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Understanding the Outcomes of Older Job Losers

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May 2010

Abstract:

We use an unusually rich Canadian survey to examine how post-job-loss behaviour and outcomes vary with age of the job loser. We find that older job losers experience greater post-displacement joblessness, and are less likely to return quickly to satisfactory employment. We show that this apparent age effect is not a job tenure effect or wealth effect. We also find that older job losers, compared to mid-career job losers, are as likely to report searching for work, but that they search less intensely (reporting fewer hours of search, and lower out of pocket expenditures on search). They are also less likely to retrain, less likely to undertake a geographic move, and less likely to switch occupations. Thus, the data suggest older job losers are less likely to make career investments after job loss. This may be a rational response to a shorter time horizon, or to more limited labour market opportunities.

Keywords: job loss, job search, older workers

JEL classification: J60

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1. Introduction

Job destruction, labour turnover, and movements of workers across occupations, industries and geographic locations are normal features of all modern developed economies. Through them a well functioning labour market helps a modern economy adjust to shocks related to the business cycle, technological change, changing international trade patterns, financial or other crisis, or sectoral booms and busts (Kuhn, 2003).

The labour force of most developed countries is aging. A long literature on job displacement, has documented several empirical trends about older workers and involuntary job loss. First, older workers are less likely to experience job displacement (although this gap may be closing). Second, involuntarily displaced from jobs older workers experience longer jobless spells and incur greater earnings losses than their younger counterparts. As the workforce of the developed world age it seems natural to ask questions such as: will the labour market become less flexible? Will older workers make the necessary transitions between industries and occupations? Will the shocks that every modern economy inevitably experiences become more costly?

In surveying and synthesizing a recent multi-country study of displaced workers, Kuhn (2003) argues that the observed age effect in displacement probabilities is really a tenure effect: older workers have been, on average, in their jobs longer, and once one controls for job tenure, displacement rates do not vary significantly by age. However he also argues that there is a “true” age effect in re-employment probabilities and post-job-loss non-employment. It is a consistent finding across many countries that older job

losers take longer to get back to stable employment, and that this effect does not go away when one controls for job tenure.

As Kuhn and others have noted, there are a number of potential explanations for the greater post-displacement joblessness of older displaced workers. These include: (i) Older workers have greater financial resources (wealth) that in turn may lead them to be more selective among re-employment possibilities. (ii) Because they have a shorter time horizon over which to capitalize investments, older workers may be less inclined to make investments (such as retraining, moving geographically, or changing occupations) that would aid them in getting back to work. (iii) Older workers may encounter age discrimination in their attempts to find new work (anticipation of limited labour market opportunities may also lead to reduced investment); (iv) Older workers may suffer from poorer health (while the poorer health itself, may in turn, result from the loss of job).

There are a growing number of analyses, both theoretical and empirical, of the effect of wealth on unemployment durations. These include Stancaelli (1999), Algan et al., (2003), and Lentz and Tranaes (2005). Using the same data as are employed in this paper, Crossley and Low (2004) demonstrate that older job losers typically have greater liquid assets on which to rely during an unemployment spell.

In economic literature on job displacement there are very few papers that focus on the outcomes of older job losers in particular. As far as we are aware, the literature consists of a small number of analyses of the U.S. Health and Retirement Survey (HRS) by Couch (1998), by Chan and Huff-Stevens (1999, 2001, 2004) and by Elder (2004). Chan and Huff-Stevens focus on the association between late career job displacement and retirement. They argue that an involuntary job loss can have effects that both speed and

forestall retirement. The former include a fall in the wage, which induces a substitution towards leisure; the latter include losses of both pension and non-pension wealth, and health and other benefits, all of which have an income effect (and hence may delay retirement.) In their 2004 paper, they conclude that job loss induced retirement is not a sufficient explanation for the low re-employment rates exhibited by older job losers. Elder (2004) estimates a structural search model and concludes that both poorer market opportunities and different tastes for leisure contribute to the greater non-employment of older job losers. Schirle (2009) observes that Canadian job-losers above the age of 50 suffer high (close to 37%) and persistent drop in earnings. Their experience however, is not significantly different than that of job-losers age 35-49. Relative decreases in earnings following job loss are higher among low educated individuals and among those residing in rural areas.

Research focussing on job search and other post-job-loss behaviours among older job losers is also fairly limited. Benitez-Silva (2006) does not focus on recent job losers but does provide evidence (from the HRS) on the extent and determinants of job search among Americans – both employed and non-employed – over fifty years of age. One key finding is that health status is an important determinant of search among all non-employed (many of whom would not be recent job losers).

