are standard deviations.

Figure 1: Annual Occupational Mobility: Overall Mobility (%)



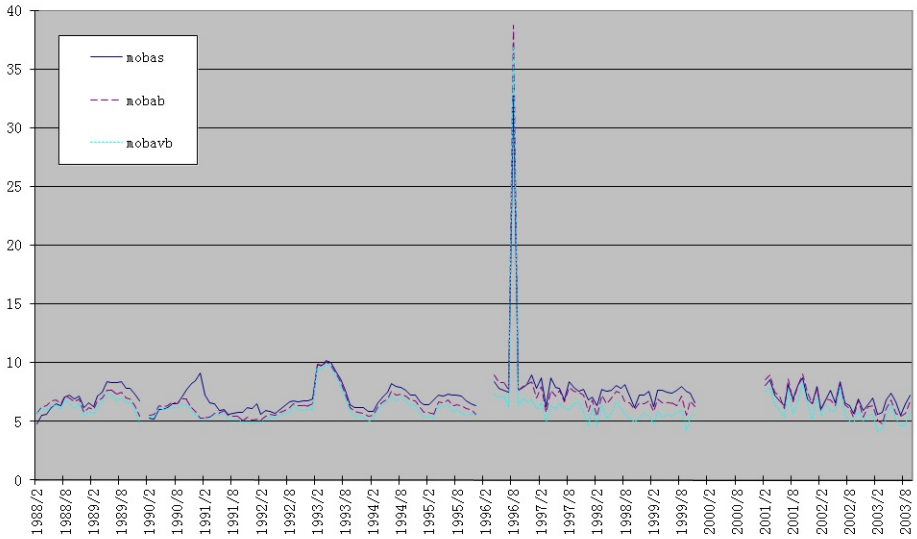
NOTES: mobas: standard definition; mobab: broad definition; mobavb: very broad definition.

Figure 2: Annual Occupational Mobility: Horizontal Mobility (%)



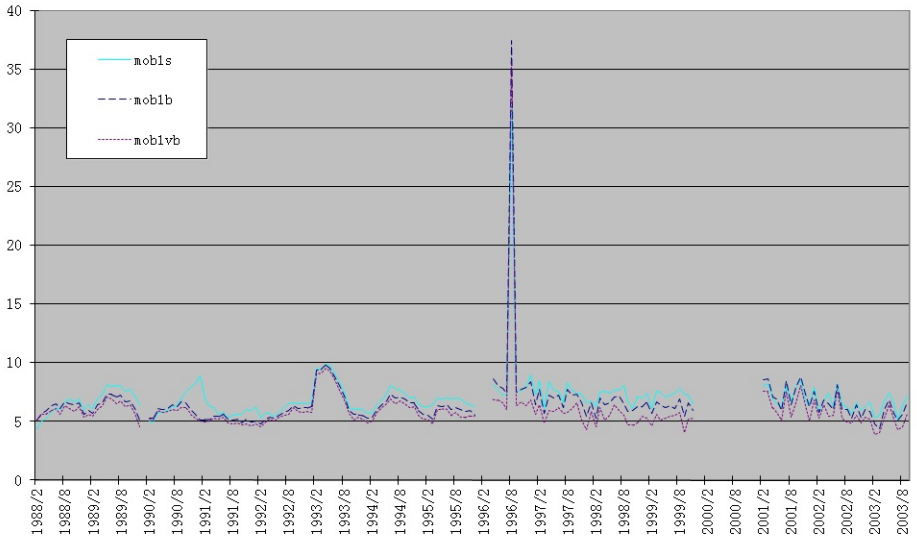
NOTES: mob1s: standard definition; mob1b: broad definition; mob1vb: very broad definition.

Figure 3: Wave Occupational Mobility: Overall Mobility (%)



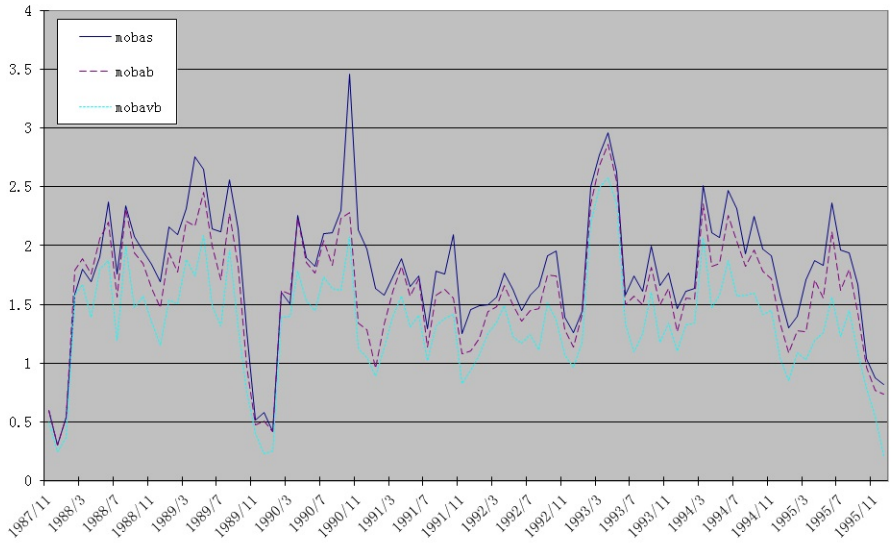
NOTES: mobas: standard definition; mobab: broad definition; mobavb: very broad definition.

Figure 4: Wave Occupational Mobility: Horizontal Mobility (%)



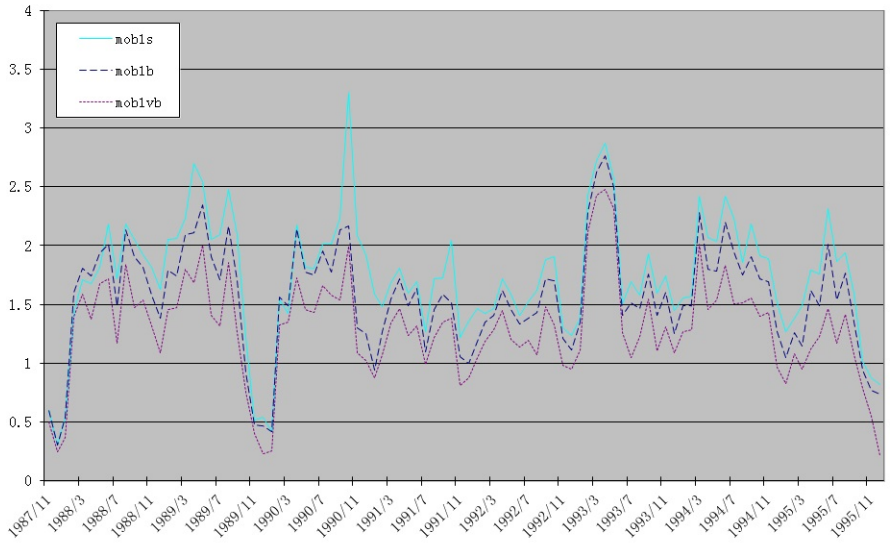
NOTES: mob1s: standard definition; mob1b: broad definition; mob1vb: very broad definition.

