HAS JAPAN'S LONG-TERM EMPLOYMENT PRACTICE SURVIVED? DEVELOPMENTS SINCE THE 1990s

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Japan's traditional long-term employment practice, loosely termed "lifetime employment," once attracted much attention, but its fortunes have not been tracked since the 1990s. The authors use micro data from the Japanese government's *Basic Survey on Wage Structure* to estimate permanent full-time workers' tenure patterns in the years during and following Japan's decade-long recession. Mean tenure, they find, grew for both genders between 1990 and 2003. The main explanation for this trend was a changing relationship between tenure and the attributes of workers and firms, rather than changes in the attributes themselves—although the importance of the latter increased for some women. Beyond the tendency at the mean, the authors find substantial variation. Notably, workers who had gained employment protection under the traditional system, mostly in large firms, saw larger gains in mean tenure than did other workers. This divergence, the authors suggest, could eventually exacerbate lifetime income inequality in Japan.

Firms' practice of providing long-term employment for permanent full-time workers has been regarded by many as a distinguishing characteristic of the Japanese labor market (Hashimoto and Raisian 1985, 1991; Clark and Ogawa 1992a; Brunello and Ariga 1997). While most research suggests that "lifetime employment" was limited even in its heyday to a small fraction of the work force, and mostly to employees of large domestic corporations, the practice became an ideal to which even small and medium-sized enterprises aspired (Chuma 1997). Given the considerable public interest in long-term employment and the numerous intensive studies of it that were conducted until the 1990s, it is surprising that very few researchers have investigated whether the practice survived Japan's so-called "lost decade," a period of historically high unemployment rates and substantial changes in the economic structure.

Several studies have found evidence that the mean job tenure of full-time workers was trending upward in the first half of the 1990s (Chuma 1998; Genda and Rebick 2000; Rebick 2001), and Ono (2005) confirmed the continuation of that pattern through 2000. We posit, however, that looking at only the mean tenure may be insufficient for assessing whether there have been changes in "long-

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The estimation programs are available upon request from the authors. Although the authors cannot provide the data directly, a recent legal reform provides for the availability to researchers of official government data through the proper channels.

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term employment" in the Japanese labor market. We therefore investigate in detail what has happened to the overall tenure distribution to provide new evidence regarding the years of tenure of Japanese permanent full-time workers after 1990.

Exploiting a rich micro-level data set from the *Basic Survey on Wage Structure* compiled annually by the Government of Japan—a resource used, as well, by all of the other studies on the Japanese long-term employment custom mentioned in this paper—we begin by providing simple averages of years of tenure for permanent full-time employees annually from 1990 to 2003. We then perform a Oaxaca-Blinder decomposition analysis to determine what factors were responsible for changes in the average years of tenure. These changes could stem from changes in worker or firm attributes, or from shifting relationships between those attributes and job tenure, or from a combination of the two. Finally, a second decomposition analysis, employing the approach developed by DiNardo, Fortin, and Lemieux, investigates factors responsible for structural changes that were ignored by the mean decomposition.

The aim of these analyses is to establish new stylized facts regarding changes in Japan's "traditional" long-term employment practice after the decade-long recession.

Data Description

We use micro-level data for 1990–2003 from the *Basic Survey on Wage Structure,* compiled annually by the Government of Japan. This survey, which samples a representative cross-section of workers and firms, provides data not only on workers' tenure and wages, but also on various other detailed attributes of workers and firms. It has several advantages for exploring the issues examined in this paper.

First, to ensure that the data are representative, the government collects an exceptionally large number of observations randomly sampled from all regions in Japan. The annual number of observations is approximately 1.5 million workers from 60,000 to 70,000 business establishments, which is sufficiently large to provide an overview of what is happening in the Japanese labor market. The sample includes all business establishments, both private-sector and public-sector, with 10 or more permanent employees, as well as a random selection, in numbers proportionate to prefecture size, of business establishments with 5 to 9 permanent workers. Among the data collected for each firm are its industry and number of employees.

Second, the survey contains multiple variables that are potentially related to the determinants of tenure length. The unit of analysis is an individual worker with relevant information about the establishment. The collected data include each worker's age, sex, educational attainment, full-time/part-time status, permanent/temporary status, type of work or job, paid wage (regular monthly income in June and bonuses in the previous year), and working days/hours, as well as each firm's attributes, including the number of permanent workers, firm size, industry, and location. We restrict our sample to permanent full-time workers[1] who are likely participants in the long-term employment practice.

To provide a preliminary picture of Japan's long-term employment practice, Table 1 reports the trend of the average years of tenure for male and female permanent full-time workers aged 15–65 in the private sector. In this study, "tenure" is defined as the number of years an employee has worked for his or her current firm. Contrary to the prevailing perception, we observe that between 1990 and 2003, the average years of tenure for full-time male and female workers *grew,* respectively, by 1.5 years (from 12.6 years to 14.1 years) and by 2.1 years (from 7.3 years to 9.4 years). Thus one might be tempted to conclude that the "traditional" employment practice not only survived the dramatic changes that

[1]Permanent workers (called *Joyo Rodo Sha* in the statistics) are defined as those who are not on contracts that clearly specify a time period. This classification includes part-time workers whose contract period is not specified, but as stated, our analysis covers only permanent full-time workers. The share of part-time workers among permanent workers increased for both genders between 1990 and 2003: from 0.7% to 2.6% for men, and from 16.0% to 27.9% for women.

took place in Japan's economic circumstances in the 1990s, but even expanded afterward.