The idea that older workers might make different investment decisions because they face a shorter horizon over which to capitalize investments is discussed in Bartel and Sicherman (1993). Using the same data as is employed in this paper, Chapman et al. (2003) show that older job losers are less likely to (re)train in the year after a job loss (see especially Table 1.) Jacobson et al. (2003) report some U.S. evidence that older displaced

workers are less likely to retrain than their younger counterparts. Clearly, in thinking about the consequences of an aging workforce for labour market flexibility, it would be very valuable to have a better understanding of the reasons for the greater non-employment of older job losers, including the role of factors such as those listed above.

In this paper, we use a rich and unique data set - the 1995 Canadian Out of Employment Panel (COEP) - to conduct a detailed study of older workers who lost a job. We analyse differences between older and mid career job losers in their post-job-loss investments and re-employment outcomes. We ask if the observed differences can be considered “pure age effects” – perhaps attributable to the difference in investment horizon noted above – or are they attributable to characteristics that differ on average between older and mid-career workers (such as education, occupation and, particularly, wealth)?

A key contribution of the analysis is that we move beyond outcomes such as durations of non-employment and go on to examine the post-job-loss “investment” activities of job losers: job search, retraining, and changes of occupation or location. A second contribution of the paper is that we take advantage of the unusual information on financial resources in the COEP to test for “wealth effects”, both in outcomes (joblessness) and in post-job-loss behaviour. The theoretical effects of wealth are not simple. On the one hand, greater wealth may lead job losers to be pickier about subsequent employment opportunities. On the other hand, it may also allow a job loser to make investments that increase future employability (particularly if it is not possible to borrow to finance human capital investments).

The outline of the rest of the paper is as follows. The next section provides discussion of our data and methods. Results are presented in Section 3, and Section 4 concludes.

2. Data and Methods

2.1 1995 Canadian Out of Employment Panel

The data that form the basis of this study are from the 1995 Canadian Out-of-Employment Panel Survey (COEP). The COEP surveys were developed by Human Resources Development Canada in an attempt to understand the consequences of the legislative changes made to the Canadian UI/EI system.¹ The individuals in the COEP survey are a representative sample of those experiencing a job separation, defined as the issuance of a record of employment (ROE) by the former employer.

Information was collected by means of telephone interviews; for the 1995 survey each respondent was interviewed twice, in approximately the 3rd and 5th quarter after job loss. The data include information on the respondent's pre-separation job, first post-separation job, job at the dates of the interviews, job search and training, and the use of UI benefits and Social Assistance. The surveys also have detailed information on demographics, household composition, household income, household expenditures, household assets and debts, and the labour supply of other household members.

For the research reported here, the COEP data have several distinct advantages. First, the data contain a large number of observations on individuals separated from a job, often because of displacement or dislocation. Thus, it is the ideal source of information on activity of job losers. The high proportion of job losers is an appealing feature of

COEP. It compares favourably with data sets that are representative of the population or the labour force at a point in time and thus contain proportionally fewer job losers.

Second, because the survey is structured around a job separation, it asks very detailed questions about the types of post-job-loss activity that we are particularly interested in (for example, job search and training). Moreover, there is no ambiguity about the timing of measurements relative to job separations. Most questions in the survey are worded to refer to particular periods relative to the job separation (for example, in the month before the separation, or in the period between the separation and the interview.)

Finally the COEP data provide information on a very wide range of items. Importantly this allows us to correlate training, job search, and occupational switches with a large number of characteristics of respondents and their households (for example, the financial circumstances of their households), and this allows us to consider a broad range of factors that may contribute to differences between older and younger job losers. The COEP data are unusual among surveys of job losers in that they contain information on household assets and debts.

2.2 *Sample for Analysis*

The 1995 COEP has 7,818 respondents, all of whom separated from a job. The purpose of this paper, however, is to study job losers, so to select our sample for analysis we dropped all respondents for whom one of the following conditions were true: (i) they separated from one job, but continued to be employed in a second job, (ii) they quit to

take another job and (iii) they had a firm expectation of recall to the job from which they separated. A recall expectation was considered firm if they had an expected date of recall.

The remaining respondents we consider to have lost a job, though we will also consider some subsets (such as those that have no expectation of recall at all) below.

Next we define 'older' workers as those age 50-64 years. We also define a comparison group of mid-career workers, age 35-49 years. For the purpose of regression analysis presented in the next section these groups are further divided into smaller groups each comprised of people born within a five year interval. Respondents younger than 35 and respondents 65 and older were deleted from the analysis sample. These choices are of course arbitrary to a degree. We use 50 years of age as our cut-off in part to insure good sample sizes. Defining older job losers in this way also matches those analyses (see Section 2) based on the U.S. Health and Retirement Study (which examine workers over 50 only). We have 763 job losers aged 50 to 64, and 2040 aged 35 to 49. For the 1995 COEP overall, 79% of those who participated in the first interview also responded to the second interview. The corresponding numbers for our two groups of job losers are 80% (35-49 year olds) and 83% (50 to 64 year olds) respectively. Thus attrition falls slightly with age.

