Employment Insecurity:
The Decline in Worker-Firm Attachment in the United States[1]

Henry S. Farber
Princeton University

Abstract

Long-term employment relationships have long been an important feature of
the labor market in the United States. However, increased international com-
petition and the wave of corporate downsizing in the 1990s raised concerns that
long-term employment relationships in the United States were disappearing. I
present evidence in this study, based on data from the Current Population Survey
(CPS) from 1973-2006, that long-term employment relationships have, in fact,
become much less common for men in the private sector. Mirroring this decline
in tenure and long-term employment relationships, there has been an increase
in "churning" (defined as the proportion of workers in jobs with less than one
year of tenure) for males in the private sector as they enter their thirties and
later. In contrast, women have seen no systematic change in job durations or
the incidence of long-term employment relationships in the private sector. There
has been an increase in job durations and the incidence of long-term employment
relationships in the public sector, with the increase more pronounced for women.
I conclude that 1) the structure of jobs in the private sector has moved away
from long-term relationships, 2) this decline has been offset for females by their
increased attachment to the labor force, and 3) the public sector has been less
susceptible to the competitive forces that are likely causing the changes in the
private sector. It seems clear that more recent cohorts of workers are less likely
than their parents to have a career characterized by a "life-time" job with a single
employer.

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[1]Industrial Relations Section, Firestone Library, Princeton University, Princeton, NJ 08544. Phone:
(609)258-4044. email: farber@princeton.edu.

1 Introduction and Background

Long-term employment relationships have long been an important feature of the labor market in the United States. However, increased international competition and the wave of corporate downsizing in the 1990s raised concerns that long-term employment relationships in the United States were disappearing. To the extent that there has been a substantial change in career employment dynamics, young workers entering the labor force in recent years and in the future will face a very different type of career than did earlier cohorts.

In this study, I examine evidence on job durations from 1973-2006 in order to determine the extent to which, in fact, the structure of jobs, indicated by the likelihood of long-term employment, is changing. I use data from 21 supplements to the Current Population Survey (CPS) over the 1973-2006 period that contain information on how long workers have been employed by their current firm. These data allow me to investigate how the career dynamics of workers has changed over time. Specifically, I examine various age-specific measures of the the length of employment relationships in order to determine whether workers are experiencing a different level of job stability than workers of the same age in earlier years.

The evolution of the structure of careers in the U.S. has played out in the context of dramatic growth in employment over the last 40 years. Civilian employment was 85.1 million in 1973 and rose to 144.4 million in 2006.[1] Thus, almost sixty million jobs have been created on net in the past 33 years, for an average rate of employment growth of 1.6 percent per year over this period. Despite this record of sustained growth in employment in the United States, there is longstanding concern that the quality of the stock of jobs in the economy more generally is deteriorating. The concern about job quality is based in part on the fact that the share of employment that is in manufacturing has been declining over a long period of time.[2] This has led to the view that, as high-quality manufacturing jobs are lost, perhaps to import competition, they are being replaced by low-quality service sector jobs (so-called

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[1] These statistics are taken from U.S. Bureau of Labor Statistics Series ID LNU02000000. This is the civilian employment level derived from the Current Population Survey for workers aged 16 and older.

[2] The manufacturing share of non-farm employment has been falling for over fifty years. Manufacturing's share was 30.9 percent in 1950 and fell to 10.4 percent in 2006. These statistics are taken from U.S. Bureau of Labor Statistics Series ID CEU00000001 and CEU30000001 derived from the Current Employment Statistics payroll data.

hamburger-flipping jobs). The high-quality jobs are characterized by relatively high wages, full-time employment, substantial fringe benefits, and, perhaps most importantly, substantial job security (low rates of turnover). The low-quality jobs are characterized disproportionately by relatively low wages, part-time employment, an absence of fringe benefits, and low job security (high rates of turnover).[3]

The results are clear cut. By virtually any measure, males in the private sector have been with their current employers for less time at specific ages. Age-specific overall mean tenure has fallen substantially for these workers and particularly those over forty years of age. In addition, men employed in the private sector have become much less likely to be in a long-term employment relationship. Mirroring this decline in tenure and long-term employment relationships, there has been an increase in "churning" (defined as the proportion of workers in jobs with less than one year of tenure) for males in the private sector as they enter their thirties and later. In contrast, women have seen no systematic change in job durations or the incidence of long-term employment relationships in the private sector.

Interestingly, there has been an *increase* in job durations and the incidence of long-term employment relationships in the public sector, with the increase more pronounced for women. The private-public contrast is informative because government employment has generally seen neither the increase in competitive pressures nor the decline in unionization (partly a result of increased competitive pressures) experienced in the private sector.[4]

I conclude that 1) the structure of jobs in the private sector has moved away from long-term relationships, 2) this decline has been offset for females by their increased attachment to the labor force, and 3) the public sector has been less susceptible to the competitive forces that are likely causing the changes in the private sector. It seems clear that more recent cohorts of workers are less likely than their parents to have a career characterized by a "life-time" job with a single employer.

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[3] See Farber (1997) and Farber and Levy (2000) for discussions of the quality of new and part-time jobs.

[4] See Farber (2006) for a discussion of the decline of unions in the private sector and the contrast with the public sector.

2   Review of Recent Literature on Job Stability

Several recent papers have used CPS data on job tenure to examine changes in employment stability. Swinnerton and Wial (1995), using data from 1979 through 1991, analyze job retention rates computed from artificial cohorts and conclude that there has been a secular decline in job stability in the 1980's. In contrast, Diebold, Neumark, and Polsky (1994), using CPS data on tenure from 1973 through 1991 to compute retention rates for artificial cohorts, find that aggregate retention rates were fairly stable over the 1980's but that retention rates declined for high school dropouts and for high school graduates relative to college graduates over this period. I interpret a direct exchange between Diebold, Polsky, and Neumark (1996) and Swinnerton and Wial (1996) as supporting the view that the period from 1979-91 is not a period of generally decreasing job stability. Farber (1998), using CPS data on job tenure from 1973 through 1993, finds that the prevalence of long-term employment has not declined over time but that the distribution of long jobs has shifted. He finds that less-educated men are less likely to hold long jobs than they were previously but that this is offset by a substantial increase in the rate at which women hold long jobs. Farber (2000) examines CPS data on job tenure from 1973 through 1996, and he finds that the prevalence of long-term employment relationships among men declined by 1996 to its lowest level since 1979. In contrast, long-term employment relationships became somewhat more common among women.

Rose (1995) uses data from the Panel Study of Income Dynamics (PSID) to measure job stability by examining the fraction of male workers who do not report any job changes in a given time period, typically ten years. Rose finds that the fraction of workers who reported no job changes in given length of time was higher in the 1970's than in the 1980's. He argues that this is evidence of increasing instability of employment.

The Russell Sage Foundation sponsored a conference organized by David Neumark on "Changes in Job Stability and Job Security" in 1998.[5] The evidence presented here is mixed regarding whether job tenure was declining. Jaeger and Stevens (1999) use data from the

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[5] The Proceedings of this conference are published in Neumark (2000), and a number of these papers are published in *The Journal of Labor Economics* Volume 17, Number 4, Part 2, October 1999

PSID and the CPS mobility and benefit supplements on (roughly) annual rates of job change to try to reconcile evidence from the CPS and PSID on job stability. They find no change in the share of males in short jobs and some decline between the late 1980s and mid-1990s in the share of males with at least ten years of tenure.[6] Neumark, Polsky, and Hansen (1999) find a similar decline in long-term employment but conclude that this does not reflect a secular trend. Gottschalk and Moffitt (1999) use monthly data from the Survey of Income and Program Participation (SIPP) along with annual data from the SIPP and the PSID, and they find no evidence of an upward trend in job insecurity in the 1980s and 1990s. Valletta (1999) uses data from the PSID from 1976-1993 and finds some decline in long-term employment relationships.

In more recent work, Stewart (2002) uses data from the March CPS to investigate two aspects of job security. The first, the likelihood of leaving a job, shows no particular trend from 1975 through 2000 based on these data. The second, the likelihood of making an employment-to-employment transition, increased over this period while the likelihood of making an employment-to-unemployment transition decreased. Stewart concludes that the cost of changing jobs has decreased.

Stevens (2005) examines data from several longitudinal histories of older male workers (late 50s and early 60s) with regard to changes over time in the length of longest job held during careers. She finds that there has been no change between the late 1960s and late early 2000s and concludes that there has not been a decline in the in the incidence of "lifetime jobs". A careful reading of her results show an increase in average longest tenure from about 22 years among older workers in 1969 to 24 years in 1980 followed by a decline to 21.4 years in 2002. A reasonable interpretation of this pattern is that the earliest cohorts had jobs interrupted by service in World War II, resulting in lower average longest tenure than subsequent cohorts. The decline since 1980 may then reflect a real decline in job durations. Additionally, the most recent cohort examined by Stevens was born in the 1940s so that her analysis cannot shed light on the experience of more recent birth cohorts.