Figure 5: Monthly Occupational Mobility: Overall Mobility (%)



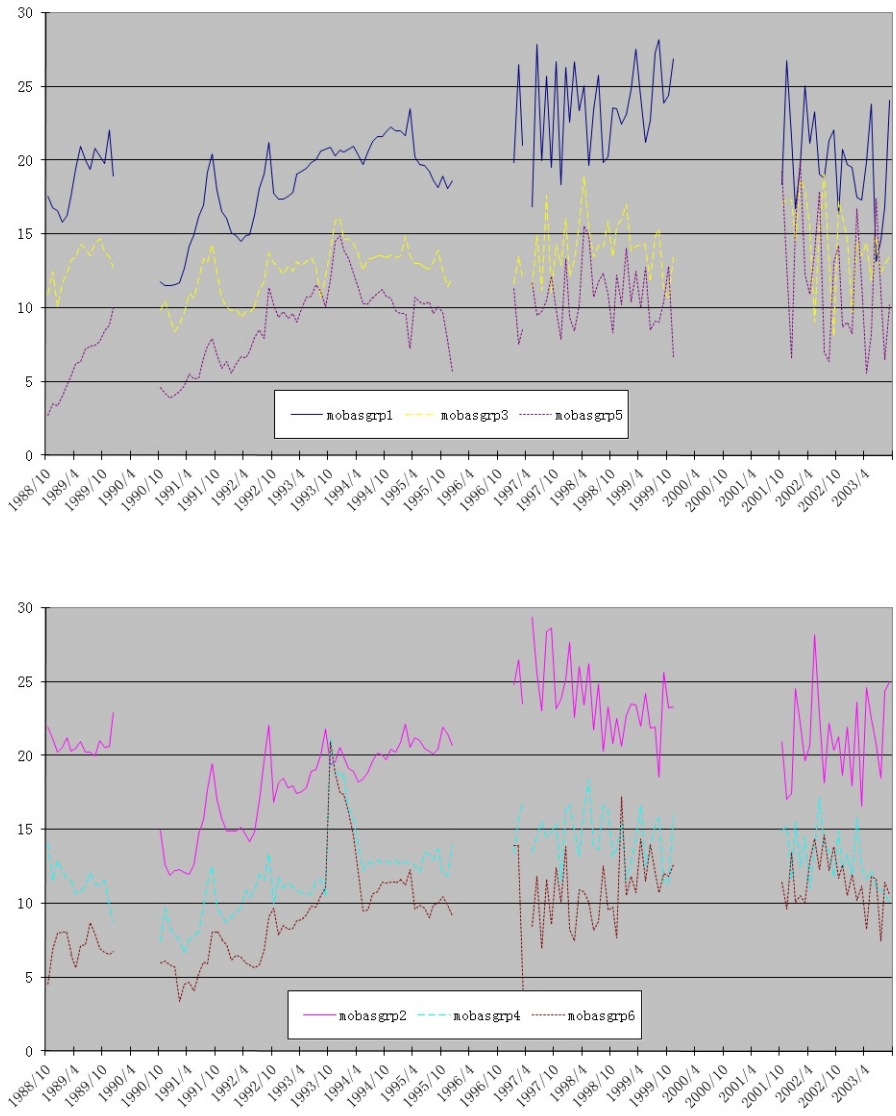
NOTES: mobas: standard definition; mobab: broad definition; mobavb: very broad definition.

Figure 6: Monthly Occupational Mobility: Horizontal Mobility (%)



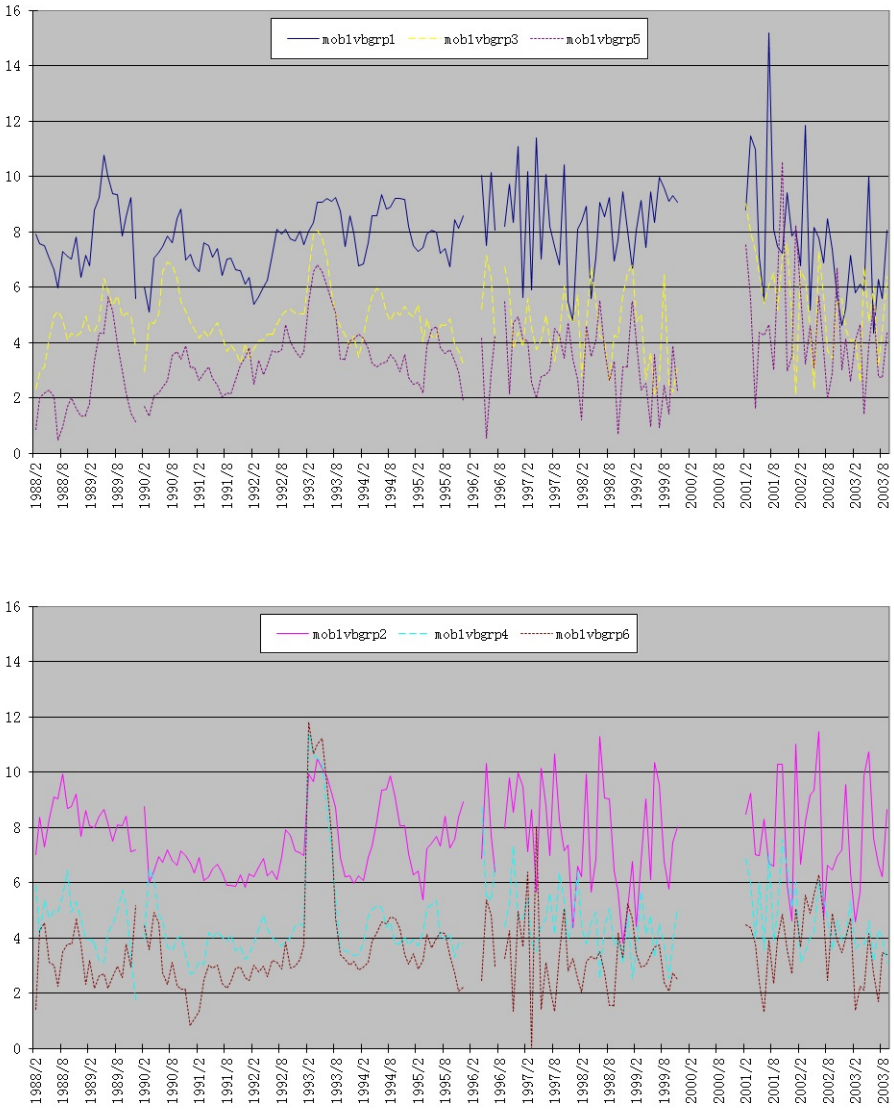
NOTES: mob1s: standard definition; mob1b: broad definition; mob1vb: very broad definition.