If growth in tenure is the apparent pattern at the mean, however, it is notable that the *variance* in the years of tenure also grew. Our next task, therefore, is to examine whether the extension of long-term employment was universal for full-time workers or whether, instead, it was correlated with specific attributes of workers or firms. In the following two sections we address this issue using two different decomposition procedures.

Changes in the Mean Years of Tenure: The Oaxaca-Blinder Decomposition

In this section, we employ a Oaxaca-Blinder mean decomposition to account for years of tenure (Oaxaca 1973; Blinder 1973). The extension of years of tenure for permanent full-time workers might be explained by changes in such worker attributes as increased age or educational attainment, or changes in firms' industry or size composition. Another possible mediator is changes in the *relationship* between workers' attributes and job tenure. More specifically, the dynamics by which education, age, or other characteristics affected average years of tenure may themselves have changed. The main purpose of the analysis is to decompose the difference in the average years of tenure into the two components. The well-known decomposition procedure we employ (Lemieux 2002) is expressed as follows. We start with the regression model

$$Y_{it} = X_{it}\beta_t + \varepsilon_{it}, \quad (1)$$

where i indicates the observation and t is the time period. The variable Y_{it} is the years of tenure for individual i at time t. The vector X_{it} is a set of covariates that affect the length of tenure, including attributes of workers and firms. The parameter vector β_t is a set of parameters, and the error term ε_{it} is assumed to have a zero conditional mean.

The mean decomposition is expressed as

$$\bar{Y}_t - \bar{Y}_s = (\bar{X}_t - \bar{X}_s)\beta_s + \bar{X}_t(\beta_t - \beta_s), \quad (2)$$

where $\bar{Y}_t$ and $\bar{Y}_s$ are average years of tenure prevailing at times t and s, respectively, and $\bar{X}_t$ and $\bar{X}_s$ are sets of the means of each explanatory variable prevailing at times t and s, respectively. The parameters β_t and β_s are sets of estimated coefficients obtained by the OLS regression to use the observation at times t and s, respectively. Thus, the relationships $\bar{Y}_t = \beta_t\bar{X}_t$ and $Y_s = \beta_s\bar{X}_s$ hold.

Table 1. Average and Variance of Years of Tenure between 1990 and 2003.

	Average		*Variance*	
Year	*Male*	*Female*	*Male*	*Female*
1990	12.63	7.33	102.99	55.04
1991	12.76	7.38	106.35	57.12
1992	12.97	7.51	109.26	58.57
1993	12.89	7.14	111.32	57.24
1994	13.07	7.41	112.38	58.20
1995	13.27	7.69	114.20	59.40
1996	13.35	8.10	116.10	62.91
1997	13.56	8.33	118.73	65.01
1998	13.49	8.38	120.08	66.45
1999	13.73	8.73	120.02	68.70
2000	13.92	8.99	120.84	70.52
2001	14.12	9.20	121.75	71.93
2002	13.90	9.14	120.12	71.43
2003	14.05	9.42	120.59	73.65

Note: The sample consists of permanent full-time workers in the private sector aged 15–65, per the data in the *Basic Survey on Wage Structure.*

Before proceeding to the estimation, we provide a brief description of the set of explanatory variables used in the decomposition analysis. The summary statistics of these variables are reported in Table 2. Since we are examining long-term changes in length of tenure, we choose four points in time to perform the mean decomposition: 1990, 1995, 2000, and 2003. For brevity, we report the summary statistics for 1990 and 2003 only. All explanatory variables are indicators that take the value of 1 or 0.

First, we observe notable trends in two worker attributes: age structure and educational attainment. Between 1990 and 2003, the share of workers younger than age 25 decreased and the share of workers age 25–34 increased, especially in the case of female workers. The higher educational attainment is more remarkable. The share of male university graduates increased from 21% in 1990 to 31% in 2003, and that for female workers increased from 4% to 14%. The increase in the share of two-year college graduates is also notable, especially

Table 2. Descriptive Statistics.

	Male		*Female*	
Independent Variable	*1990*	*2003*	*1990*	*2003*
Years of Tenure	12.63	14.05	7.33	9.42
Age				
15–19	0.02	0.01	0.05	0.01
20–24	0.09	0.06	0.22	0.14
25–29	0.12	0.13	0.13	0.19
30–34	0.12	0.15	0.08	0.14
35–39	0.13	0.13	0.09	0.10
40–44	0.15	0.12	0.12	0.09
45–49	0.13	0.12	0.11	0.10
50–54	0.11	0.14	0.10	0.12
55–59	0.08	0.11	0.07	0.09
60–65	0.03	0.04	0.03	0.03
Education				
Junior High School	0.22	0.08	0.22	0.06
Senior High School	0.53	0.52	0.57	0.51
Two-Year College	0.04	0.09	0.16	0.29
University	0.21	0.31	0.04	0.14
Firm Size				
5000+	0.18	0.15	0.13	0.12
1000–4999	0.14	0.17	0.11	0.14
500–999	0.08	0.09	0.07	0.09
300–499	0.06	0.08	0.06	0.08
100–299	0.15	0.16	0.16	0.17
30–99	0.20	0.20	0.23	0.22
10–29	0.15	0.12	0.18	0.14
5–9	0.04	0.04	0.06	0.04
Industry				
Mining	0.02	0.01	0.01	0.00
Construction	0.06	0.09	0.02	0.03
Manufacturing	0.46	0.40	0.44	0.32
Utilities	0.02	0.03	0.01	0.01
Transportation and Communications	0.15	0.11	0.04	0.05
Wholesale	0.09	0.08	0.11	0.10
Finance and Insurance	0.05	0.05	0.11	0.10
Real Estate	0.02	0.01	0.02	0.01
Services	0.14	0.23	0.25	0.38
Large City	0.46	0.44	0.37	0.39
Number of Observations	762,393	714,169	343,842	266,816

Note: The sample consists of permanent full-time workers in the private sector aged 15–65, per the data in the *Basic Survey on Wage Structure.*

for female workers: from 16% in 1990 to 29% in 2003.