In a recent paper, I (Farber, 2007a) present an analysis of the same data I use here

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[6] Unfortunately, due to the design of the PSID, neither of these studies examine the mobility experience of women.

organized around an examination of the experience of different birth cohorts although I make no distinction between the public and private sectors. I conclude that more recent birth cohorts of men have experienced a sharp reduction in job tenure and the incidence of long-term employment relationships.

A careful reading of this earlier literature does not yield a clear answer regarding changes in the incidence of long-term employment relationships. I turn now to my analysis, which covers a long time period in a consistent way, in order to determine what, in fact, has happened to long-term employment relationships in the United States.

3 Measuring the Change in Tenure Over Time

My analysis relies on a sample consisting not self employed workers aged 20-64 from the 21 CPS supplements covering the period from 1973 to 2006. The sample contains 876,063 workers, and the data are described in more detail in the Appendix.

I organize my analysis of changes over time in the distribution of job durations by examining age-specific values of various distributional measures of job tenure in different years. No one statistic can completely characterize a distribution, and I focus on several measures here:

- Mean job tenure (years with the current employer). Note that this is not mean completed job duration since since the jobs sampled are still in progress.

- The age-specific probability that a worker reports being on their job at least ten years. Because younger workers cannot have accumulated substantial job tenure, I restrict this analysis to workers at least 35 years of age, and I examine how these probabilities have evolved over time. This allows me to investigate changes in the transition from the early "job shopping" phase of a career to more stable longer-term employment relationships in mid-career.

- The age-specific probability that a worker reports being in their job at least twenty years. Because younger workers cannot have accumulated substantial job tenure, I restrict this analysis to workers 45 years of age and older, and I examine how these

probabilities have evolved over time. This allows me to investigate changes in the incidence of longer term employment relationship later in careers.

- The age-specific probability that a worker reports being their job for less than one year. This provides another approach to investigating changes in the transition from the early job-shopping phase of a career to more stable longer-term employment relationships.

An important measurement issue is related to cyclical changes in the composition of the sample. It is clear that workers with little seniority are more likely than high-tenure workers to lose their jobs in downturns (Abraham and Medoff, 1984). Thus, we would expect that the incidence of long-term important employment, as measured by the fraction of workers with tenure exceeding some threshold, to be counter-cyclical. Tight labor markets will lead the distribution of job durations to lie to the left of the distribution in slack labor markets. These cyclical influences need to be kept in mind when interpreting the results.

4   The Evolution of Job Tenure

4.1   Mean Tenure

Figure 1 contains separate plots by sex of mean tenure for males by age for three time periods covered by the data (1973-83, 1984-95, 1996-2006).[7] These figures show clearly that 1) mean tenure is rising with age in both the public and private sectors. With regard to shifts over time in the tenure distribution, age-specific mean tenure for males employed in the private sector has declined substantially, particularly for older workers. For example, mean tenure for private sector males at age 50 declined from 13.5 years in the 1973-83 period to 11.4 years in the 1996-2006 period. The pattern in the public sector is the opposite. For example, mean tenure for public sector males at age 50 *increased* from 13.6 years in the 1973-83 period to 16.1 years in the 1996-2006 period.

Figure 2 contains the same plots for females, and the pattern in the private sector is quite different than that for males. While mean tenure for females in increasing with age, tenure

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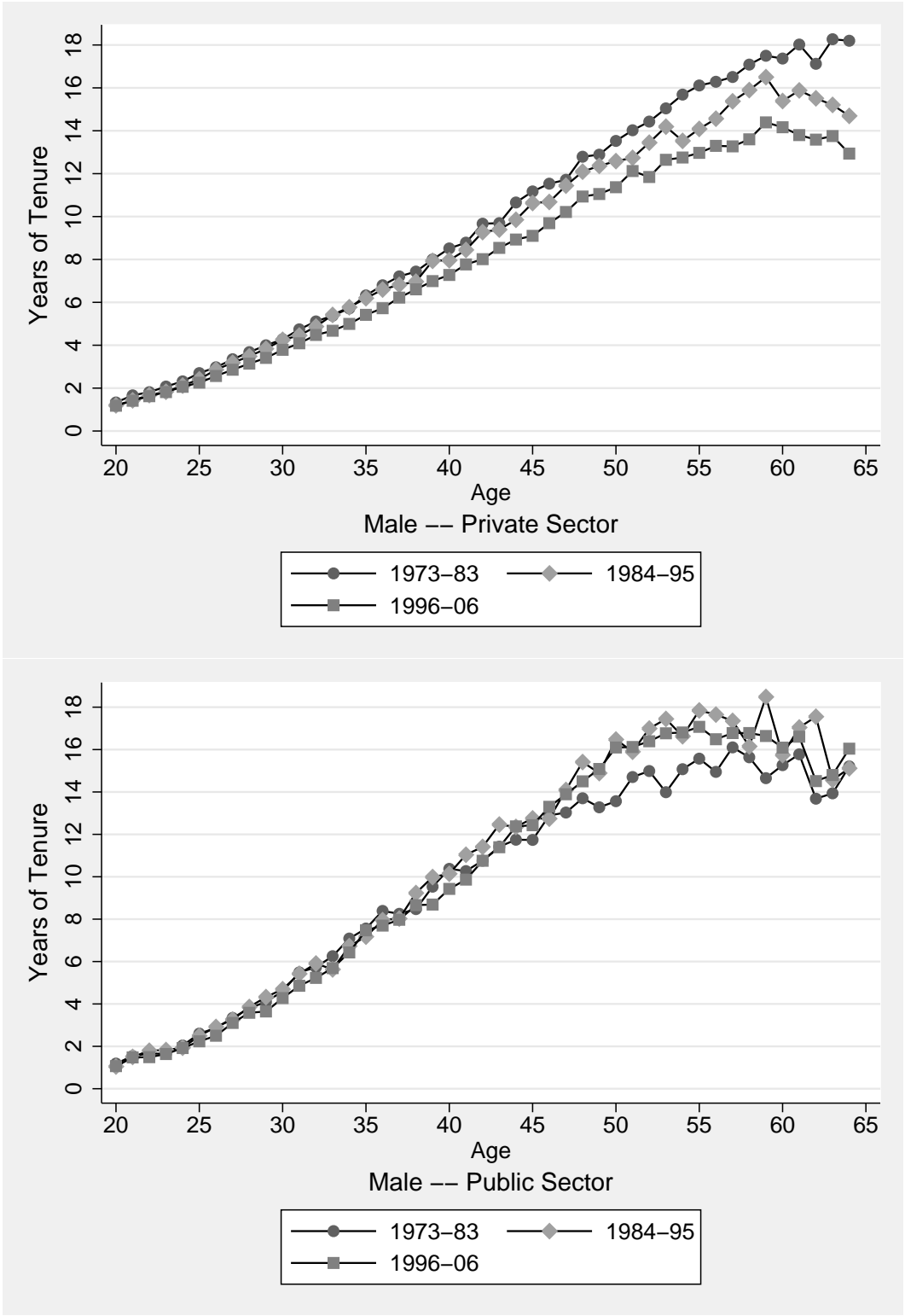[7] Means are calculated weighted by CPS final sample weights.