2.3 *Empirical Strategy*

The heart of our empirical strategy is a series of comparisons between older job losers and mid-career job losers. Note that this strategy differs from the usual set up in the displaced worker literature in which involuntary job losers are compared to a control

group of non-displaced workers. Here, in contrast, the comparison group is comprised of younger displaced workers.

It is also worth noting that because our data are a cross section (all of the job losses occurred in the same year), age and cohort are perfectly correlated: our older job losers were born before 1945, while our mid-career job losers were born after 1945. This is important because workers drawn from different cohorts should be expected to differ in a number of ways, such as average educational attainment. When comparing age groups it will be important to control for such differences.

Our comparison of older and mid-career job losers proceeds in two stages. In the first stage we begin with simple comparisons (differences in means and medians) of post-job-loss outcomes between the two groups. Then we investigate whether any apparent age differences can be eliminated by controlling for other potentially relevant variables. For example, older workers are likely to have long job tenure in the jobs they lost, and to have, on average, higher levels of wealth. Moreover, as noted above, our older job losers thus may differ in their average educational attainment, mix of occupations and industries, and other characteristics.

In the second stage of the analysis, we move from examining outcomes to examining post-job-loss activities – particularly those activities that might be considered ‘investments’ in future earnings and employment. Thus we consider aspects of behaviour including (job) search intensity, training, and geographic and occupational mobility. As in the previous stage we begin with simple comparisons of means and medians, and then move to the estimation of appropriate econometric models that control for observable differences between the two groups.

2.4 *Key Variables*

We employ three measures of joblessness: (i) the duration of the initial spell of joblessness from the separation that led to the respondent's inclusion in the sample, (ii) the percentage of respondents who found employment by the time of the second interview, and (iii) the percentage of respondents who found employment and assessed their new employment to be as good as the job that was lost.²

Our measures of search intensity are the average weekly time spent on job search (in hours), and the average weekly out of pocket expenditures spent on job search (in dollars).

We also examine training after job loss, and distinguish two types of training. "assisted" training is paid for by government, the displacing firm, or by a union. In contrast, the out-of-pocket costs associated with "self-financed" training are principally met by the job loser or his or her household. This typology follows Chapman, Crossley and Kim, (2002).

We define two measures of mobility: geographic and occupational. A job loser is defined to have switched occupations if we observe them in a job in an occupation different from the lost job (thus those who experience no post-job-loss employment are deemed not to have changed occupations). We focus on occupational switches because recent research has emphasized the occupational specificity of human capital (Kambourov and Manovskii, 2008).

Job losers are divided into six five-year age groups. Those we classify as 'younger workers' are divided into age 35-39, age 40-44 and age 45-49 groups while those we term

'older workers' belong to age 50-54, age 55-60 and age 60-64 groups. Each group is identified by its own dummy variable that is equal to one if the individual falls within the relevant age group and is equal to zero otherwise. In regressions, the omitted (base) group is job losers age 40-44. Other key explanatory variables are tenure in the lost job and household liquid assets at the time of job loss. The former is measured in months but in all estimated models is captured by a pair of dummy variables indicating job tenures of 12-60 months, and more than 60 months (the omitted group is therefore job tenures of less than 12 month). Household liquid assets are represented by another pair of dummy variables, indicating presence of assets \$0-5,000 and more than \$5,000, (those reporting no assets being the omitted group).

Other covariates are dummy variables for gender, education, occupation, union coverage in the lost job, being the primary earner in the household, the presence of children in the household, homeownership and whether the household had a mortgage.

Summary statistics are presented in Table 1. Some differences are between the older and mid-career job losers stand out immediately. For example, mid-career job losers have higher rates of university education (certainly a cohort effect) and are more likely to have children present in the household (in large part an age effect).

Item non-response is not a significant problem in this data, except for the household asset information at job loss, which is missing for about a quarter of the sample (non-response to asset questions is not unusual). Models including this variable will consequently be estimated on smaller samples. Note also that search intensity measures were only asked of those who reported searching.

2.5 *Econometric Models*

Binary outcomes (search, reemployment, job satisfaction and mobility) are modelled as Probits. For these, marginal effects (rather than coefficients) are reported. Throughout our analysis we allow for the presence of heteroscedasticity. We report robust standard errors and t-test for differences in means and do not impose a common variance on the two groups. Hours searched and out-of-pocket expenses associated with job search are continuous variables but left-censored at zero. We follow a standard approach to study such variables and use Tobit models.