Next we turn to the firms' attributes. The shares of firms in the largest and smallest categories—5,000+ employees and 5–29 employees, respectively—declined between 1990 and 2003, while the proportion of firms that were medium-sized remained level or increased. In regard to industrial sector, the share of all male workers who were employed in the manufacturing industry declined from 46% in 1990 to 40% in 2003. The decline was larger for female workers: from 44% to 32% during the same period. In contrast, male service industry workers as a proportion of all male workers substantially increased, from 14% in 1990 to 23% in 2003. Again, the expansion was more remarkable for female

Table 3. Oaxaca/Blinder Decomposition.

	Male			*Female*		
	1995	*2000*	*2003*	*1995*	*2000*	*2003*
$\bar{X}_t\hat{\beta}_t - \bar{X}_{1990}\hat{\beta}_{1990}$	0.638	1.288	1.420	0.368	1.661	2.089
(t = 1995,2000,2003)	(0.017)	(0.017)	(0.017)	(0.018)	(0.020)	(0.021)
$(\bar{X}_t - \bar{X}_{1990})\hat{\beta}_{1990}$	0.255	0.272	0.323	–0.038	0.520	0.740
(t = 1995,2000,2003)	(0.012)	(0.012)	(0.013)	(0.012)	(0.013)	(0.014)
$\bar{X}_t(\hat{\beta}_t - \hat{\beta}_{1990})$	0.384	1.015	1.097	0.406	1.141	1.349
(t = 1995,2000,2003)	(0.012)	(0.013)	(0.014)	(0.015)	(0.018)	(0.019)

Note: The sample consists of permanent full-time workers in the private sector aged 15–65, per the data in the *Basic Survey on Wage Structure.*

workers: from 25% to 38%. Finally, the share of workers in large cities went mostly unchanged during the period.

Table 3 shows the contribution of the first and second terms in equation (2) to the difference in the average length of tenure during three periods: 1990–95, 1990–2000, and 1990–2003. Although we do not report the estimated coefficients of all explanatory variables, most of the coefficients have the expected signs and are statistically significant.[2] First, the coefficients on the age cohorts are positive and larger for older cohorts. The size of the coefficients on the age cohorts for both male and female workers peaked at the 55–59 bracket in 2003.[3] Moreover, the average tenure for workers aged 50 and over became longer and longer over the years 1990–2003 for both genders, and the increase in the average tenure over the period is much larger for them than for other age cohorts. Second, most of the coefficients on educational levels, with high school diploma as the reference category, are negative and statistically significant. The length of tenure declined between 1990 and 2003 for both male and female university graduates, but increased for male junior high school graduates and female two-year college graduates. Third, the estimated coefficients are larger for firms with more employees. Compared with workers in firms with 10–29 employees, male and female workers in firms with 5,000 or more employees enjoyed additional tenure of 9 years and 4 years, respectively. The gap among firms of different sizes did not change much between 1990 and 2003. Fourth, the length of tenure was typically shorter in the non-manufacturing sector than in manufacturing. The average tenure in the services industry, whose share of total employment increased by about 10 percentage points between 1990 and 2003 for both genders, became shorter and shorter over the years 1990–2003, even though it was already much shorter than tenure in manufacturing in 1990. Finally, regional variation diminished for male workers and increased for female workers.

These observations demonstrate that in recent years, long-term employment has not been universal for full-time workers in Japan. The length of tenure has varied greatly depending on the attributes of workers and firms.

The Oaxaca-Blinder decomposition based on the estimated coefficients reveals some interesting findings. First, for both male and

[2]The Appendix provides the estimated coefficients for 1990 and 2003.

[3]The size of the coefficients on age cohort peaked out at the 50–54 bracket for male workers in 1990. This change is caused by the higher mandatory retirement age attributed to the 1994 revision of the elderly employment promotion law (*Koreisha Koyo Sokushin Hou*), which required larger firms to raise the standard retirement age from 55 to 60 by 1998. Many firms in Japan had complied with the law before it became effective because the Ministry of Labor strongly advised firms to follow the "model" retirement age set by the ministry (Clark and Ogawa 1992b). In addition, the coefficients on the 60–65 brackets increased substantially during the period. This may be because re-employment after mandatory retirement became more common (Clark and Ogawa (1997).

female workers we find that changes in the relation between worker attributes and job tenure accounted for more than half of the change in average years of tenure. In other words, changes in the *impact* of the attributes on job tenure explain the overall change in average years of tenure more than changes in workers' and firms' attributes *per se* do. Of the 1.42-year gain in average tenure for male workers over the 1990–2003 period, only 0.32 years (22.7%) are accounted for by changes in workers' and firms' attributes, with the remaining three-quarters being explained by a change in the relationship between attributes and job tenure. Similarly, of the 2.09-year gain in tenure for the average female worker over the same period, only 35.4% (0.74 years) is owing to changes in workers' and firms' attributes, and the remaining two-thirds is explained by changes in attributes' effects on job tenure.