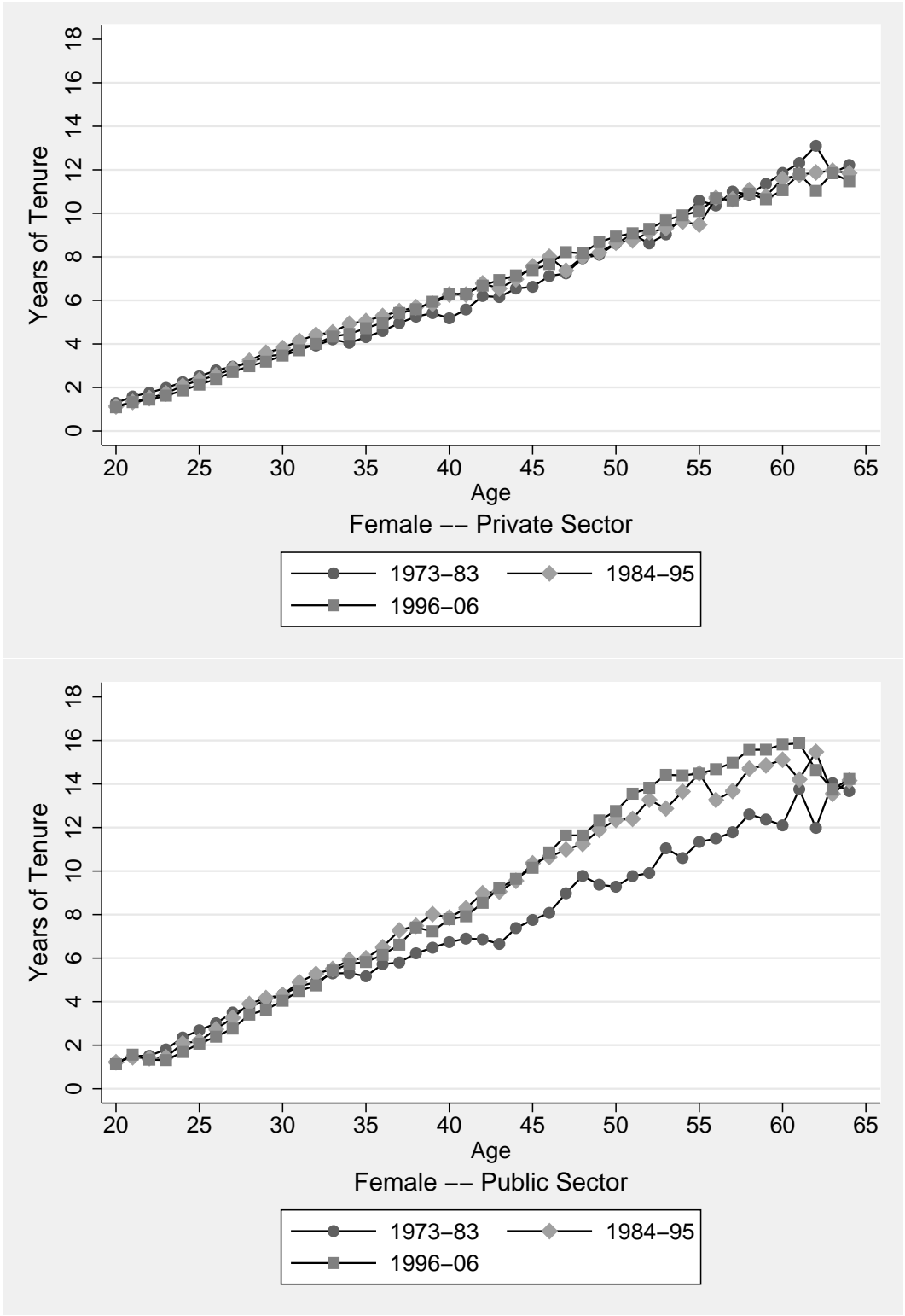Figure 1: Mean Tenure for Males, by Sex, Age, and Year

Figure 2: Mean Tenure for Females, by Sex, Age, and Year

levels are substantially lower than those for males in the private sector. Importantly, there appears to have been no change in age-specific job tenure for females employed in the private sector. This is despite the well-documented increase in female attachment to the labor force. In contrast, females in the public sector have seen a substantial increase in mean job tenure. For example, mean tenure for public sector females at age 50 increased from 9.3 years in the 1973-83 period to 12.8 years in the 1996-2006 period. One explanation for this pattern may be that the economy-wide changes that the increase in female labor force attachment in the last thirty years have been offset in the private sector by the same forces that have led to the decline in male tenure in the private sector.

Another approach to summarizing the data is to estimate a linear model of the natural logarithm of tenure of the form

$$ln(T_{ijt}) = Y_t + A_j + \epsilon_{ijt}, \tag{1}$$

where T_{ijt} is tenure in years for individual i at age j in year t, Y_t is a calendar year indicator, and A_j is a years-of-age indicator. This logarithmic specification embodies the plausible implicit assumption that proportional year effects on mean tenure are constant across ages and, equivalently, that the proportional age effects on mean tenure are constant across years.[8] A more detailed investigation would allow for year effects that vary by age since changes in job security could express themselves differentially at various ages. However, the model in equation 1 fits the data quite well, and it serves as a good summary of the data.[9]

I estimate the model in equation 1 separately for men and women in the public and private sectors using ordinary least squares (OLS), weighted by the CPS final sample weights. The implied proportional differences from the 1973 value of age-specific mean tenure are plotted in figure 3.[10]

The patterns are quite different for the four groups of workers. There is a sharp decline

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[8] I do not estimate this model using absolute tenure because the implicit assumption in that case would be that absolute year effects on mean tenure are constant across ages and, equivalently, that absolute age effects on mean tenure are constant across years. This is clearly not plausible on inspection of figures 1 and 2 which demonstrate the fact that younger workers have very low levels of tenure.

[9] I computed (separately for each of the four groups defined by sex and sector of employment) weighted mean tenure for each age/year combination and regressed these measures on a complete set of age and year fixed effects. This is essentially the main-effects model in equation 1 aggregated to the cell level. The
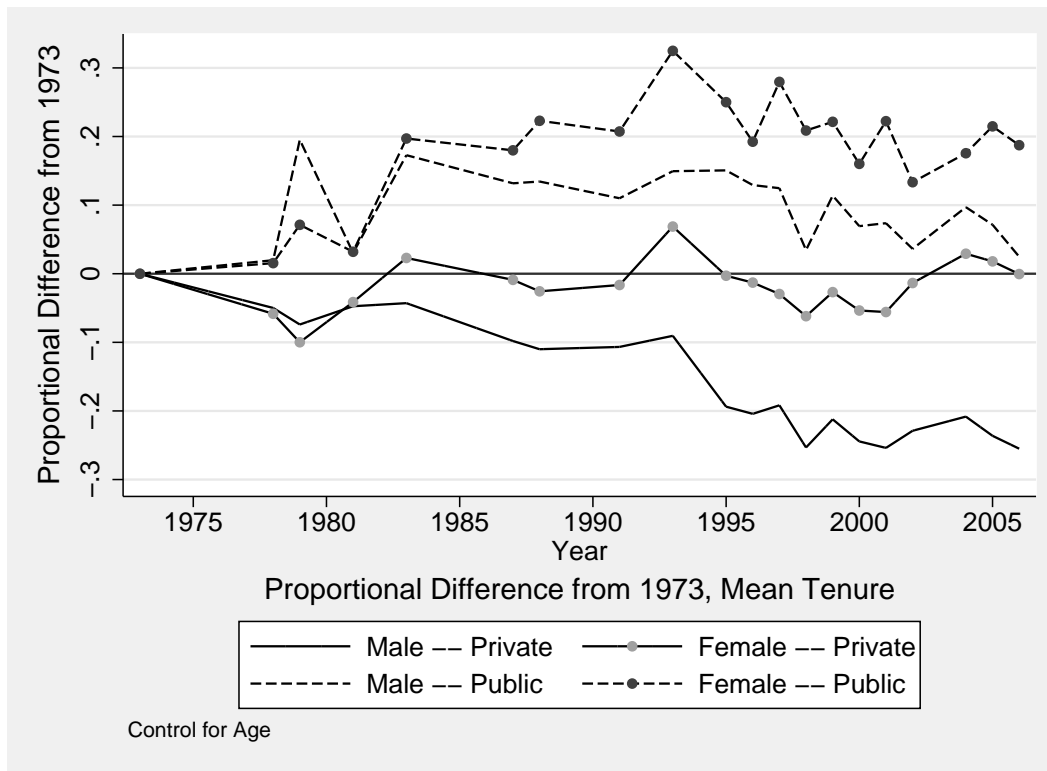
Figure 3: Proportional Difference from 1973, Mean Tenure, Controlling for Age.

of about 25 percent in age-specific mean tenure for male private-sector workers between the 1973 and 2006. In contrast, there is no systematic change over time in age-specific mean tenure for female private-sector workers. The public sector shows a dramatic increase in age-specific mean tenure both for men and for women over the sample period. Tenure for males in the public sector increased by about 18 percent between 1973 and 1983 before declining somewhat by 2006 to approximately the 1973 level. Age-specific mean tenure for females in the public sector was 30 percent higher in the early 1990s than in 1973 and remained about 20 percent higher in 2006 then it was in 1973.

These patterns are consistent with those found in figures 1 and 2. They suggest a decline in long-term employment opportunities in the private sector that is most evident for males

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R-squareds from these regressions are all in excess of 0.95.

