

On Unemployment Duration and Narrowing Job Opportunities at Older Ages

Natalya Dygalo
University of Saskatchewan

Abstract

Using a French employer-employee longitudinal dataset for 1976-1996, I present the first direct evidence from workers' employment histories suggesting that job opportunities decline with age and that there is a connection between longer nonemployment duration and limited job opportunities for older workers. This evidence is in the form of segregation curves and indexes that show a more limited set of industry/occupation cells in new jobs compared to old jobs for older workers whose nonemployment spells exceed one year, and no or moderate change in job opportunities for older workers with shorter spells and younger workers with short and long nonemployment spells.

Citation: Dygalo, Natalya, (2007) "On Unemployment Duration and Narrowing Job Opportunities at Older Ages." *Economics Bulletin*, Vol. 10, No. 21 pp. 1-6

Submitted: October 19, 2007. **Accepted:** December 21, 2007.

URL: <http://economicsbulletin.vanderbilt.edu/2007/volume10/EB-07J00008A.pdf>

1. Introduction

Literature on ageing suggests that newly hired older workers are clustered in fewer industries and occupations than newly hired younger workers (and all older workers) and that older workers face barriers to entry in some firms, industries, and occupations (Hutchens (1988), Hirsch et al (2000), Daniel and Heywood (2007)). In addition, older workers on average experience longer unemployment spells compared to younger workers (Chan and Stevens (2001)). This paper adds to the body of evidence on job opportunities for older workers by, for the first time, comparing the distributions of new and old jobs among industries and occupations for older and younger recent hires. Further, the evidence presented in this paper suggests that there is a connection between nonemployment duration and limited job opportunities for older workers¹.

Using segregation curves and indexes, and a large longitudinal matched employer-employee dataset for France, I find that both older (55+) and younger (26-35) new hires who secure a new job within a year have similar distributions of jobs among industries and occupations compared to their old jobs. If we assume that the job distribution for older workers after short nonemployment spells reflects older workers' choices and is unaffected by barriers to entry, then that finding implies that older workers' preferences for industries and occupations do not change, compared to their previous jobs. This evidence alleviates the concerns that many of the findings of narrowing job opportunities with age can be alternatively explained by changing tastes at older ages (Hutchens (1988), Hirsch et al (2000), Daniel and Heywood (2007)).

Older new hires with long nonemployment spells of more than a year are employed in a substantially more limited set of industries and occupations, compared to their previous jobs. This finding is limited to older workers: younger workers' job opportunities after more than a year between jobs remain almost unchanged. It is possible that factors such as declining health at older ages or bridge jobs before permanent retirement are partially responsible for these patterns in the data. In the context of other evidence², however, these results are consistent with 1) declining job opportunities with age; and 2) limited job opportunities contributing to longer unemployment spells at older ages. These results may be of interest to policy makers designing policies to extend the presence of ageing baby boomers in the labor market.

2. Measures of Segregation and Data

I use segregation curves and indexes to compare two distributions of workers x and y among industries and occupations, and make statements such as " x is more equal than y " (Hutchens (2004), Hirsch et al (2001), Hutchens (1988)). Suppose there are T occupation/industry cells and two types of workers with counts by cell $x = (x_{11}, \dots, x_{1T}; x_{21}, \dots, x_{2T})$, with type one workers ($x_{1j}, j = 1, \dots, T$) being, for example, new male hires aged 55+ hired within two years since last job, and type two, consisting of all other male workers who are not type one ($x_{2j}, j = 1, \dots, T$). A segregation curve plots the cumulative proportion of type two workers ($X_{2r} = \frac{\sum_{t=1}^r x_{2t}}{\sum_{t=1}^T x_{2t}}, r = 1, \dots, T$) on the horizontal axis and the cumulative proportion of type one workers on the vertical axis, with cells ordered by $\frac{x_{1t}}{x_{2t}}, t = 1, \dots, T$. Distribution x is

¹This connection has been hypothesized elsewhere (e.g. Hutchens (1988)).