Figure 7: Annual Overall Mobility (Standard Def.) by Age and Education Level (%)



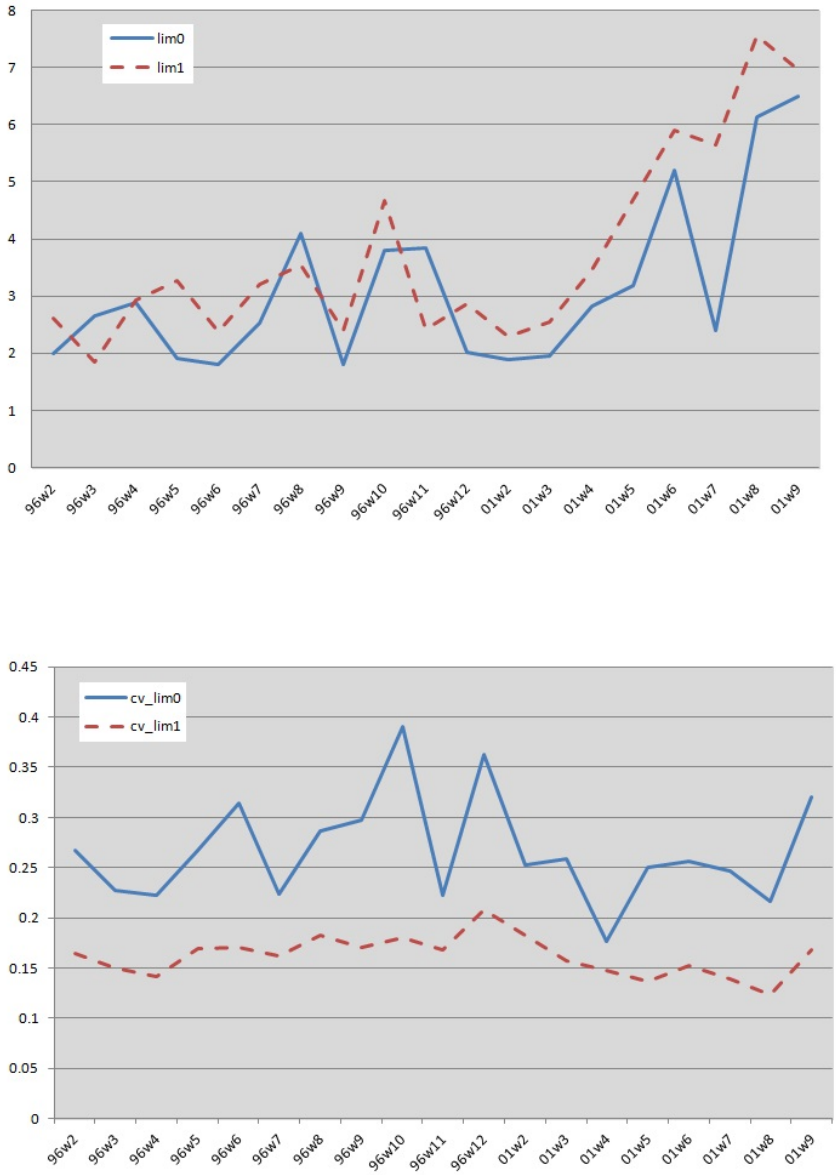
NOTES: Low-education workers are in top panel and high-education workers in bottom panel. Outliers are excluded (see Footnote 12). mobas: the overall occupational mobility under standard definition; grp1: the group with young-age and low-education; grp2: the group with young-age and high-education; grp3: the group with middle-age and low-education; grp4: the group with middle-age and high-education; grp5: the group with old-age and low-education; grp6: the group with old-age and high-education.

Figure 8: Wave Horizontal Mobility (Very Broad Def.) by Age and Education Level (%)



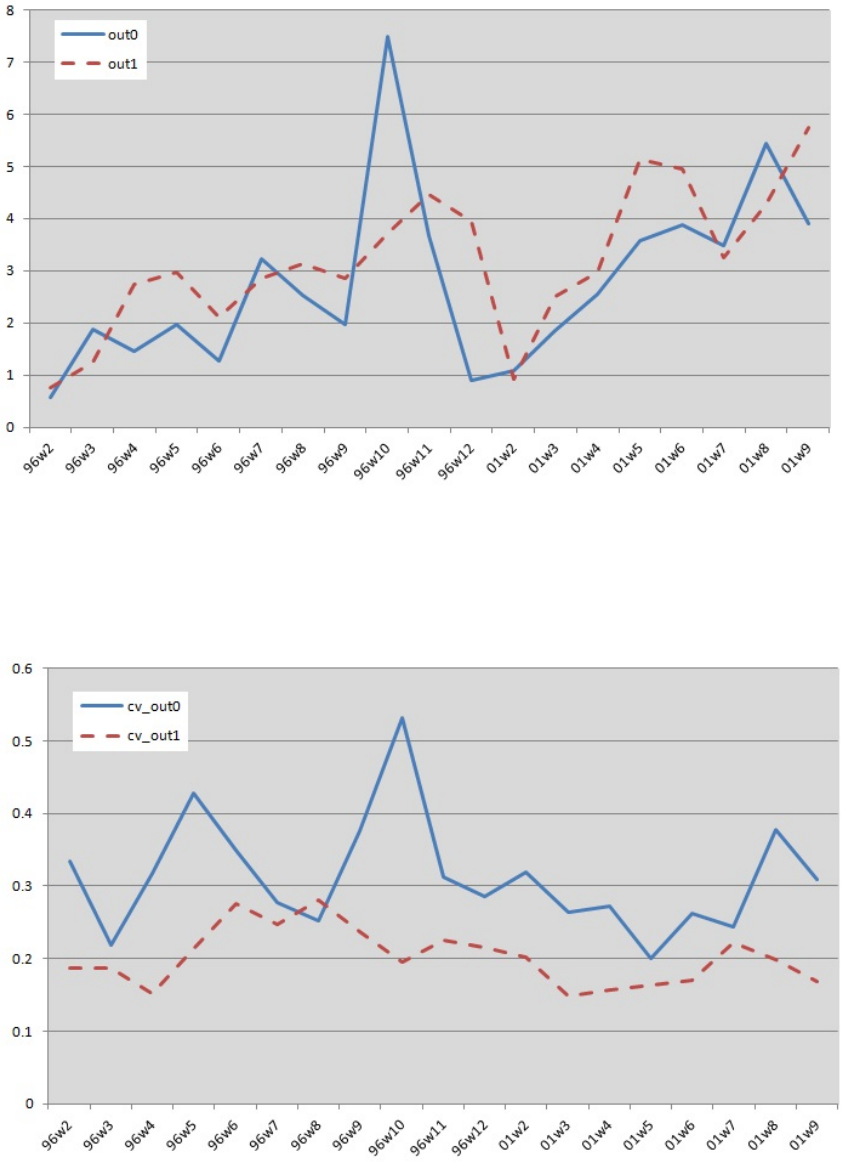
NOTES: Low-education workers are in top panel and high-education workers in bottom panel. Outliers are excluded (see Footnote 12). mob1vb: the horizontal occupational mobility under very broad definition; grp1: the group with young-age and low-education; grp2: the group with young-age and high-education; grp3: the group with middle-age and low-education; grp4: the group with middle-age and high-education; grp5: the group with old-age and low-education; grp6: the group with old-age and high-education.