[10] The estimated year effects on mean tenure from equation 1, normalized to zero in 1973, are converted to proportional differences in mean tenure relative to 1973 as $exp(\hat{Y}_t - \hat{Y}_{1973}) - 1$.
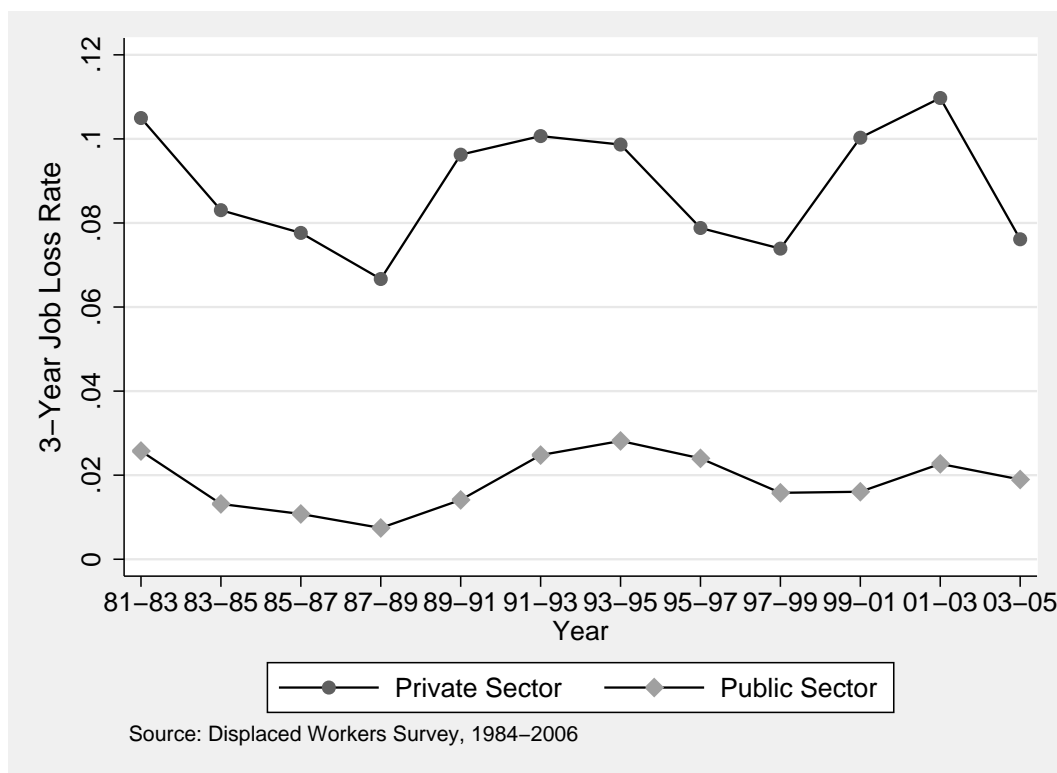
Figure 4: Three-Year Job Loss Rates, by Sector of Employment

and is offset to some extent for females by their increased attachment to the labor force.

The increase in mean tenure in the public sector could reflect an increase in the relative attractiveness of public sector jobs that is magnified for females by their increased attachment to the labor force. Indeed job security appears to be higher in public sector jobs. Figure 4 contains plots of three-year job loss rates calculated from the Displaced Workers Surveys (DWS), available biannually from 1984-2006.[11] The rate of job loss in the public sector is approximately one-fourth of the private-sector rate, and it exhibits less cyclical sensitivity. To the extent that private-sector jobs have become less secure, it may be the case that public sector jobs have become relatively more attractive. The resulting lower quit rates from public

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[11] The Displaced Worker Survey is a regular supplement to the Current Population Survey. Respondents are asked if they have lost a job in the three calendar years prior to the survey. Those who have lost jobs due to slack work, a plant closing, or a position being eliminated are asked a set of follow-up questions regarding the lost job and their experience since the job loss. I calculate job loss rates of these workers by dividing the number of workers who report such a job loss by sectoral employment as of the survey date. See Farber (2007b) for a more detailed discussion of these data and issues of interpretation.

sector jobs would serve to reinforce the already high job tenure evident in the public sector.

In addition to the increased presence of women in the labor force, there are other important changes that could be related to the decline in tenure. First is the well-known large increase in average educational attainment during the 20th century. While there is not a clear relationship between educational attainment and tenure, I account for education levels in my investigation of the decline in mean job tenure.[12] Second, and potentially more important, is the substantial increase in the immigrant share of the U.S. labor force. By definition, newly arrived immigrants cannot have substantial tenure. Data on immigration are not available in any CPS with tenure data prior to 1995. Analysis of the data since 1995 illustrates both the sharp increase in immigrant share in the labor force and the fact that immigrants have lower job tenure than natives. The weighted immigrant fraction of the labor force in my sample increased steadily from 9.45 percent in 1995 to 14.7 percent in 2006. On average between 1995 and 2006, immigrant workers had 2.14 years lower tenure than natives (s.e. = 0.034). Immigrant workers were only slightly younger than natives over the same period (average difference = 0.98 years (s.e. = 0.050)).[13]

An important question is how much of the decline in observed tenure since 1973 is due to the increased immigrant presence in the labor force. While not directly observable prior to 1995, immigrant status is strongly correlated with race and Hispanic ethnicity, which is observed in all years. My tabulations of the CPS from 1995-2006 show that immigrants are highly concentrated among nonwhites and Hispanics. Only 3.6 percent of white non-Hispanics are immigrants, while over fifty percent of Hispanics (white and nonwhite) are immigrants. Additionally, a growing fraction of nonwhite non-Hispanics are immigrants, rising from 18.7 percent in 1995 to 28.2 percent in 2006. The rising overall immigrant share over this period is reflected in the growing share of Hispanics and nonwhites in the labor force. The Hispanic share of employment in my sample increased from 9.0 percent in 1995 to 13.4 percent in 2006 and the nonwhite share of employment increased from 15.2 percent

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[12] Mean tenure in my analysis sample for each of four educational categories are ED<12: 7.3 years, ED=12: 7.3 years, ED 13-15: 6.4 years, and ED ≥ 16: 7.3 years.

[13] See Farber (2007a) for a detailed analysis of the change in job tenure since 1995 that controls directly for immigrant status.
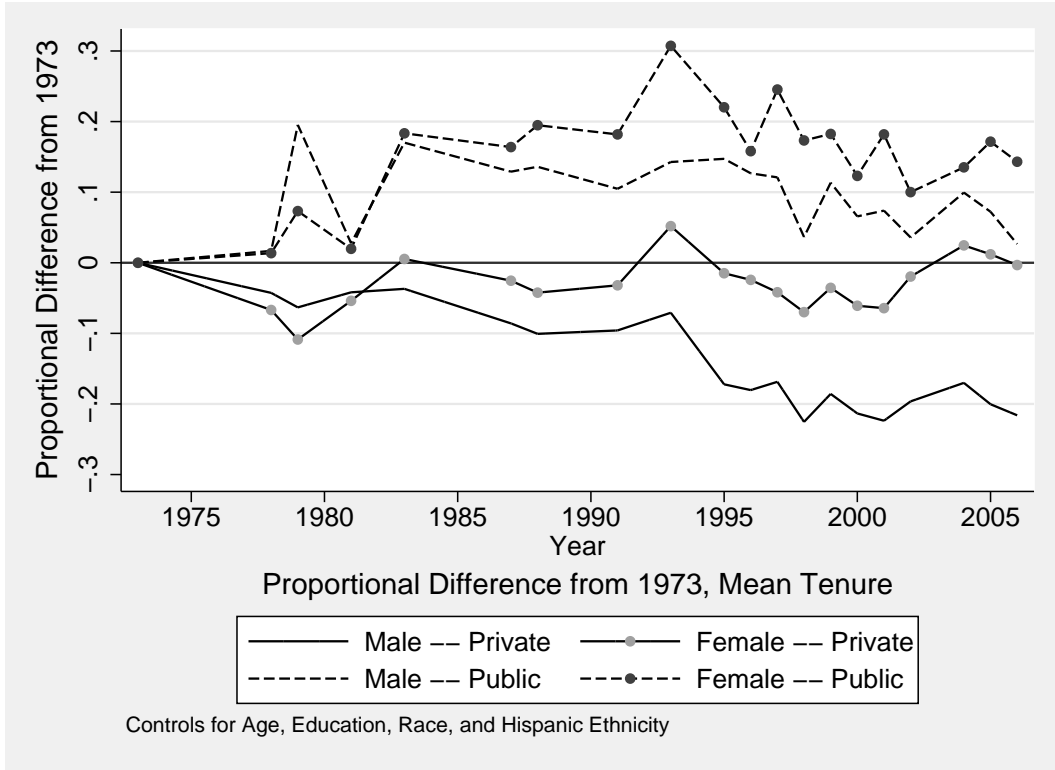
Figure 5: Proportional Difference from 1973, Mean Tenure. Controlling for Age, Education, Race, and Hispanic Ethnicity.

to 17.2 percent over the same period. Another perspective on the same facts is that 75 to 80 percent of immigrant workers in the United States between 1995 and 2006 are either Hispanic or nonwhite.

In order to account, at least partly, for the role of increased immigration in the decline in tenure, I estimate age-specific proportional differences in mean tenure relative to 1973 controlling for race, Hispanic ethnicity and their interaction as well as age and education. I estimate

$$ln(T_{ijt}) = \alpha_1 NW_i + \alpha_2 H_i + \alpha_3 H_i NW_i + ED_i\gamma + Y_t + A_j + \epsilon_{ijt}, \qquad (2)$$

where NW_i is an indicator for nonwhite, H_i is an indicator for Hispanic ethnicity, and ED_i is a vector of indicators for four educational categories.

In parallel with figure 3, figure 5 contains separate plots for males and females in the private and public sectors of the proportional differences from 1973 in mean tenure based

13

on equation 2. The time-series patterns controlling for age, education, race, and ethnicity are similar to those controlling for age alone. The additional controls account for about 20 percent of the decline evident in figure 3.