Second, a comparison of the results for 1990–95 with those for 1990–2003 reveals gender differences in the contribution of the change in worker or firm characteristics to the change in average years of job tenure. Specifically, it declined over the period for male workers (from 40.0% in 1990–95 to 22.7% in 1990–2003), whereas it increased for female workers (virtually no effect in 1990–95, versus 35.4 % in 1990–2003).

In sum, the decomposition analyses indicate that changes in the length of tenure after the 1990s were caused primarily by changes in the impact of the attributes on the years of tenure. In other words, changes in the length of tenure were not primarily determined by changes in worker or firm characteristics *per se,* although the relative contribution of those characteristics did grow for female workers in recent years.

Changes in the Distribution of Years of Tenure: The DiNardo-Fortin-Lemieux Decomposition

This section addresses changes in the distribution of years of tenure for permanent full-time workers by employing a DiNardo, Fortin, and Lemieux decomposition (DiNardo, Fortin, and Lemieux 1996; DiNardo 2002; Lemieux 2002). Going well beyond a mean decomposition, this procedure examines an entire distribution by using a semi-parametric approach. The merit of this method is that it visually decomposes the change in the tenure distribution into two parts: the change in the distribution of the attributes, and the change in the effect of attributes on years of tenure. To examine the long-term changes in the length of tenure, we compare the actual distributions in 1995, 2000, and 2003, and the counterfactual distributions defined as what the density of tenure would have been in 1995, 2000, and 2003 had the attributes of workers and firms remained at their 1990 level.

We will briefly describe the procedure, using as an example a comparison between the 1990 and 2003 distributions. The distribution of job tenure in 1990 is expressed as

$$(3) \qquad f^{1990}(Y) = \int f^{1990}(Y|X)\, h(X|t = 1990)\, dX,$$

where $f^{1990}(Y|X)$ is the tenure determination mechanism in 1990 that maps workers' and firms' attributes X to the distribution of tenure, which is denoted as Y. The density $h(X|t = 1990)$ is the p.d.f. of attributes in year 1990. Similarly, the distribution of tenure in 2003 is expressed as

$$(4) \qquad f^{2003}(Y) = \int f^{2003}(Y|X)\, h(X|t = 2003)\, dX.$$

What the tenure distribution would be in 2003 if the distribution of X were identical to its distribution in 1990s is expressed as

$$(5) \qquad f^{2003}_{1990}(Y) = \int f^{2003}(Y|X)\ \ h(X|t = 1990)\, dX.$$

It is difficult to estimate this counterfactual distribution directly, because there are many explanatory variables included in the vector X, and the integration takes place in a space of very high dimensionality. The DiNardo, Fortin, and Lemieux approach employs a "re-weighting" method to overcome this difficulty. The counterfactual distribution can be rewritten as

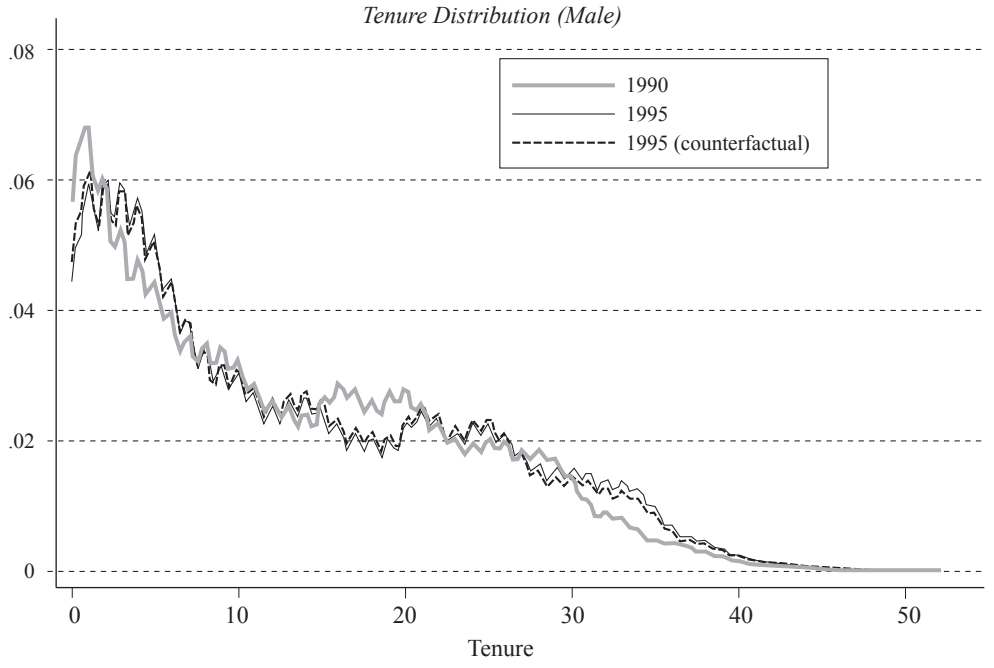
$$(6) \qquad \begin{aligned} f^{2003}_{1990}(Y) &= \int f^{2003}(Y|X)\, h(X|t = 1990)\, dX \\ &= \int \omega f^{2003}(Y|X)\, h(X|t = 2003)\, dX, \end{aligned}$$

where

$$\omega \equiv h(X|t = 1990)\ /\ h(X|t = 2003).$$

Figure 1. DiNardo, Fortin, and Lemieux Decomposition.