Figure 9: Mean Unemployment Duration (Limited Def.) and Coeff. of Variation



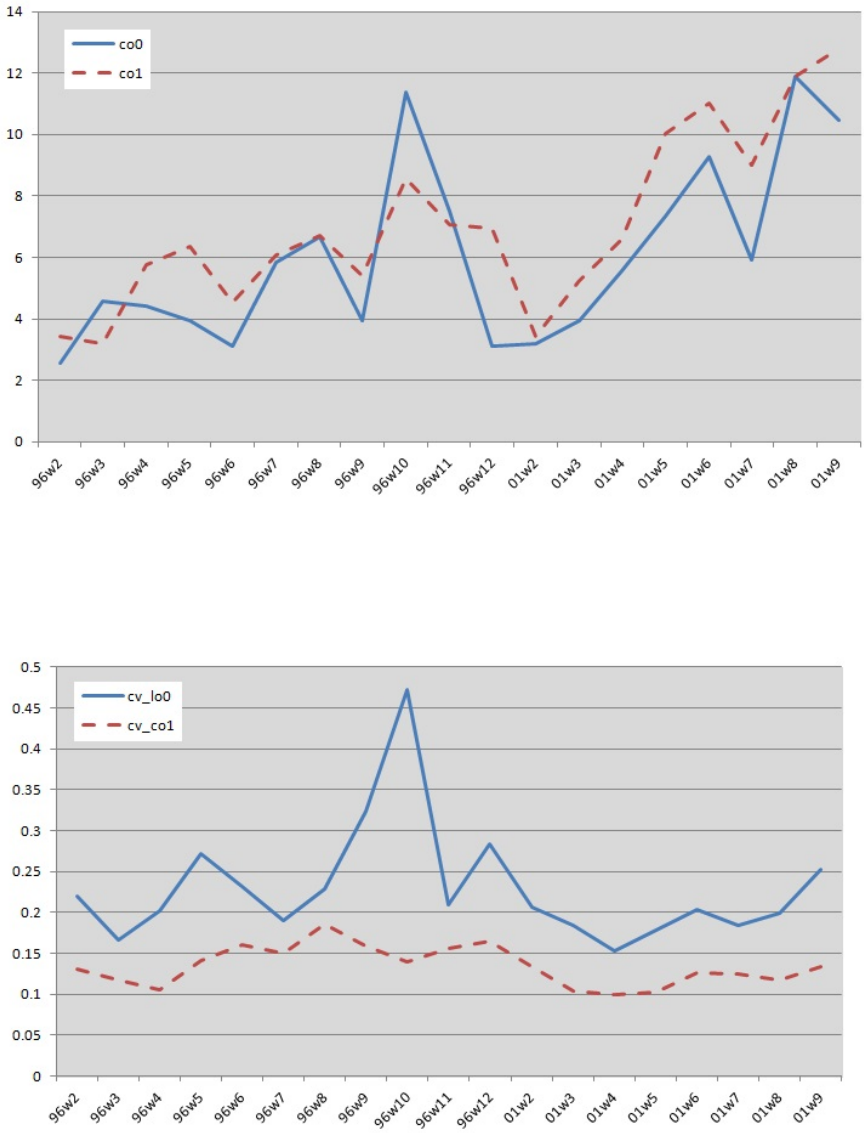
NOTES: Mean unemployment duration (limited definition), in the units of weeks, is in top panel and its coefficient of variation in bottom panel. lim0: mean unemployment duration for occupational stayers; lim1: mean unemployment duration for horizontal switchers; cv: coefficient of variation.

Figure 10: Mean Out of Labor Force Duration and Coeff. of Variation



NOTES: Mean out of labor force duration, in the units of weeks, is in top panel and its coefficient of variation in bottom panel. out0: mean out of labor force duration for occupational stayers; out1: mean out of labor force duration for horizontal switchers; cv: coefficient of variation.

Figure 11: Mean Nonemployment Duration (Comprehensive Def.) and Coeff. of Variation



NOTES: Mean nonemployment duration (comprehensive definition), in the units of weeks, is in top panel and its coefficient of variation in bottom panel. co0: mean nonemployment duration for occupational stayers; co1: mean nonemployment duration for horizontal switchers; cv: coefficient of variation.

Appendices

A 1990 Census of Population Occupation Classification System[25]

The list presents the occupational classification developed for the 1990 Census of Population and Housing. There are 501 categories for the employed with 1 additional category for the experienced unemployed and 3 additional categories for the Armed Forces. These categories are grouped into 6 summary groups and 13 major groups. The classification is developed from the 1980 Standard Occupational Classification (SOC1980). "n.e.c." is the abbreviation for not elsewhere classified. In parentheses are corresponding SOC1980 codes.