²There are entry barriers for older workers in jobs with pension benefits, firm-specific training and steep age-wage profiles, which is consistent with the expected effects of deferred compensation and training on hiring of older workers (Hirsch et al (2000), Daniel and Heywood (2007)). Older workers are less likely to be employed (and if re-employed, the jobs are short-lived) four years after displacement compared to similar nondisplaced workers (those results take health into account; Chan and Stevens (2001)).

more equal than y if the segregation curve for x is at all points above or coincides with the segregation curve for y . The Gini index equals to two times the area between the 45% line through the origin and the segregation curve. The square root index can be computed using the following formula³:

$$O(x) = 1 - \sum_{j=1}^T \sqrt{\frac{x_{1j}}{\sum_{t=1}^T x_{1t}} \frac{x_{2j}}{\sum_{t=1}^T x_{2t}}}$$

A larger value for a segregation index implies a more unequal distribution of workers among industry/occupation cells.

The main data source is “Déclarations annuelles des salaires“ (DADS) administered by INSEE (Institut National de la Statistique et des Etudes Economiques) in the years between 1976 and 1996, with the exception of 1981, 1983, and 1990. The data are a 1/25 subset of all workers in the French economy, with the exclusion of civil servants. The sample includes all workers born in October of even-numbered years, and the data are from mandatory reports provided by employers. Self-employed workers are included in the data, but we cannot identify them.

Unique worker-year observations for jobs with the largest number of days paid were used in the analysis; years 1979-1980, 1985-1989, 1992-1996 were used to define new hires as workers who were not employed in the same firm last year. There were 4,964,536 worker-year cells for males (3,650,078 for females), with 26,443 new hires 55+ (15,133) who found a new job within a year, and 8,020⁴ who found a job within 2-5 years (4,471). Older workers with more than one year between employment spells tend to move out of manufacturing into services industries and to less-skilled occupations.

3. Results

Figure 1 presents the main results in the paper: segregation curves indicate almost no change in job opportunities compared to old jobs for older new hires (55+) who secure a new job within a year, with segregation curves for old and new jobs almost overlapping for both males in Figure 1a and females in Figure 1c⁵. There is a substantial increase in segregation for older new hires whose nonemployment spell lasts more than a year, with segregation curves for new jobs at almost all points below segregation curves for old jobs in Figures 1b for males and 1d for females. The results are for 5 occupations and 14 industries (70 cells)⁶.

Table 1 presents segregation indexes that confirm the patterns evident in Figure 1. Both Gini and square root segregation indexes increase substantially for older new hires’ new jobs compared to old jobs if the spell of nonemployment between jobs exceeds one year (Gini: 0.100 to 0.159 for males, 0.097 to 0.127 for females; square root indexes increase from 0.017 to 0.046 for males, and from 0.017 to 0.029 for females). Segregation indexes for old jobs are similar for older new hires with nonemployment spells of under and over one year. There is no change in segregation for older and younger new hires (aged 26-35) with nonemployment

³Any index (including Gini and square root indexes) satisfying four mild properties for a measure of segregation will produce the same ranking of distributions x and y as non-intersecting segregation curves (Hutchens (2004)). The advantages of using numerical indexes in addition to segregation curves are the ability to rank x and y for intersecting or nearly overlapping segregation curves and to compute standard errors for segregation measures. The square root index was shown to be the only index that satisfies seven desirable properties for a measure of segregation in Hutchens (2004). See Hutchens (2004) for more information on the properties of alternative segregation measures.

⁴These numbers include workers with a valid previous employer different from current employer within the last 2-5 years.

⁵To compare old and new jobs, new jobs’ occupation and industry definitions were replaced with old jobs’ in years 1979-1980, 1985-1989, 1992-1996 to ensure the same “other male/female workers” groups for old and new jobs. Using years for old jobs to define “other male/female workers” for old jobs did not change the conclusions.