Panel A: 1990-1995 Comparison



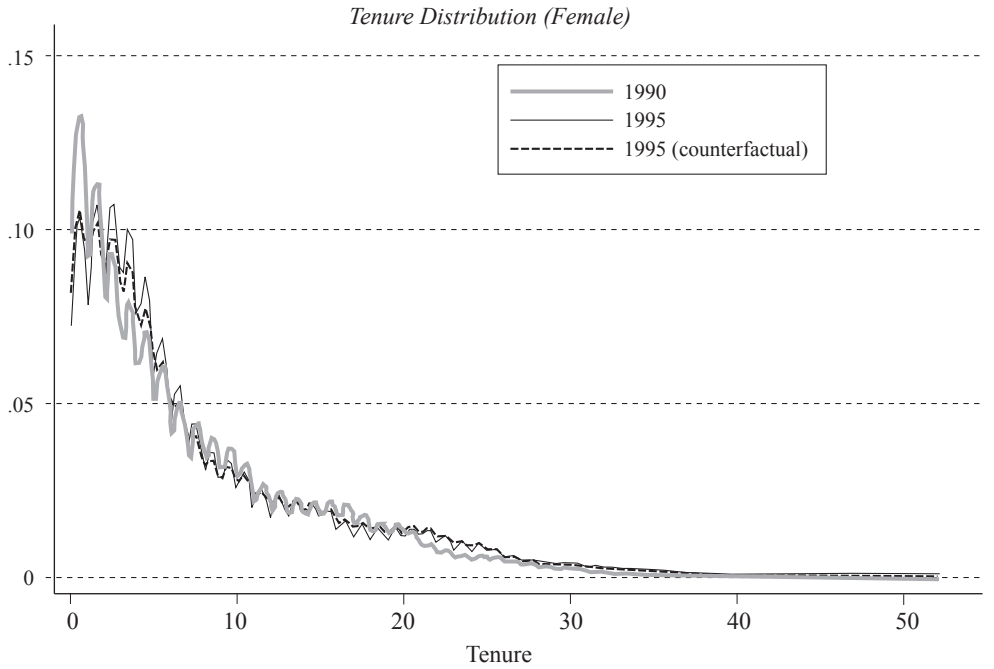
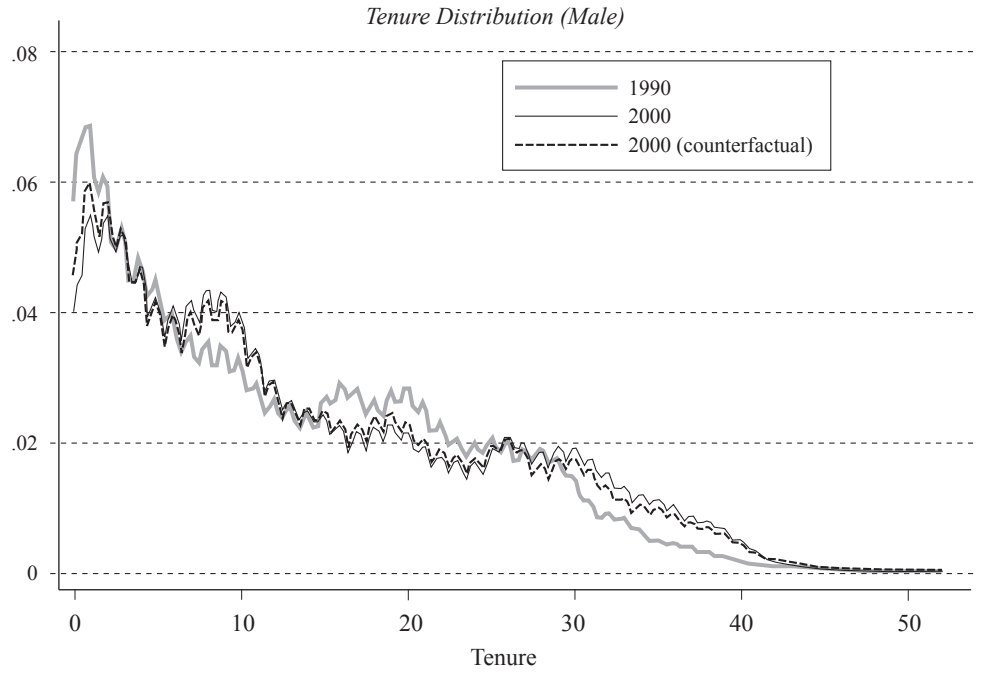