1990 Census code	Occupation category
	MANAGERIAL AND PROFESSIONAL SPECIALTY OCCUPATIONS
	Executive, Administrative, and Managerial Occupations
3	Legislators (111)
4	Chief executives and general administrators, public administration (112)
5	Administrators and officials, public administration (1132-1139)
6	Administrators, protective services (1131)
7	Financial managers (122)
8	Personnel and labor relations managers (123)
9	Purchasing managers (124)
13	Managers, marketing, advertising, and public relations (125)
14	Administrators, education and related fields (128)
15	Managers, medicine and health (131)
16	Postmasters and mail superintendents (1344)
17	Managers, food serving and lodging establishments (1351)
18	Managers, properties and real estate (1353)
19	Funeral directors (pt 1359)
21	Managers, service organizations, n.e.c. (127, 1352, 1354, pt 1359)
22	Managers and administrators, n.e.c. (121, 126, 132-1343, 136-139)
	Management Related Occupations
23	Accountants and auditors (1412)
24	Underwriters (1414)
25	Other financial officers (1415, 1419)
26	Management analysts (142)
27	Personnel, training, and labor relations specialists (143)
28	Purchasing agents and buyers, farm products (1443)
29	Buyers, wholesale and retail trade except farm products (1442)
33	Purchasing agents and buyers, n.e.c. (1449)
34	Business and promotion agents (145)
35	Construction inspectors (1472)

[25]Source: SIPP 1993 Panel, Longitudinal File Codebook, Appendix A-4.

36	Inspectors and compliance officers, except construction (1473)
37	Management related occupations, n.e.c. (149)
	Professional Specialty Occupations
	Engineers, Architects, and Surveyors
43	Architects (161)
	Engineers
44	Aerospace (1622)
45	Metallurgical and materials (1623)
46	Mining (1624)
47	Petroleum (1625)
48	Chemical (1626)
49	Nuclear (1627)
53	Civil (1628)
54	Agricultural (1632)
55	Electrical and electronic (1633, 1636)
56	Industrial (1634)
57	Mechanical (1635)
58	Marine and naval architects (1637)
59	Engineers, n.e.c. (1639)
63	Surveyors and mapping scientists (164)
	Mathematical and Computer Scientists
64	Computer systems analysts and scientists (171)
65	Operations and systems researchers and analysts (172)
66	Actuaries (1732)
67	Statisticians (1733)
68	Mathematical scientists, n.e.c. (1739)
	Natural Scientists
69	Physicists and astronomers (1842, 1843)
73	Chemists, except biochemists (1845)
74	Atmospheric and space scientists (1846)
75	Geologists and geodesists (1847)
76	Physical scientists, n.e.c. (1849)
77	Agricultural and food scientists (1853)
78	Biological and life scientists (1854)
79	Forestry and conservation scientists (1852)
83	Medical scientists (1855)
	Health Diagnosing Occupations
84	Physicians (261)
85	Dentists (262)
86	Veterinarians (27)
87	Optometrists (281)
88	Podiatrists (283)
89	Health diagnosing practitioners, n.e.c. (289)
	Health Assessment and Treating Occupations
95	Registered nurses (29)
96	Pharmacists (301)
97	Dietitians (302)
	Therapists
98	Respiratory therapists (3031)
99	Occupational therapists (3032)
103	Physical therapists (3033)

104 Speech therapists (3034)
105 Therapists, n.e.c. (3039)
106 Physicians assistants (304)

Teachers, Postsecondary

113 Earth, environmental, and marine science teachers (2212)
114 Biological science teachers (2213)
115 Chemistry teachers (2214)
116 Physics teachers (2215)
117 Natural science teachers, n.e.c. (2216)
118 Psychology teachers (2217)
119 Economics teachers (2218)
123 History teachers (2222)
124 Political science teachers (2223)
125 Sociology teachers (2224)
126 Social science teachers, n.e.c. (2225)
127 Engineering teachers (2226)
128 Mathematical science teachers (2227)
129 Computer science teachers (2228)
133 Medical science teachers (2231)
134 Health specialties teachers (2232)
135 Business, commerce, and marketing teachers (2233)
136 Agriculture and forestry teachers (2234)
137 Art, drama, and music teachers (2235)
138 Physical education teachers (2236)
139 Education teachers (2237)
143 English teachers (2238)
144 Foreign language teachers (2242)
145 Law teachers (2243)
146 Social work teachers (2244)
147 Theology teachers (2245)
148 Trade and industrial teachers (2246)
149 Home economics teachers (2247)
153 Teachers, postsecondary, n.e.c. (2249)
154 Postsecondary teachers, subject not specified

Teachers, Except Postsecondary

155 Teachers, prekindergarten and kindergarten (231)
156 Teachers, elementary school (232)
157 Teachers, secondary school (233)
158 Teachers, special education (235)
159 Teachers, n.e.c. (236, 239)
163 Counselors, educational and vocational (24)

Librarians, Archivists, and Curators

164 Librarians (251)
165 Archivists and curators (252)

Social Scientists and Urban Planners

166 Economists (1912)
167 Psychologists (1915)
168 Sociologists (1916)
169 Social scientists, n.e.c. (1913, 1914, 1919)
173 Urban planners (192)

Social, Recreation, and Religious Workers

174 Social workers (2032)
175 Recreation workers (2033)
176 Clergy (2042)
177 Religious workers, n.e.c. (2049)

Lawyers and Judges

178 Lawyers (211)
179 Judges (212)

Writers, Artists, Entertainers, and Athletes

183 Authors (321)
184 Technical writers (398)
185 Designers (322)
186 Musicians and composers (323)
187 Actors and directors (324)
188 Painters, sculptors, craft-artists, and artist printmakers (325)
189 Photographers (326)
193 Dancers (327)
194 Artists, performers, and related workers, n.e.c. (328, 329)
195 Editors and reporters (331)
197 Public relations specialists (332)
198 Announcers (333)
199 Athletes (34)

TECHNICAL, SALES, AND ADMINISTRATIVE SUPPORT OCCUPATIONS

Technicians and Related Support Occupations

Health Technologists and Technicians

203 Clinical laboratory technologists and technicians (362)
204 Dental hygienists (363)
205 Health record technologists and technicians (364)
206 Radiologic technicians (365)
207 Licensed practical nurses (366)
208 Health technologists and technicians, n.e.c. (369)

Technologists and Technicians, Except Health

Engineering and Related Technologists and Technicians

213 Electrical and electronic technicians (3711)
214 Industrial engineering technicians (3712)
215 Mechanical engineering technicians (3713)
216 Engineering technicians, n.e.c. (3719)
217 Drafting occupations (372)
218 Surveying and mapping technicians (373)

Science Technicians

223 Biological technicians (382)
224 Chemical technicians (3831)
225 Science technicians, n.e.c. (3832, 3833, 384, 389)

Technicians; Except Health, Engineering, and Science

226 Airplane pilots and navigators (825)
227 Air traffic controllers (392)
228 Broadcast equipment operators (393)
229 Computer programmers (3971, 3972)
233 Tool programmers, numerical control (3974)
234 Legal assistants (396)
235 Technicians, n.e.c. (399)