There remains a sharp decline of about 20 percent in age-specific mean tenure for male private-sector workers between the 1973 and 2006, and there is still no systematic change over time in age-specific mean tenure for female private-sector workers. The public sector continues to show an increase in age-specific mean tenure both for men and for women over the sample period. Tenure for males in the private sector increased by about 18 percent between 1973 and 1983 before declining somewhat by 2006 to approximately the 1973 level. Age-specific mean tenure for females in the public sector was 30 percent higher in the early 1990s than in 1973 and remained about 15 percent higher in 2006 then it was in 1973.

It is clear from the analysis in this sub-section that age-specific mean tenure has declined dramatically over time and that only one about 20 percent of this decline can be accounted for by the sharp growth in immigrants in the labor market. This decline is concentrated among men in the private sector. Mean tenure increased for both men and women in the public sector.

4.2   Long-Term Employment

Long-term employment is common in the U.S. Labor Market. I consider two measures of long-term employment:

- the fraction of workers aged 35-64 who have been with their employer at least ten years (the "10-year rate"), and

- the fraction of workers aged 45-64 who have been with their employer at least twenty years (the "20-year rate").

Figure 6 contains plots of these two measures over the 1973-2006 period for men and women in the public and private sectors. It is clear that the incidence of long-term employment has declined dramatically for men employed in the private sector, with the 10-year rate falling from about 50 percent to about 35 percent and the 20-year rate falling from about 35
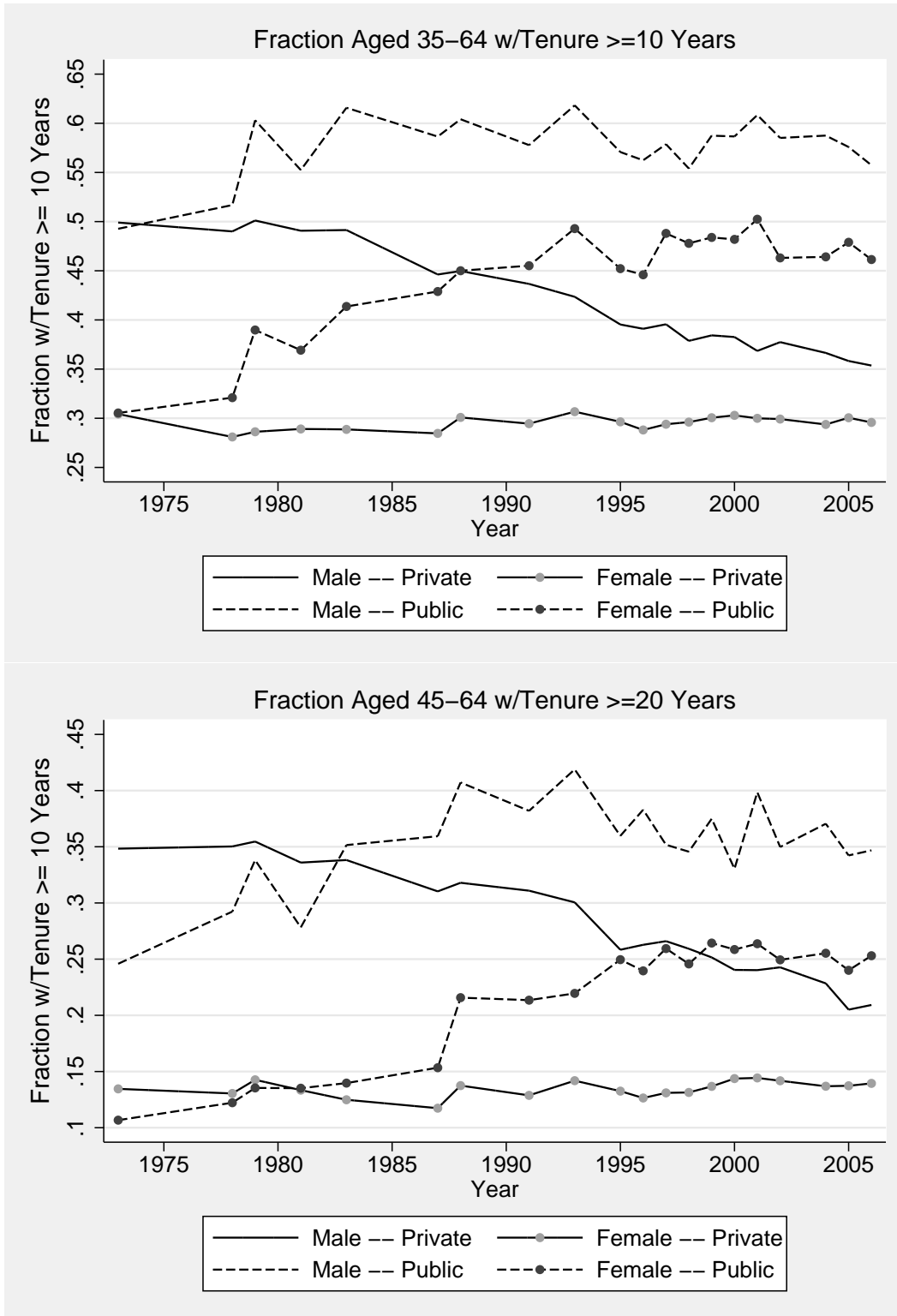
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Figure 6: Fraction of Workers in Long Term Jobs, by Year.

percent to about 20 percent between 1973 and 2006. In contrast, the incidence of long-term employment for men employed in the public sector increased over the same period, with the 10-year rate increasing from 50 percent to 60 percent in 2000 before falling to 55 percent in 2006. Over the same period the 20-year rate for men employed in the public sector increased from 25 percent in 1973 to 40 percent in 1990 before falling off to 35 percent by 2006.

The incidence of long-term employment among women employed in the private sector remained steady between 1973 and 2006, at a ten-year rate of about 30 percent and a twenty-year rate of about 15 percent. In sharp contrast, the incidence of long-term employment among women employed in the public sector increased substantially, with the ten-year rate increasing from 30 percent in 1973 to 45 percent in 2006 and the twenty-year rate increasing from 10 percent to 25 percent over the same period.

Because these measures are sensitive to the age distribution and other observable characteristics, I estimate age-specific year effects using the same approach I used for mean tenure. I estimate linear probability models using the same specification of explanatory variables (year, age, education, race, Hispanic ethnicity and the interaction of race and Hispanic ethnicity) in equation 2, and I report the estimated year effects (differences from 1973) from this analysis in figure 7.

Figure 7 contains separate plots for males and females by sector of employment of the year effects (1973=0) for the 10-year rate (top panel) and the 20-year rate (bottom panel). The age-specific probability that a male worker in the private sector has been with his employer for at least ten years decreased steadily by about 10 percentage points. A decline of the same magnitude is also found for the 20-year rate for private-sector male workers. These 10 percentage points declines are substantial given the 1973 base ten-year rate of 50 percent and the base twenty-year rate of 35 percent (figure 6). The rates of long-term employment for females employed in the private sector show no change between 1973 and 2006.