Figure 1. DiNardo, Fortin, and Lemieux Decomposition *(cont'd).*

Panel B: 1990-2000 Comparison



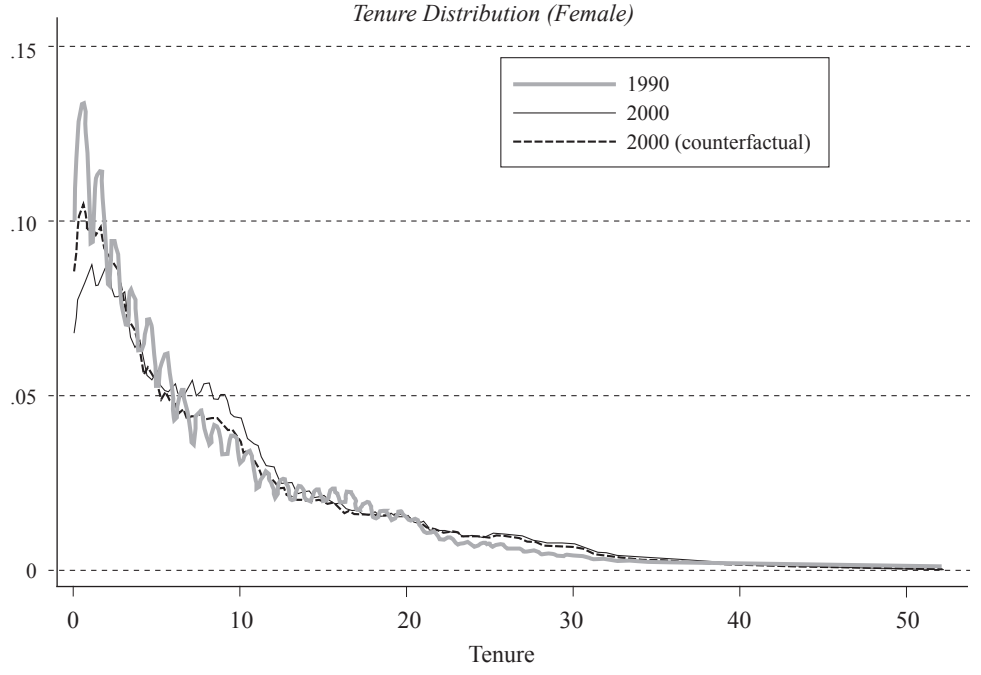
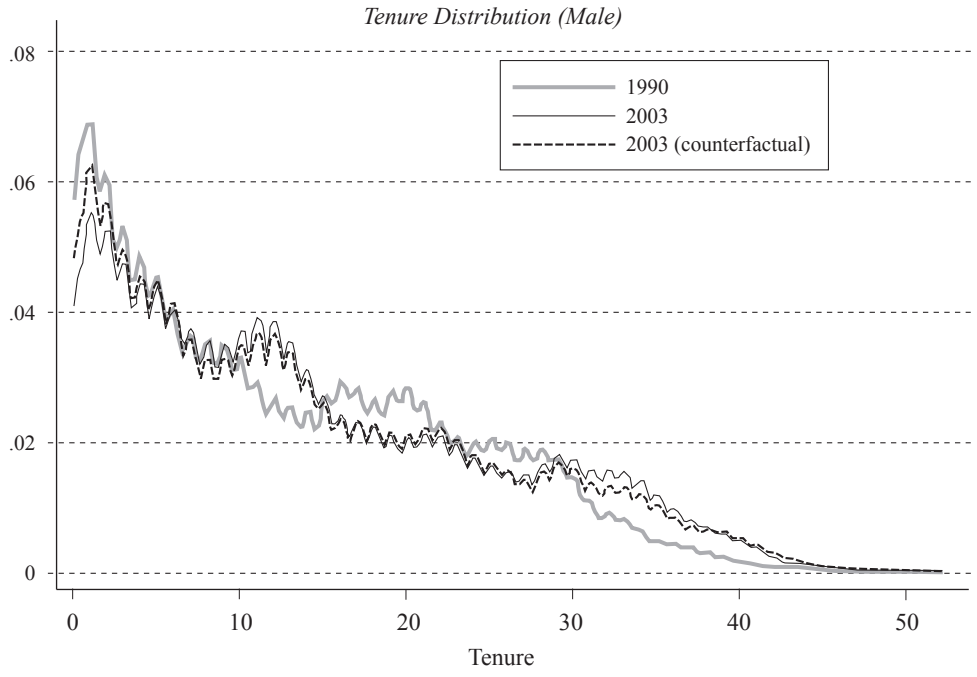
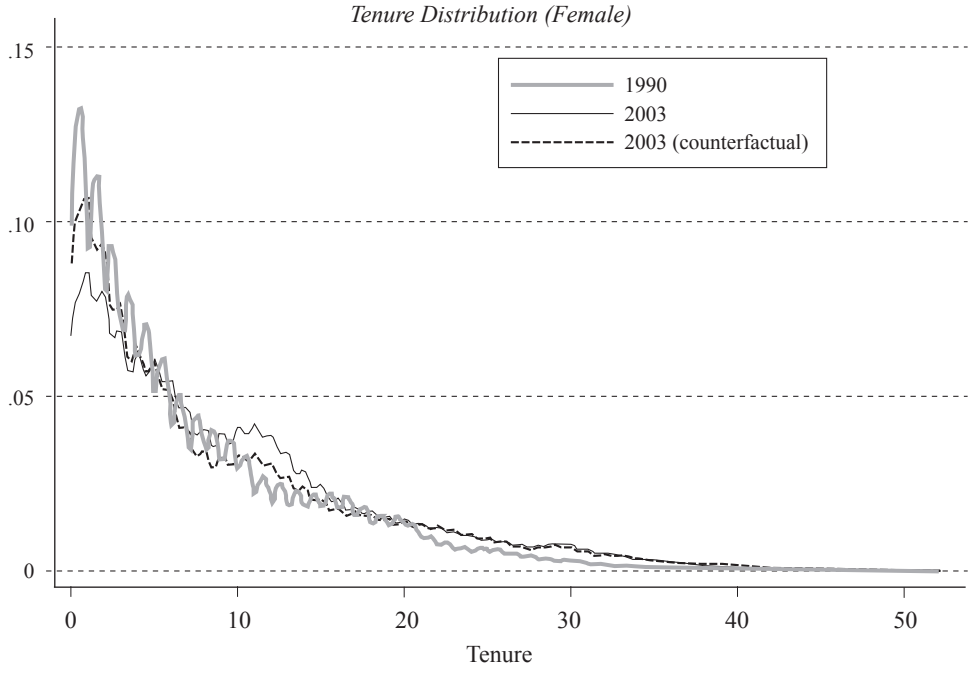