Sales Occupations

243 Supervisors and proprietors, sales occupations (40)
Sales Representatives, Finance and Business Services
253 Insurance sales occupations (4122)
254 Real estate sales occupations (4123)
255 Securities and financial services sales occupations (4124)
256 Advertising and related sales occupations (4153)
257 Sales occupations, other business services (4152)
Sales Representatives, Commodities Except Retail
258 Sales engineers (421)
259 Sales representatives, mining, manufacturing, and wholesale (423, 424)
Sales Workers, Retail and Personal Services
263 Sales workers, motor vehicles and boats (4342, 4344)
264 Sales workers, apparel (4346)
265 Sales workers, shoes (4351)
266 Sales workers, furniture and home furnishings (4348)
267 Sales workers; radio, TV, hi-fi, and appliances (4343, 4352)
268 Sales workers, hardware and building supplies (4353)
269 Sales workers, parts (4367)
274 Sales workers, other commodities (4345, 4347, 4354, 4356, 4359,4362, 4369)
275 Sales counter clerks (4363)
276 Cashiers (4364)
277 Street and door-to-door sales workers (4366)
278 News vendors (4365)
Sales Related Occupations
283 Demonstrators, promoters and models, sales (445)
284 Auctioneers (447)
285 Sales support occupations, n.e.c. (444, 446, 449)
Administrative Support Occupations, Including Clerical
Supervisors, Administrative Support Occupations
303 Supervisors, general office (4511,4513,4514,4516,4519,4529)
304 Supervisors, computer equipment operators (4512)
305 Supervisors, financial records processing (4521)
306 Chief communications operators (4523)
307 Supervisors; distribution, scheduling, and adjusting clerks (4522, 4524-4528)
Computer Equipment Operators
308 Computer operators (4612)
309 Peripheral equipment operators (4613)
Secretaries, Stenographers, and Typists
313 Secretaries (4622)
314 Stenographers (4623)
315 Typists (4624)
Information Clerks
316 Interviewers (4642)
317 Hotel clerks (4643)
318 Transportation ticket and reservation agents (4644)
319 Receptionists (4645)
323 Information clerks, n.e.c. (4649)
Records Processing Occupations, Except Financial
325 Classified-ad clerks (4662)
326 Correspondence clerks (4663)
327 Order clerks (4664)

328 Personnel clerks, except payroll and timekeeping (4692)
329 Library clerks (4694)
335 File clerks (4696)
336 Records clerks (4699)

Financial Records Processing Occupations

337 Bookkeepers, accounting, and auditing clerks (4712)
338 Payroll and timekeeping clerks (4713)
339 Billing clerks (4715)
343 Cost and rate clerks (4716)
344 Billing, posting, and calculating machine operators (4718)

Duplicating, Mail and Other Office Machine Operators

345 Duplicating machine operators (4722)
346 Mail preparing and paper handling machine operators (4723)
347 Office machine operators, n.e.c. (4729)

Communications Equipment Operators

348 Telephone operators (4732)
353 Communications equipment operators, n.e.c. (4733, 4739)

Mail and Message Distributing Occupations

354 Postal clerks, ext. mail carriers (4742)
355 Mail carriers, postal service (4743)
356 Mail clerks, ext. postal service (4744)
357 Messengers (4745)

Material Recording, Scheduling, and Distributing Clerks

359 Dispatchers (4751)
363 Production coordinators (4752)
364 Traffic, shipping, and receiving clerks (4753)
365 Stock and inventory clerks (4754)
366 Meter readers (4755)
368 Weighers, measurers, checkers and samplers (4756, 4757)
373 Expediters (4758)
374 Material recording, scheduling, and distributing clerks, n.e.c. (4759)

Adjusters and Investigators

375 Insurance adjusters, examiners, and investigators (4782)
376 Investigators and adjusters, except insurance (4783)
377 Eligibility clerks, social welfare (4784)
378 Bill and account collectors (4786)

Miscellaneous Administrative Support Occupations

379 General office clerks (463)
383 Bank tellers (4791)
384 Proofreaders (4792)
385 Data-entry keyers (4793)
386 Statistical clerks (4794)
387 Teachers aides (4795)
389 Administrative support occupations, n.e.c. (4787, 4799)

SERVICE OCCUPATIONS

Private Household Occupations

403 Launderers and ironers (503)
404 Cooks, private household (504)
405 Housekeepers and butlers (505)
406 Child care workers, private household (506)
407 Private household cleaners and servants (502, 507, 509)

	Protective Service Occupations
	Supervisors, Protective Service Occupations
413	Supervisors, firefighting and fire prevention occupations (5111)
414	Supervisors, police and detectives (5112)
415	Supervisors, guards (5113)
	Firefighting and Fire Prevention Occupations
416	Fire inspection and fire prevention occupations (5122)
417	Firefighting occupations (5123)
	Police and Detectives
418	Police and detectives, public service (5132)
423	Sheriffs, bailiffs, and other law enforcement officers (5134)
424	Correctional institution officers (5133)
	Guards
425	Crossing guards (5142)
426	Guards and police, exc. public service (5144)
427	Protective service occupations, n.e.c. (5149)
	Service Occupations, Except Protective and Household
	Food Preparation and Service Occupations
433	Supervisors, food preparation and service occupations (5211)
434	Bartenders (5212)
435	Waiters and waitresses (5713)
436	Cooks (5214. 5215)
438	Food counter, fountain and related occupations (5216)
439	Kitchen workers, food preparation (5217)
443	Waiters/waitresses assistants (5218)
444	Miscellaneous food preparation occupations (5219)
	Health Service Occupations
445	Dental assistants (5232)
446	Health aides, except nursing (5233)
447	Nursing aides, orderlies, and attendants (5236)
	Cleaning and Building Service Occupations, except Household
448	Supervisors, cleaning and building service workers (5241)
449	Maids and housemen (5242,5249)
453	Janitors andcleaners (5244)
454	Elevator operators (5245)
455	Pest control occupations (5246)
	Personal Service Occupations
456	Supervisors, personal service occupations (5251)
457	Barbers (5252)
458	Hairdressers and cosmetologists (5253)
459	Attendants, amusement and recreation facilities (5254)
461	Guides (5255)
462	Ushers (5256)
463	Public transportation attendants (5257)
464	Baggage porters and bellhops (5262)
465	Welfare service aides (5263)
466	Family child care providers (pt 5264)
467	Early childhood teachers assistants (pt 5264)
468	Child care workers, n.e.c. (pt 5264)
469	Personal service occupations, n.e.c. (5258, 5269)
	FARMING, FORESTRY, AND FISHING OCCUPATIONS