As with the simple means in figure 6, the long-term employment rates for both men and women employed in the public sector have increased since 1973. The increase has been particularly sharp for women, with both the ten- and twenty year rates increasing by more than 10 percentage points (from a 1973 base of 30 percent and 10 percent respectively)v.
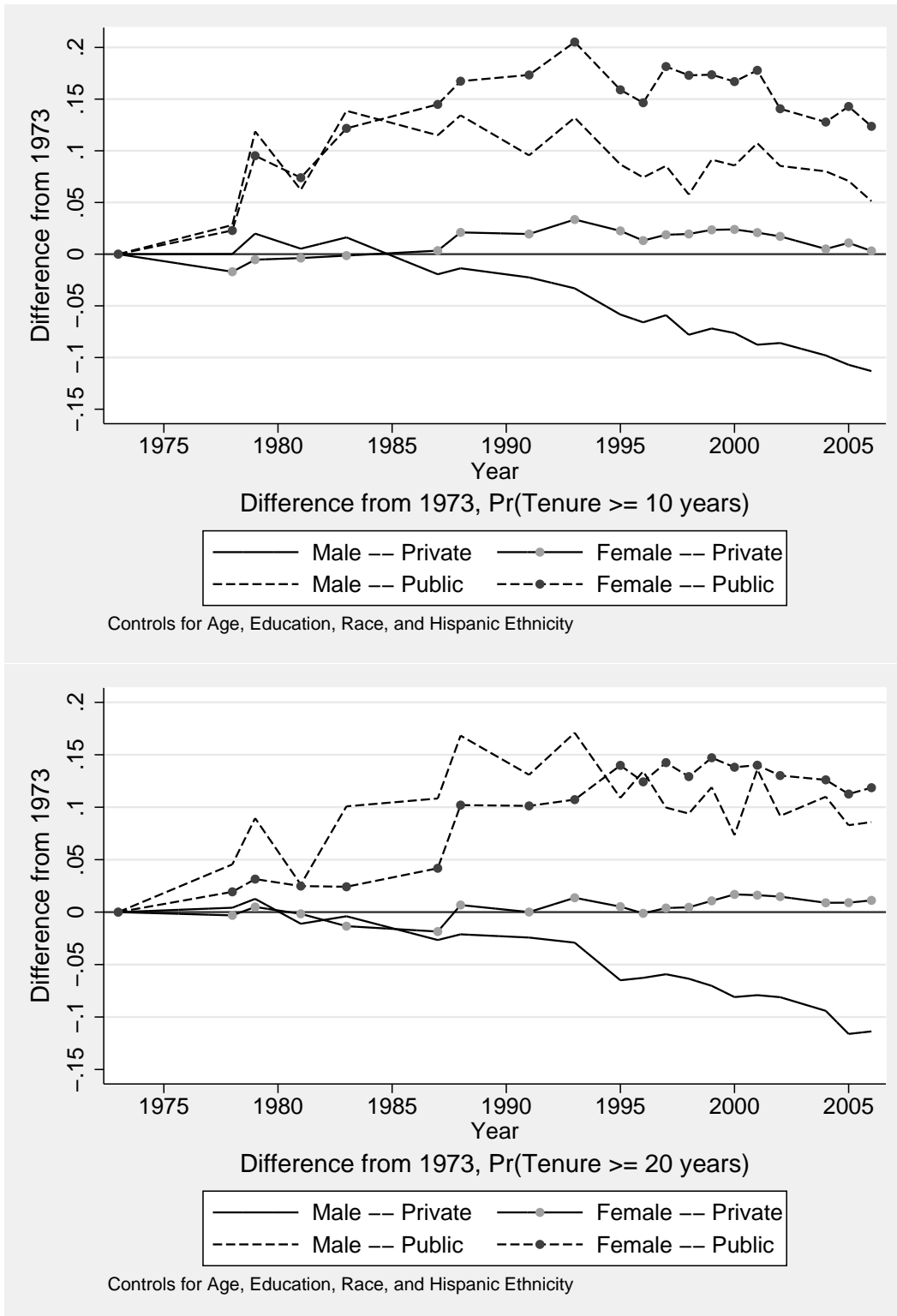
Figure 7: Difference from 1973, $Pr(T \geq 10)$ and $Pr(T \geq 20)$. Controlling for Age, Education, Race, and Hispanic Ethnicity.

Taken together, the analysis of the changes in average tenure (figure 5) and in the likelihood of long-term employment (figure 7) across cohorts shows clearly that average tenure has declined and long-term employment has become much less common for males in the private sector. Among females in the private sector, average tenure tenure and the incidence of long-term employment have remained steady. Workers in the public sector, on the other hand, have seen an increase in both average tenure and the incidence of long-term employment.

The private/public sector contrast may reflect an increase in the relative attractiveness of stable public-sector jobs that reduces voluntary job changes as well as the the lower reported job-loss rate in public-sector jobs (figure 4).

The difference in patterns between males and females in the private sector likely reflects the common factors reducing tenure for all workers offset for females by their dramatically increased attachment to the labor force over the past half century. This increase in attachment is also reflected in the larger increase in tenure and long-term employment among women relative to men in the public sector.

A key conclusion is that the structure of employment in the private sector in the United States has become less oriented toward long-term jobs. Since public-sector employment as a fraction of total employment has remained steady at about 18 to 20 percent and seems unlikely to increase, it appears that young workers today will be less likely than their parents to have a "life-time" job.

4.3   Churning: Are There More Very Short Jobs?

The opposite but related pole of the job tenure distribution is short-term jobs. Farber (1994, 1999) presents evidence that half of all new jobs (worker-employer matches) end within the first year. As I show below, a substantial fraction (around 20 percent) of all jobs have current tenure less than one year ("new jobs"). Not surprisingly, young workers are more likely than older workers to be in new jobs. High rates of job change among young workers are a natural result of search for a good job or a good match.[14]

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[14] Burdett (1978) presents a model of job search with this implication. Jovanovic (1979) presents model of matching in the labor market with the same implication.

Table 1: New Job Rate, by Sex and Sector of Employment, 1973-2005

Age	Male Private	Female Private	Male Public	Female Public	All
Age 20-29	0.340	0.373	0.281	0.314	0.349
Age 30-39	0.174	0.218	0.090	0.148	0.181
Age 40-49	0.122	0.156	0.056	0.085	0.124
Age 50-59	0.094	0.113	0.043	0.053	0.090
Age 60-64	0.080	0.090	0.052	0.042	0.077
All	0.190	0.224	0.100	0.134	0.190

Note: The new job rate is the fraction of workers reporting less than one year of tenure with their current employer. Based on data for not self employed workers 20-64 years of age from 19 CPSs covering the period from 1973 to 2006. Weighted by CPS final sample weights. N=876,063.

Table 1 contains the new-job rate by ten-year age group for males and females by sector of employment. This illustrates the sharp decline in the new-job rate as workers age through their twenties especially and into their thirties. This decline is sharper for males, and the new-job rate is slightly higher for females in all age groups. This reflects the fact that females are more likely to leave and re-enter the labor force in mid-career.

In order to investigate how the new-job rate has changed over time, figure 8 contains plots of the new-job rate by year for each of the four sex/sector groups. The new job rate increased for males employed in the private sector and decreased for females employed in the public sector. There was a small decline in the new-job rate for males employed in the public sector and no change for females in the private sector.

In order to account for differences by age and other characteristics, I estimate age-specific year effects using the same approach I used for means and for the probability of long-term employment. I estimate linear probability models of the probability of being in a new job using the same specification of explanatory variables (year, age, education, race, Hispanic ethnicity) in equation 2. Figure 9 contains separate plots for males and females of the difference by year in the new-job rate relative to the 1973.

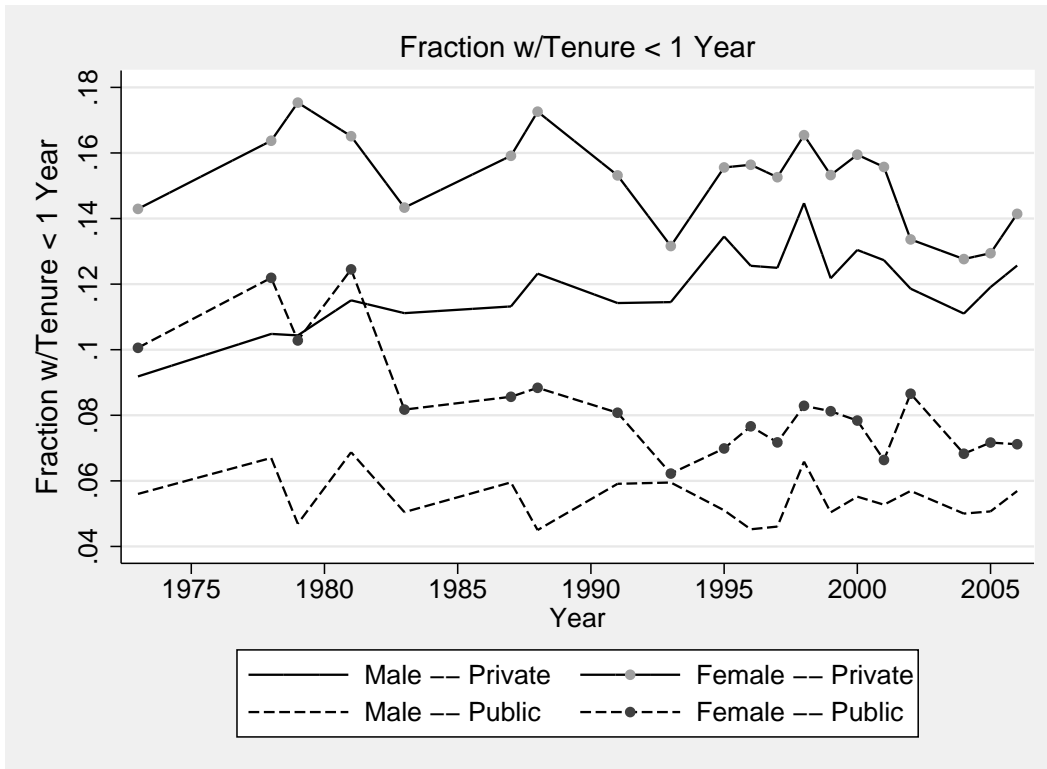The age-specific probability that a male worker in the private sector has been with his

Figure 8: Fraction in New Jobs ($T < 1$ Year)

employer for less than one year increased by about 3 percentage points between the 1973 and 2006. Once again, there is no systematic change for females in the private sector. Nor is there any change for males employed in the private sector. However, there is a 2 percentage point decline in the age-specific new-job rate for females in the public sector.