⁶Designs with up to about 1,300 nonempty cells (38 industries NAP40 and up to 38 occupations PCS) did not change the main conclusions in this paper. Separate results for subperiods before 1989, and 1989 and after did not change the results.

spells of under a year, and there is a slight increase in segregation for younger new hires who find a new job within 2-5 years. Thus, short job search duration does not result in diminished overall job opportunities for older workers but a longer job search appears to result in a substantially diminished set of industries and occupations for older new hires. No similar patterns are evident for younger new hires⁷.

4. Conclusion

Using segregation measures and a large longitudinal matched employer-employee dataset for France, I find that older new hires (55+) who find a job within a year face a similar distribution of new jobs among industry/occupation cells to their pre-displacement jobs and that older new hires who take more than a year to find a new job face a much more restricted set of industries and occupations. No similar strong patterns were found for younger workers (age 26-35). These results constitute more direct evidence on declining job opportunities with age than previously available by comparing old and new jobs for the same recently hired workers by age. In addition, the evidence presented here suggests that there is a connection between longer nonemployment duration and narrowing job opportunities at older ages; further research should clarify the causal link between these two phenomena.

References

- Chan, S. & Stevens, A. H. 2001. Job Loss and Employment Patterns of Older Workers, *Journal of Labor Economics* **19**: 484 – 521.
- Daniel, K. & Heywood, J. S. 2007. The Determinants of Hiring Older Workers: UK Evidence, *Labour Economics* **14**: 35 – 51.
- Hirsch, B. T., Macpherson, D. A. & Hardy, M. A. 2000. Occupational Age Structure and Access for Older Workers, *Industrial and Labor Relations Review* **53**(3): 401 – 18.
- Hutchens, R. M. 1988. Do Job Opportunities Decline with Age?, *Industrial and Labor Relations Review* **42**(1): 89 – 99.
- Hutchens, R. M. 2004. One Measure of Segregation, *International Economic Review* **45**(2): 555 – 578.

⁷From Table 1, older new hires face more limited job opportunities than younger new hires, which is consistent with similar results reported in Hutchens (1988) and Hirsch et al (2000).