Farm Operators and Managers
473 Farmers, except horticultural (5512-5514)
474 Horticultural specialty farmers (5515)
475 Managers, farms, except horticultural (5522-5524)
476 Managers, horticultural specialty farms (5525)
Other Agricultural and Related Occupations
Farm Occupations, Except Managerial
477 Supervisors, farm workers (5611)
479 Farm workers (5612-5617)
483 Marine life cultivation workers (5618)
484 Nursery workers (5619)
Related Agricultural Occupations
485 Supervisors, related agricultural occupations (5621)
486 Groundskeepers and gardeners, except farm (5622)
487 Animal caretakers, except farm (5624)
488 Graders and sorters, agricultural products (5625)
489 Inspectors, agricultural products (5627)
Forestry and Logging Occupations
494 Supervisors, forestry, and logging workers (571)
495 Forestry workers, except logging (572)
496 Timber cutting and logging occupations (573, 579)
Fishers, Hunters, and Trappers
497 Captains and other officers, fishing vessels (pt 8241)
498 Fishers (583)
499 Hunters and trappers (584)
PRECISION PRODUCTION, CRAFT, AND REPAIR OCCUPATIONS
Mechanics and Repairers
503 Supervisors, mechanics and repairers (60)
Mechanics and Repairers, Except Supervisors
Vehicle and Mobile Equipment Mechanics and Repairers
505 Automobile mechanics (pt 6111)
506 Automobile mechanic apprentices (pt 6111)
507 Bus, truck, and stationary engine mechanics (6112)
508 Aircraft engine mechanics (6113)
509 Small engine repairers (6114)
514 Automobile body and related repairers (6115)
515 Aircraft mechanics, ext. engine (6116)
516 Heavy equipment mechanics (6117)
517 Farm equipment mechanics (6118)
518 Industrial machinery repairers (613)
519 Machinery maintenance occupations (614)
Electrical and Electronic Equipment Repairers
523 Electronic repairers, communications and industrial equipment (6151, 6153, 6155)
525 Data processing equipment repairers (6154)
526 Household appliance and power tool repairers (6156)
527 Telephone line installers and repairers (6157)
529 Telephone installers and repairers (6158)
533 Miscellaneous electrical and electronic equipment repairers (6152, 6159)
534 Heating, air conditioning, and refrigeration mechanics (616)
Miscellaneous Mechanics and Repairers
535 Camera, watch, and musical instrument repairers (6171,6172)

536 Locksmiths and safe repairers (6173)
538 Office machine repairers (6174)
539 Mechanical controls and valve repairers (6175)
543 Elevator installers and repairers (6176)
544 Millwrights (6178)
547 Specified mechanics and repairers, n.e.c. (6177, 6179)
549 Not specified mechanics and repairers

Construction Trades

Supervisors, Construction Occupations

553 Supervisors; brickmasons, stonemasons, and tile setters (6312)
554 Supervisors, carpenters and related workers (6313)
555 Supervisors, electricians and power transmission installers (6314)
556 Supervisors; painters, paperhangers, and plasterers (6315)
557 Supervisors; plumbers, pipefitters, and steamfitters (6316)
558 Supervisors, construction n.e.c. (6311, 6318)

Construction Trades, Except Supervisors

563 Brickmasons and stonemasons (pt 6412, pt 6413)
564 Brickmason and stonemason apprentices (pt 6412, pt 6413)
565 Tile setters, hard and soft (pt 6414, pt 6462)
566 Carpet installers (pt 6462)
567 Carpenters (pt 6422)
569 Carpenter apprentices (pt 6422)
573 Drywall installers (6424)
575 Electricians (pt 6432)
576 Electrician apprentices (pt 6432)
577 Electrical power installers and repairers (6433)
579 Painters, construction and maintenance (6442)
583 Paperhangers (6443)
584 Plasterers (6444)
585 Plumbers, pipefitters, and steamfitters (pt 645)
587 Plumber, pipefitter, and steamfitter apprentices (pt 645)
588 Concrete and terrazzo finishers (6463)
589 Glaziers (6464)
593 Insulation workers (6465)
594 Paving, surfacing, and tamping equipment operators (6466)
595 Roofers (6468)
596 Sheetmetal duct installers (6472)
597 Structural metal workers (6473)
598 Drillers, earth (6474)
599 Construction trades, n.e.c. (6467, 6475, 6476, 6479)

Extractive Occupations

613 Supervisors, extractive occupations (632)
614 Drillers, oil well (652)
615 Explosives workers (653)
616 Mining machine operators (654)
617 Mining occupations, n.e.c. (656)

Precision Production Occupations

628 Supervisors, production occupations (67, 71)

Precision Metal Working Occupations

634 Tool and die makers (pt 6811)
635 Tool and die maker apprentices (pt 6811)

636 Precision assemblers, metal (6812)
637 Machinists (pt 6813)
639 Machinist apprentices (pt 6813)
643 Boilermakers (6814)
644 Precision grinders, filers, and tool sharpeners (6816)
645 Patternmakers and model makers, metal (6817)
646 Lay-out workers (6821)
647 Precious stones and metals workers (Jewelers) (6822, 6866)
649 Engravers, metal (6823)
653 Sheet metal workers (pt 6824)
654 Sheet metal worker apprentices (pt 6824)
655 Miscellaneous precision metal workers (6829)
Precision Woodworking Occupations
656 Patternmakers and model makers, wood (6831)
657 Cabinet makers and bench carpenters (6832)
658 Furniture and wood finishers (6835)
659 Miscellaneous precision woodworkers (6839)
Precision Textile, Apparel, and Furnishings Machine Workers
666 Dressmakers (pt 6852, pt 7752)
667 Tailors (pt 6852)
668 Upholsterers (6853)
669 Shoe repairers (6854)
674 Miscellaneous precision apparel and fabric workers (6856, 6859, pt 7752)
Precision Workers, Assorted Materials
675 Hand molders and shapers, except jewelers (6861)
676 Patternmakers, lay-out workers, and cutters (6862)
677 Optical goods workers (6864, pt 7477, pt 7677)
678 Dental laboratory and medical appliance technicians (6865)
679 Bookbinders (6844)
683 Electrical and electronic equipment assemblers (6867)
684 Miscellaneous precision workers, n.e.c. (6869)
Precision Food Production Occupations
686 Butchers and meat cutters (6871)
687 Bakers (6872)
688 Food batchmakers (6873,6879)
Precision Inspectors, Testers, and Related Workers
689 Inspectors, testers, and graders (6881, 828)
693 Adjusters and calibrators (6882)
Plant and System Operators
694 Water and sewage treatment plant operators (691)
695 Power plant operators (pt 693)
696 Stationary engineers (pt 693, 7668)
699 Miscellaneous plant and system operators (692, 694, 695, 696)
OPERATORS, FABRICATORS, AND LABORERS
Machine Operators, Assemblers, and Inspectors
Machine Operators and Tenders, Except Precision
Metalworking and Plastic Working Machine Operators
703 Lathe and turning machine set-up operators (7312)
704 Lathe and turning machine operators (7512)
705 Milling and planing machine operators (7313, 7513)
706 Punching and stamping press machine operators (7314, 7317,7514, 7517)