Figure 1. DiNardo, Fortin, and Lemieux Decomposition *(cont'd)*.

Panel C: 1990-2003 Comparison





Based on the Bayesian rule, we obtain

$$\omega = \frac{P(t = 1990|X)\ P(t = 2003)}{P(t = 2003|X)\ P(t = 1990)}.$$

The conditional probabilities, $P(t = 1990|X)$ and $P(t = 2003|X)$, are propensity scores for the specific observations in 1990 and 2003, respectively, conditioned on X. These propensity scores are calculated by the logit model in this analysis. The terms $P(t=1990)$ and $P(t=2003)$ are calculated based on the proportion of the observations from 1990 and 2003, respectively, in the pooled data. Using the calculated weight ω, we obtain the counterfactual distribution by a kernel density estimation.

Figure 1 reports the actual distributions in 1995, 2000, and 2003 and the counterfactual distributions, assuming that workers' and firms' attributes had remained at their 1990 level. We present the distributions for male and female permanent full-time workers separately for 1990–95 (Panel A), 1990–2000 (Panel B), and 1990–2003 (Panel C). Three important patterns are clearly in evidence across these groups.

First, long-tenured workers, whose job tenure exceeds 30 years in the case of male workers or 20 years for female workers, were more likely to enjoy longer tenure over time. The gap between the counterfactual distribution in 1995, 2000, and 2003 and the actual distribution in 1990 is caused by the change in the effects of attributes on job tenure, while the gap between the counterfactual distribution and the actual distribution in 2003 is explained by the change in the distribution of attributes. We observe that the change in tenure distribution between 1990 and 2003 is captured by the difference between the actual 1990 distribution and the counterfactual distribution for male workers with 30–45 years of tenure and for female workers with 20–35 years of tenure. The decomposition analysis implies that the change in the distribution is caused mainly by the change in the relationship between attributes and length of tenure rather than the change in the distribution of attributes. This observation is consistent with the lengthened tenure for older age cohorts in the previous section.

Second, middle-tenured male workers with 15–30 years of tenure formed an "extended cluster" in 1990 that disappeared in later years. The cluster of the middle-tenured workers is redistributed to long-tenured or short-tenured ones. This pattern is found also for female workers with 15–20 years of tenure, although the cluster in their case is much smaller than that for male workers.

Third, among both male and female workers whose job tenure was less than 15 years, we observe a cluster that moved to the right in later years and reached 10–15 years of tenure in 2003. While we observe this change for both male and female permanent full-time workers, the gap between the actual distribution in 1990 and the counterfactual distributions reveals that the change in the tenure distribution is explained by different factors. In the case of male workers, a comparison of 1990 and 2003 reveals that the counterfactual distribution is closer to the actual distribution in 2003. This implies that the change in the job tenure distribution between 1990 and 2003 for male workers in the cluster was caused mainly by the change in the effect of attributes on length of tenure. The results in the previous section imply that this cluster is formed of workers aged 25–29 whose tenure lengthened and those aged 30–34 whose tenure shortened. Presumably, the former group is the generation that entered the labor market after the most severe period of the recession beginning in the first half of the 1990s, and the latter is the generation that was affected most seriously by the economic downturn. In the case of female workers, however, we observe that the counterfactual distribution is closer to the actual distribution in 1990. This implies that the change in the distribution of job tenure between 1990 and 2003 for female workers in the cluster was caused mainly by the change in the distribution of attributes, that is, the larger shares of those aged 25–29, those aged 30–34, and two-year college graduates reported in Table 2.

In sum, the decomposition of the whole tenure distribution for permanent full-time workers indicates that the increase in tenure depended, in part, on how much tenure the workers had to begin with; specifically, the

higher the pre-existing level of tenure for a group of workers, the greater the average increase in tenure those workers subsequently experienced. Overall, the DiNardo, Fortin, and Lemieux decomposition shows that the change in the distribution of permanent full-time workers was largely caused by the change in the effect of attributes on tenure rather than the change in the distribution of attributes of workers and firms, except for short-tenured female workers. This finding corresponds to the finding from the Oaxaca-Blinder decomposition.

Concluding Remarks

Using a micro data set from the *Basic Survey on Wage Structure,* we have aimed to provide new evidence on long-term employment practices in Japan since the country's decade-long recession by giving an overview and decomposition analyses for Japanese permanent full-time workers after 1990. We performed two decomposition analyses to investigate changes in mean tenure and the distribution of years of tenure in years after the 1990s. These results demonstrate that the increase in job tenure observed between 1990 and 2003 was not experienced uniformly by permanent full-time workers. We find that post-1990s changes in the length of tenure of male and female workers alike were mainly linked to changes in the impact of worker and firm attributes on the years of tenure, rather than to changes in those attributes. We also observe a divergence in length of tenure *among* permanent full-time workers between 1990 and 2003. Workers who had succeeded in gaining protection under the umbrella of "traditional" employment practice, mainly in larger corporations, enjoyed greater tenure gains than did other workers.