The decline in the new-job rate by age evident in table 1 raises two interesting questions regarding the decline in mean tenure and long term employment and how this decline is related to the rate of "churning" in the labor market:

1. Are young workers taking longer to find good (long-lasting) matches or jobs? This would imply an increase in the new-job rate among younger workers.

2. Are older workers having more difficulty finding good matches when they lose jobs that may formerly have been "lifetime" jobs? This would imply an increase in the new-job rate among older workers.

An implicit constraint in the model I use to estimate the changes (based on equation
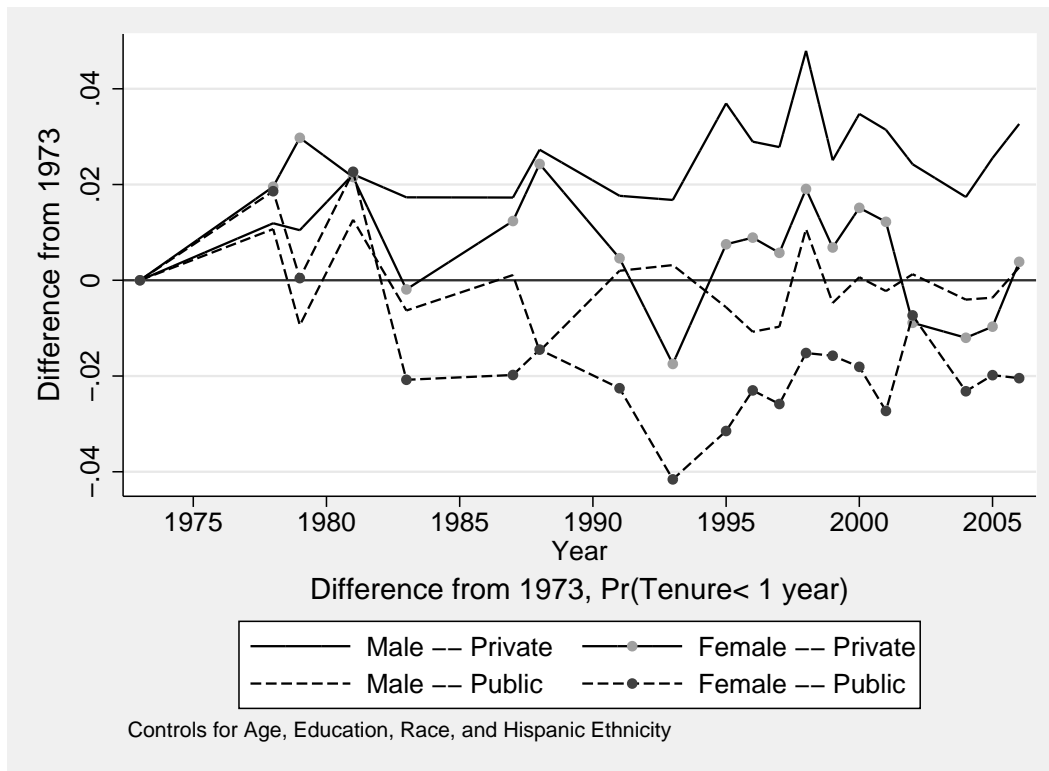
Figure 9: Year Effects on $Pr(T < 1)$

2) presented in figure 9 is that the changes over time are are constant across age groups. Given the role that job change plays in matching and job search early in careers, I estimate separate year effects for different age groups. The top panel of figure 10 contains differences by year in the new-job rate relative to the 1973 estimated using a sample of workers aged 20-29. These estimates, which vary quite a bit year-to-year, show no secular pattern but a strong cyclical pattern. The new-job rate is higher in strong economic times as employers increase hiring and lower in weaker times as workers are less likely to quit to take new jobs.

The bottom panel of figure 10 contains differences by year in the new-job rate relative to 1973 estimated using a sample of workers aged 30-39. These estimated year effects differ substantially from those for workers in their twenties. There is an increase of about 4 percent in the new job rate for males in their thirties in the private sector and a decrease of about 4 percent for females in their thirties in both sectors between the 1973 and 2006. The pattern for males is consistent with the hypothesis that men are job shopping in their twenties and
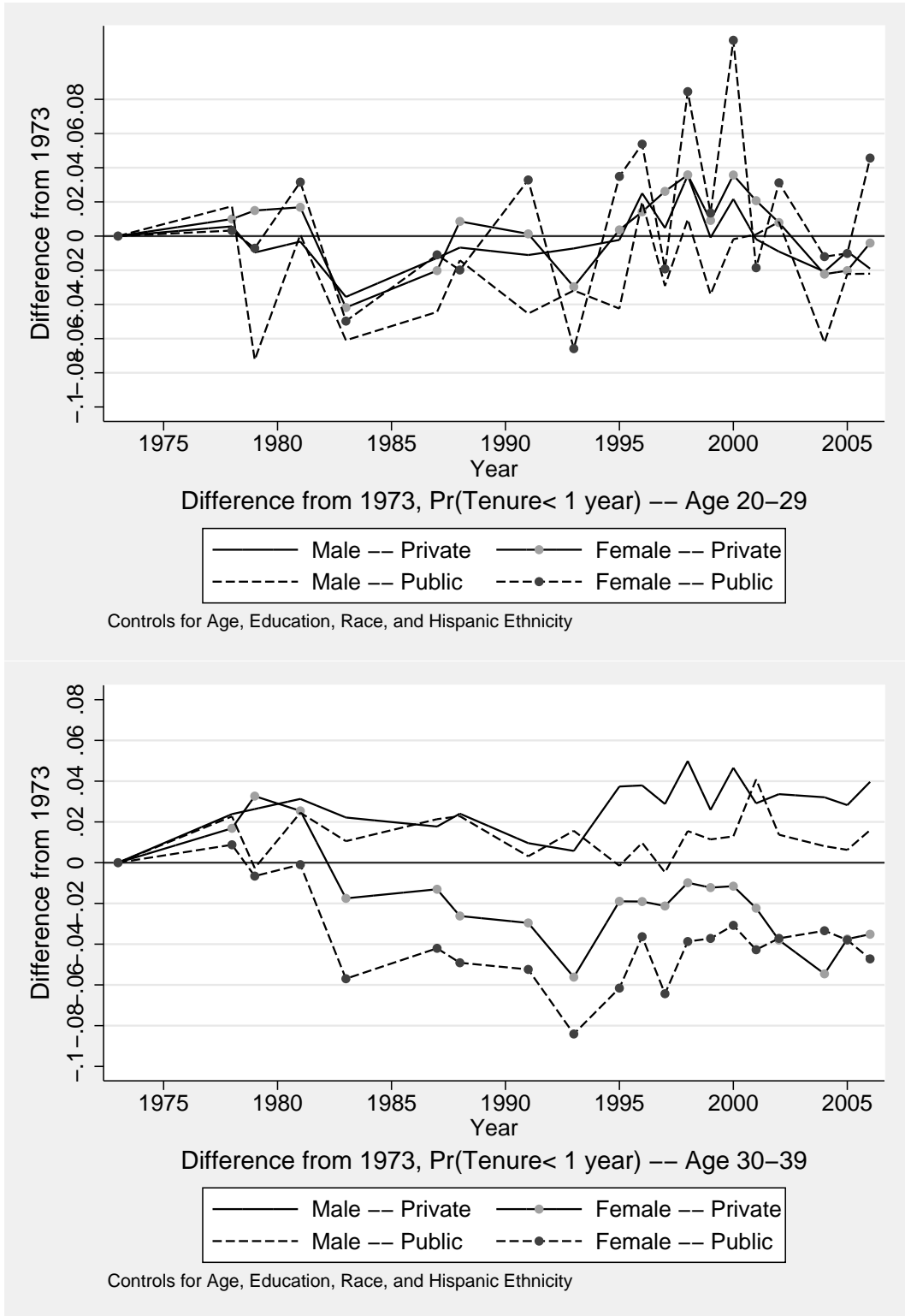
Figure 10: Year Effects on $Pr(T < 1)$ (Age 20-29 and 30-39)

have become less likely to settle into longer-term jobs in their thirties. The pattern for females, which is stronger in the public sector, likely reflects an increase in attachment to the labor force by women as they enter their thirties.

Given that older workers are less likely to be in long-term jobs, I next investigate how the new-job rate has changed for workers aged 40 and older. The top panel of figure 11 contains differences by year in the new-job rate relative to 1973 estimated using a sample of workers aged 40-49. The bottom panel of this figure contains differences by year in the new-job rate relative to 1973 using a sample of workers aged 50-64. Both plots show an increase in the probability of being on a new job for males employed in the private sector. The magnitude of the increase (about 2 percentage points) is substantial when compared to the overall mean new job rates for older men in table 1. The new-job rate for women in the public sector in their forties is decreased substantially, but the change is not reflected in the experience of women 50 and older.