707 Rolling machine operators (7316, 7516)
708 Drilling and boring machine operators (7318, 7518)
709 Grinding, abrading, buffing, and polishing machine operators (7322, 7324, 7522)
713 Forging machine operators (7319, 7519)
714 Numerical control machine operators (7326)
715 Miscellaneous metal, plastic, stone, and glass working machine operators (7329, 7529)
717 Fabricating machine operators, n.e.c. (7339, 7539)

Metal and Plastic Processing Machine Operators

719 Molding and casting machine operators (7315, 7342, 7515,7542)
723 Metal plating machine operators (7343, 7543)
724 Heat treating equipment operators (7344, 7544)
725 Miscellaneous metal and plastic processing machine operators (7349, 7549)

Woodworking Machine Operators

726 Wood lathe, routing, and planing machine operators (7431,7432. 7631, 7632)
727 Sawing machine operators (7433, 7633)
728 Shaping and joining machine operators (7435, 7635)
729 Nailing and tacking machine operators (7636)
733 Miscellaneous woodworking machine operators (7434, 7439, 7634. 7639)

Printing Machine Operators

734 Printing press operators (7443, 7643)
735 Photoengravers and lithographers (6842, 7444, 7644)
736 Typesetters and compositors (6841, 7642)
737 Miscellaneous printing machine operators (6849, 7449, 7649)

Textile, Apparel, and Furnishings Machine Operators

738 Winding and twisting machine operators (7451, 7651)
739 Knitting, looping, taping, and weaving machine operators (7452, 7652)
743 Textile cutting machine operators (7654)
744 Textile sewing machine operators (7655)
745 Shoe machine operators (7656)
747 Pressing machine operators (7657)
748 Laundering and dry cleaning machine operators (6855, 7658)
749 Miscellaneous textile machine operators (7459, 7659)

Machine Operators, Assorted Materials

753 Cementing and gluing machine operators (7661)
754 Packaging and filling machine operators (7462, 7662)
755 Extruding and forming machine operators 7463, 7663)
756 Mixing and blending machine operators (7664)
757 Separating, filtering, and clarifying machine operators (7476, 7666, 7676)
758 Compressing and compacting machine operators (7467, 7667)
759 Painting and paint spraying machine operators (7669)
763 Roasting and baking machine operators, food (7472, 7672)
764 Washing, cleaning, and pickling machine operators (7673)
765 Folding machine operators (7474, 7674)
766 Furnace, kiln, and oven operators, ext. food (7675)
768 Crushing and grinding machine operators (pt 7477, pt 7677)
769 Slicing and cutting machine operators (7478, 7678)
773 Motion picture projectionists (pt 7479)
774 Photographic process machine operators (6863, 6868, 7671)
777 Miscellaneous machine operators, n.e.c. (pt 7479, 7665, 7679)
779 Machine operators, not specified

Fabricators, Assemblers, and Hand Working Occupations

783 Welders and cutters (7332, 7532, 7714)
784 Solderers and brazers (7333, 7533, 7717)
785 Assemblers (772, 774)
786 Hand cutting and trimming occupations (7753)
787 Hand molding, casting, and forming occupations (7754, 7755)
789 Hand painting, coating, and decorating occupations (7756)
793 Hand engraving and printing occupations (7757)
795 Miscellaneous hand working occupations (7758, 7759)
Production Inspectors, Testers, Samplers, and Weighers
796 Productioninspectors, checkers, and examiners (782, 787)
797 Production testers (783)
798 Production samplers and weighers (784)
799 Graders and sorters, ext. agricultural (785)
Transportation and Material Moving Occupations
Motor Vehicle Operators
803 Supervisors, motor vehicle operators (8111)
804 Truck drivers (8212-8214)
806 Driver-sales workers (8218)
808 Bus drivers (8215)
809 Taxicab drivers and chauffeurs (8216)
813 Parking lot attendants (874)
814 Motor transportation occupations, n.e.c. (8219)
Transportation Occupations, Except Motor Vehicles
Rail Transportation Occupations
823 Railroad conductors and yardmasters (8113)
824 Locomotive operating occupations (8232)
825 Railroad brake, signal, and switch operators (8233)
826 Rail vehicle operators, n.e.c. (8239)
Water Transportation Occupations
828 Ship captains and mates, except fishing boats (pt 8241, 8242)
829 Sailors and deckhands (8243)
833 Marine engineers (8244)
834 Bridge, lock, and lighthouse tenders (8245)
Material Moving Equipment Operators
843 Supervisors, material moving equipment operators (812)
844 Operating engineers (8312)
845 Longshore equipment operators (8313)
848 Hoist and winch operators (8314)
849 Crane and tower operators (8315)
853 Excavating and loading machine operators (8316)
855 Grader, dozer, and scraper operators (8317)
856 Industrial truck and tractor equipment operators (8318)
859 Miscellaneous material moving equipment operators (8319)
Handlers, Equipment Cleaners, Helpers, and Laborers
864 Supervisors, handlers, equipment cleaners, and laborers, n.e.c. (85)
865 Helpers, mechanics and repairers (863)
Helpers, Construction and Extractive Occupations
866 Helpers, construction trades (8641-8645, 8648)
867 Helpers, surveyor (8646)
868 Helpers, extractive occupations (86.5)
869 Construction laborers (871)

874	Production helpers (861, 862)
	Freight, Stock, and Material Handlers
875	Garbage collectors (8722)
876	Stevedores (8723)
877	Stock handlers and baggers (8724)
878	Machine feeders and offbearers (8725)
883	Freight, stock, and material handlers, n.e.c. (8726)
885	Garage and service station related occupations (873)
887	Vehicle washers and equipment cleaners (875)
888	Hand packers and packagers (8761)
889	Laborers, except construction (8769)
	MILITARY OCCUPATIONS
903	Commissioned Officers and Warrant Officers
904	Non-commissioned Officers and Other Enlisted Personnel
905	Military occupation, rank not specified
	EXPERIENCED UNEMPLOYED NOT CLASSIFIED BY OCCUPATION
909	Last worked 1984 or earlier