When considered in conjunction with the rising share of part-time workers in recent years, our new findings hold an important implication for income inequality, which is the focus of an ongoing nationwide debate (*Economist* 2006). Our evidence warns that lifetime earnings inequality could be even larger than the cross-section inequality that we usually measure. Those who are in a long-term employment relationship, mostly in large corporations, presumably enjoy relatively high earnings and stable employment, while those outside the practice are subject to relatively low earnings and unstable employment. Future research should examine the relationship between long-term employment status and lifetime earnings. Moreover, current studies, including this research, cover only people who work. Considering the recent increase in the number of non-employed young people in Japan, the decline of the proportion of all workers who have a long-term employment relationship could be even starker. We hope to see further research using large-scale household surveys with data not only on workers but also on non-labor-force participants.

Appendix
The Estimated Coefficients in the Oaxaca/Blinder Decomposition

	Male		*Female*	
Independent Variable	*1990*	*2003*	*1990*	*2003*
Age (Reference: 15–19)				
20–24	1.980	2.099	1.954	1.616
	(0.061)	(0.106)	(0.051)	(0.117)
25–29	4.764	5.080	4.883	4.486
	(0.060)	(0.103)	(0.054)	(0.116)
30–34	8.504	8.405	7.404	7.715
	(0.060)	(0.103)	(0.059)	(0.117)
35–39	12.173	11.794	8.807	9.935
	(0.059)	(0.103)	(0.056)	(0.119)
40–44	15.558	15.428	9.454	11.442
	(0.058)	(0.103)	(0.054)	(0.119)
45–49	18.724	19.097	10.959	13.070
	(0.059)	(0.103)	(0.055)	(0.119)
50–54	20.394	22.255	12.778	14.738
	(0.060)	(0.103)	(0.056)	(0.117)
55–59	19.451	23.258	13.697	16.424
	(0.062)	(0.104)	(0.061)	(0.120)
60–65	13.392	16.158	13.753	15.356
	(0.073)	(0.111)	(0.078)	(0.136)
Education (Reference: High School Diploma)				
Junior High School Graduation	–0.004	1.169	–0.284	0.200
	(0.022)	(0.036)	(0.029)	(0.058)
Two-Year College	–0.666	–0.717	–0.469	0.034
	(0.043)	(0.035)	(0.031)	(0.034)
University	–2.083	–2.250	–1.196	–1.308
	(0.023)	(0.023)	(0.052)	(0.043)
Firm Size (Reference: 5–9)				
5000+	8.487	8.463	2.937	3.562
	(0.046)	(0.055)	(0.054)	(0.078)
1000–4999	6.815	6.557	2.816	3.520
	(0.046)	(0.054)	(0.054)	(0.075)
500–999	5.663	5.714	1.885	2.556
	(0.050)	(0.058)	(0.059)	(0.079)
300–499	4.704	4.935	1.465	2.103
	(0.051)	(0.059)	(0.059)	(0.080)
100–299	3.157	3.578	0.517	1.133
	(0.045)	(0.054)	(0.049)	(0.072)
30–99	1.177	1.458	–0.560	–0.073
	(0.044)	(0.053)	(0.047)	(0.070)
10–29	–0.493	–0.188	–1.039	–0.424
	(0.045)	(0.055)	(0.048)	(0.073)
Industry (Reference: Manufacturing)				
Mining	–1.707	–2.532	0.493	–0.180
	(0.066)	(0.105)	(0.136)	(0.233)
Construction	–0.636	–0.327	–0.167	–0.085
	(0.037)	(0.035)	(0.073)	(0.080)
Utilities	1.421	0.494	1.177	–0.479
	(0.059)	(0.055)	(0.126)	(0.121)

Continued

Appendix *(Continued)*

	Male		*Female*	
Independent Variable	*1990*	*2003*	*1990*	*2003*
Transportation & Communications	–1.832	–3.047	2.875	–0.989
	(0.026)	(0.032)	(0.056)	(0.067)
Wholesale	0.001	–0.669	–0.147	–0.690
	(0.030)	(0.037)	(0.035)	(0.049)
Finance & Insurance	0.149	0.043	–1.612	–1.063
	(0.039)	(0.045)	(0.039)	(0.053)
Real Estate	–3.693	–2.883	–1.759	–1.658
	(0.068)	(0.086)	(0.083)	(0.121)
Services	–1.454	–1.843	–0.336	–1.575
	(0.026)	(0.025)	(0.027)	(0.033)
Large City (Reference: all but the large cities)	0.065	0.023	–0.108	–0.132
	(0.017)	(0.019)	(0.022)	(0.028)
Constant	–2.796	–2.350	–0.314	0.045
	(0.068)	(0.111)	(0.064)	(0.129)
Number of Observations	762,393	714,169	343,842	266,816
R-Squared	0.49	0.49	0.35	0.37

Notes: The dependent variable is years of tenure. The sample is permanent full-time workers in the private sector aged 15–65 per the data in the *Basic Survey on Wage Structure.*

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