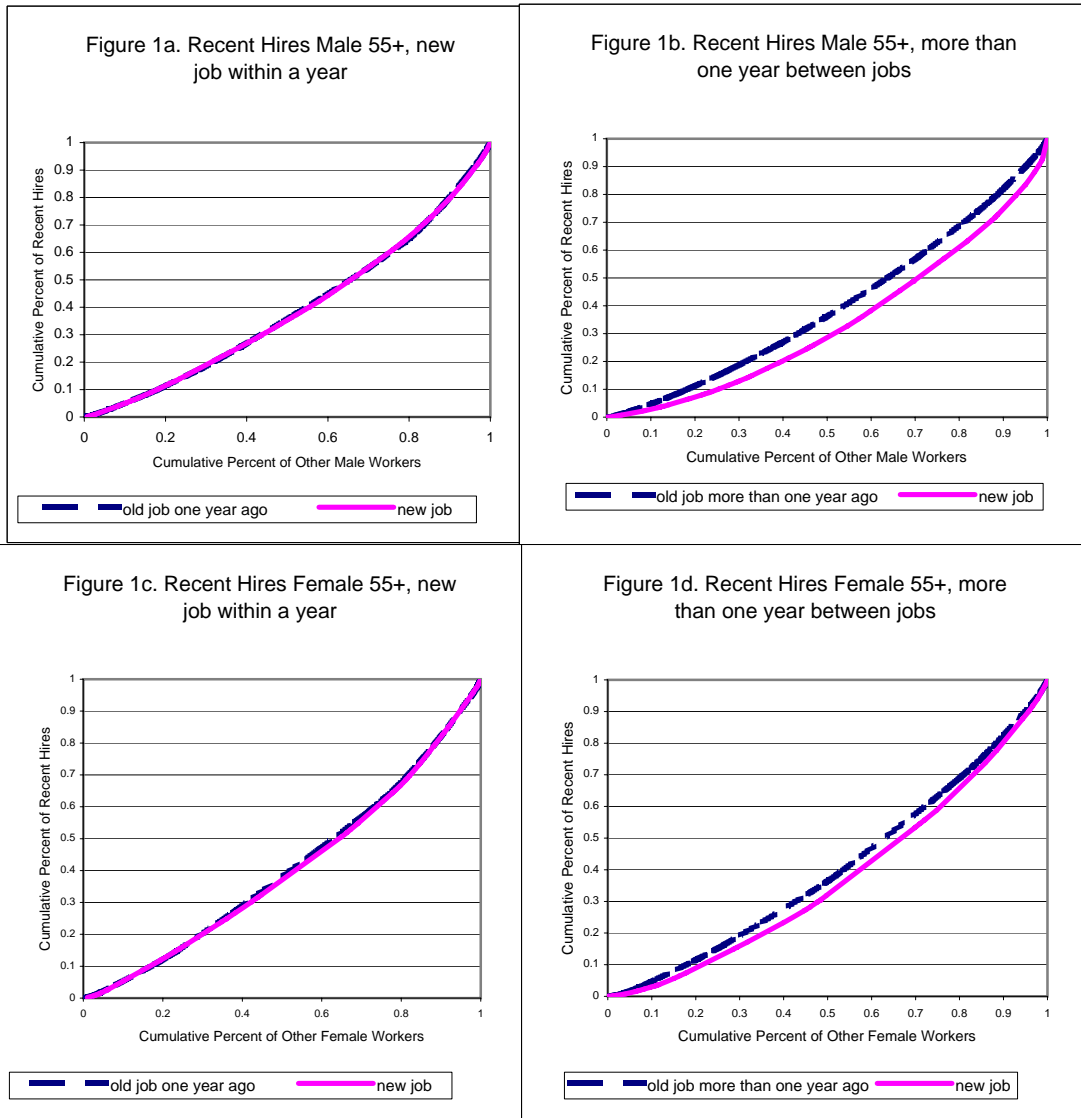


Figure 1. Segregation Curves for Recent Male and Female Hires Aged 55+
 Source: DADS, France, author's computations for 1979-1980, 1985-1989, 1992-1996.
 Recent hires are defined as workers with a different employer in the previous year.
 Cumulative percent of recent hires corresponds to: a. Male, found a job within a year; b. Male, more than one year between jobs; c. Female, found a job within a year; d. Female, more than one year between jobs.

Table 1. Segregation Indexes for Recently Hired Workers' Old and New Jobs

age	type	Gini - new job	Gini - old job	Square Root - new job	Square Root - old job
Recently Hired Male Workers					
55+	one year or less	0.110 (0.002)	0.110 (0.002)	0.020 (0.001)	0.020 (0.001)
55+	more than one year	0.159 (0.003)	0.100 (0.003)	0.046 (0.002)	0.017 (0.001)
26-35	one year or less	0.111 (0.001)	0.117 (0.001)	0.020 (0.000)	0.023 (0.000)
26-35	more than one year	0.141 (0.001)	0.134 (0.001)	0.032 (0.000)	0.031 (0.001)
Recently Hired Female Workers					
55+	one year or less	0.098 (0.003)	0.093 (0.003)	0.017 (0.001)	0.015 (0.001)
55+	more than one year	0.127 (0.004)	0.097 (0.004)	0.029 (0.002)	0.017 (0.001)
26-35	one year or less	0.082 (0.001)	0.083 (0.001)	0.012 (0.000)	0.013 (0.000)
26-35	more than one year	0.089 (0.001)	0.080 (0.001)	0.015 (0.000)	0.012 (0.000)

Source: DADS, France, author's computations for 1979-1980, 1985-1989, 1992-1996

- 1) Recently hired - if last year's employer was different from current year's employer
- 2) Segregation indexes were computed using 14 industries and 5 occupations (70 cells)
- 3) For males/females the comparison group is other males/females (e.g., segregation indexes for recently hired males with a new job within a year were computed by dividing all males into two groups: recently hired males with new jobs within a year and other male workers)
- 4) Bootstrapped standard errors are in parentheses (400 replications, sampling over workers within birth years which replicates the original sampling scheme).