The overall time-series pattern of the age-specific new-job rate is a general increase over time for men aged 30 and older. Part of this reflects an extension of the period of "job-shopping" early in careers and part reflects increased probabilities of jobs ending later in careers. There is not much change over time in the age-specific new-job rate for women in either the public or private sectors aside from a substantial decline for women in their thirties, likely reflecting a reduced likelihood of withdrawing from and subsequently re-entering the labor force in their thirties.

5   Concluding Remarks

The overall pattern of results regarding mean job tenure and the incidence of long-term employment relationships suggests that there has been a substantial decline in long-term employment opportunities and a concomitant reduction in job security in the private sector. This is manifested directly in the reduction in job tenure and incidence of long-term employment relationships for men in the private sector. The fact that there is no such reduction for women in the private sector is likely a result of an offsetting increase in attachment of women to the labor force and to their jobs.
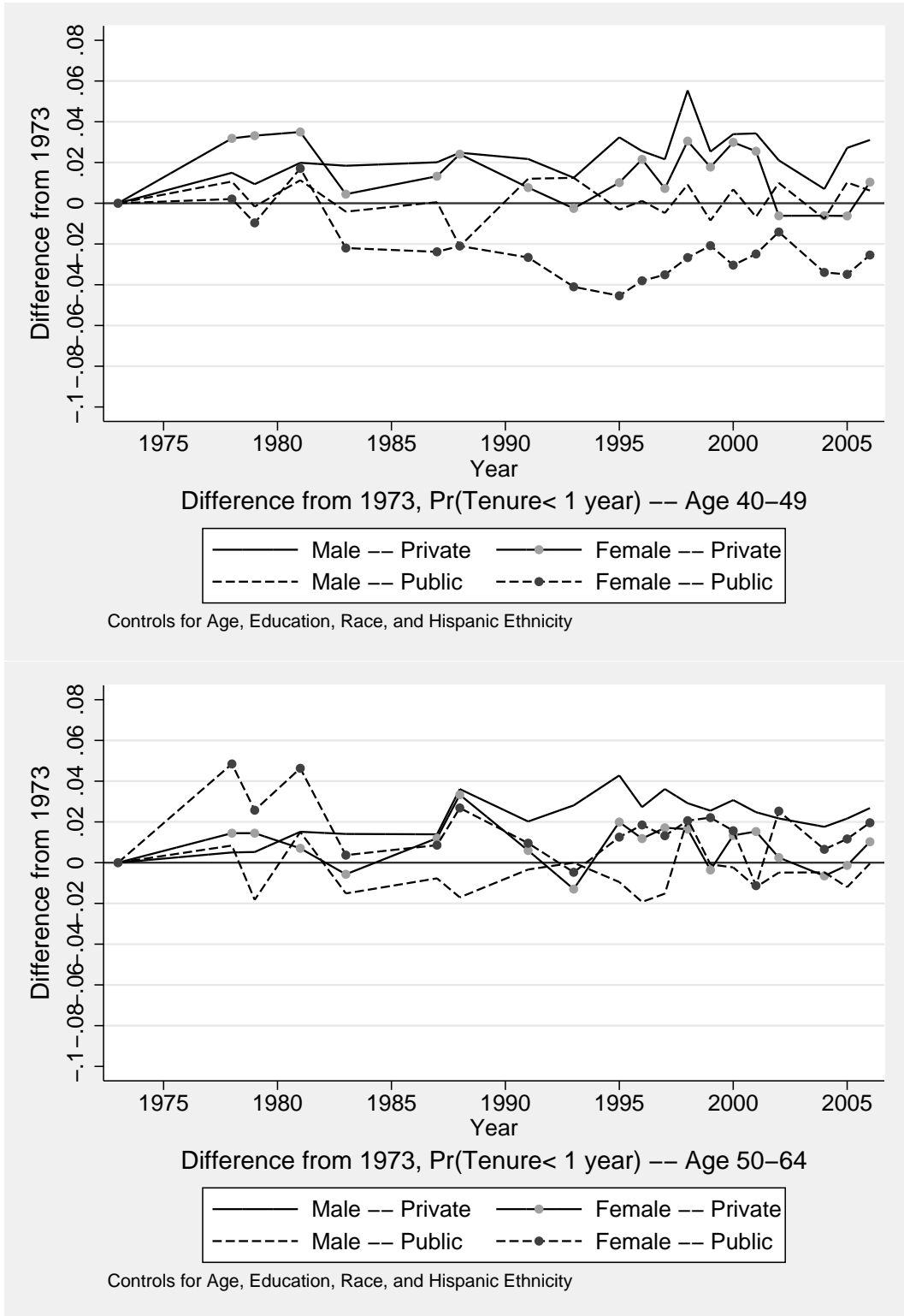
Figure 11: Year Effects on $Pr(T < 1)$ (Age 40-49 and 50-64)

Workers in the public sector have a very different experience. Job tenure and the incidence of long-term employment relationships have increased in the public sector for both men and women. The contrast in the experience of the private and public sectors reflects important differences between these sectors. There has not been the increase in competitive pressures or decline in unionization in the public sector that has been seen in the private sector and likely are important components of the decline in job security in the private sector. The fact that job tenure and the incidence of long-term employment relationships in the public sector grew more for women than for men is consistent with the stability of the public sector reinforced for women by their increased attachment to the labor force.

Further analysis of churning in the labor market as reflected in the new-job rate (the fraction of jobs with tenure less than one year) indicates that there has consistently been a high level of turnover for young workers (less than 30 years of age), both male and female. However, as these workers age into their thirties, it appears that males have become less likely to settle into longer-term jobs as reflected by an increase in the new-job rate for males in this age group. In contrast, females in their thirties have become more likely to stay in their jobs.

I conclude that the nature of the private-sector employment relationship in the United States has changed substantially in ways that make jobs less secure and workers more mobile. The precise reasons for the changes in the structure of jobs that has yielded these changes are unclear and beg further research. One possibility is that the move away from long-term employment relationships reflects less demand by employers for a stable labor force, perhaps due to increased competitive pressure. What is clear is that young workers today should not look forward to the same type of career with one firm experienced by their parents.

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Appendix: The CPS Data on Employer Tenure

At irregular intervals, the Census Bureau has appended mobility supplements to the January or February Current Population Surveys. The years in which they did so include 1951, 1963, 1966, 1968, 1973, 1978, 1981, 1983, 1987, 1991, and in even years from 1996-2006. These supplements contain information on how long workers have been continuously employed by their current employer, and they are asked of all eight CPS rotation groups. However, only the supplements since 1973 are available in machine-readable form. Information on job durations is also available in pension and benefit supplements to the CPS in May of 1979, 1981, 1983, and 1988, and in April 1993. These supplements contain information on how long workers have been working for their current employer, and they are asked of four of the eight CPS rotation groups. Finally, information on job durations is available in the continuous and alternative employment arrangement supplements (CAEAS) to the CPS in February of 1995, 1997, 1999, 2001, and 2005. In total there are 21 CPS supplements with information on employer tenure available in machine readable form over the period from 1973 to 2006, and my analysis relies on these data.[15]

With the exception of jobs of less than one year, all of the supplements before the February 1996 mobility supplement collect data on job duration in integer form reporting the number of years employed. For jobs of less than one year, the mobility supplements report the number of months employed while the pension and benefit supplements report only the fact that the job was less than one year old. The February 1996 and later mobility supplement ask workers how long they have worked continuously for their current employer

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[15] See the Appendix to Farber (2007a) for a discussion of issues of comparability over time in these data.

and accepts a numerical response where the worker specifies the time units. The 1995-2005 CAEAS ask workers how long they have worked for their current employer and accepts a numerical response where the worker specifies the time units. Virtually all workers in jobs even five years old and all workers in jobs 10 years old or longer, report job durations in years.

One reasonable interpretation of the integer report of the number of years is that workers round to the nearest integer when they report jobs of duration of at least one year.[16] For example, a response of 10 years would imply tenure greater than or equal to 9.5 years and less than 10.5 years. In order to create a smooth tenure variable, I assume that the distribution of job tenure is uniform in these one-year intervals. Given a reported tenure of T years, I replace T by $T - 0.5 + u$ where u is a random variable distributed uniformly on the unit interval.[17]

My sample consists of 876,063 not self employed workers aged 20-64 from the 21 CPS supplements covering the period from 1973 to 2006. The self-employed are not included because the concept of employer tenure is less clear for the self-employed, and, in any case, the CPS supplements do not contain consistent information on tenure for the self-employed.

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[16] This ignores the heaping of the tenure distribution at multiples of five and ten years.

[17] Where reported tenure is zero years, I assume that tenure is uniformly distributed between zero and one and define tenure as u. Given that jobs are more likely to end earlier in the first year than later in the first year, this is not completely accurate (Farber, 1994). However, the measures used in my analysis will not be affected by this representation. Where reported tenure is exactly one year, I assume that true tenure is uniformly distributed between 1 and 1.5 and define tenure as $1 + u/2$.