Durations of initial joblessness are analysed with Cox proportional hazard models. The “hazard” at time t is the probability of exiting non-employment at time t , conditional on still being in non-employment at time t . The Cox proportional hazard model posits that the hazard at time t for an individual with characteristics x is:

$$h(t; x) = h_0(t)e^{x\beta}$$

where $h_0(t)$ is the “baseline” hazard. This model can be estimated by partial likelihood method that allows β to be estimated without specifying the baseline hazard function, $h_0(t)$. See Cox (1972) for the original presentation.

We estimate two specifications of each econometric model. Each of the specifications includes the series of age dummies described in the preceding sub section. In addition, our *base* specification controls for the gender, education and occupation of the job loser, as well the tenure that he or she had in the job that was lost, and whether the lost job was covered by a union. Thus the *base* specification reflects a choice of variables common in the literature.

Our *extended* specification includes all the covariates present in the *base* specification and in addition it controls for a number of measures of the financial circumstances of the job loser and his or her household. These include: whether the job loser was the primary earner in the household, whether children are present in the household, whether the household owns their home and if they have a mortgage, and the measures of liquid financial wealth at job loss that were described above.

3. Results

3.1 Joblessness and re-employment

Table 2 presents simple comparisons of post-job-loss outcomes for mid-career and older job losers. The top panel considers the entire sample (as described in section 2.2). Relative to their younger counterparts, older job-losers have longer initial spells of joblessness. The mean difference (which is calculated using completed spells) is over two weeks (14.9 versus 11.3 weeks), and is statistically significant. The median difference – which incorporates incomplete spells – is considerably larger and again strongly statistically significant. We also see that the fraction employed at the second (and last) interview in the panel is significantly higher for the mid-career job losers (54% versus 43%). Note that not all of the employed at the 2nd interview are in their first post-job-loss employment spell and not all of those who are not employed are in their initial spell of joblessness. Finally, we report the fraction that, by the 2nd interview are in a job they deem as good as the one they lost. This fraction is lower for the older job-losers, though the difference is not statistically significant.

The bottom two panels of Table 2 present a parallel set of statistics for two subsets of our sample. The middle panel of Table 2 examines those who had no expectation of recall (rather than no firm expectation only). For both the mid-career and older job losers, this group represents approximately half of the sample analyzed in the top panel. In the second subset we consider only those who reported searching for a job at some time after the initial job loss. Since search can be taken to indicate labour force participation, this subset can be taken as excluding those that withdraw from the labour force/retire after job loss. For both the mid-career and older job losers, this group represents approximately seventy percent of the sample analyzed in the top panel. The patterns of differences between older and mid-career job losers in these two subsets are very similar to the differences documented for our full analysis sample in the top panel of the table. For this reason, all subsequent analysis uses our broadest sample.

We next turn to econometric models for these outcomes. Table 3 reports estimates of reemployment hazard models (see Section 2.5) based on the initial spell of joblessness. Recall that we are reporting hazard ratios rather than coefficients.³ Estimates of our *base* specification are presented in the first column of Table 3. These indicate that male job losers and respondents displaced from a unionized job have shorter spells of initial joblessness. They also indicate significant negative occupational effects (white collar managerial/professional) on the probability of exit but no tenure effects. Most importantly, the significance of the three older age dummies indicates that there is still a statistically significant and sizeable difference between the mid-career (age 40-44) and older job losers after controlling for these covariates.⁴ This supports the conclusion of

Kuhn (2003) that the age effect in post-job-loss employment cannot be attributed to the tenure effect.

The second column of Table 3 report estimates of the *extended* model. Here most of the differences between mid-career and older job losers are substantial but less significant than in the base model. We observe that jobless spells are significantly longer for the disabled, non-primary earners, non-homeowners, those who report no-presence of debt, as well as those who received payout upon the termination of their employment. We observe some effect of liquid wealth at job loss, but that is significant only for those who report presence of assets below \$5000. Tenure effects again remain insignificant.

Table 4 presents estimates of Probit models of the probability of being employed at the second interview in a job deemed as satisfactory as the job that was lost. In Table 2 we saw that, for this outcome measure, the unconditional difference between older and mid-career job losers was not statistically significant. This conclusion changes following further division into narrower age brackets. The results from the *extended* specification suggest strong negative age effects especially for the two oldest age groups.

3.2 *Post Job Loss Investments: Search Intensity, Mobility and Training.*

We turn now to an analysis of the efforts that job losers make to find re-employment and the investments they make in future employability. We begin, as before, with simple comparisons of older and mid-career job losers. These are presented in Table 5. The means indicate that older job losers search less intensely: their average hours spent searching are lower (8.9 hours versus 9.8 hours), as is their average out-of-pocket expenditure on job search (\$18.4 versus \$26.1). This difference in expenditures is

statistically significant at the 5% level. Differences in medians are smaller. The mean differences are similar if we condition on reporting *any* search; this is expected given that the fractions of the two age groups that report searching are almost identical (Table 1.)

Table 5 also reveals that older job losers are less likely to undertake a geographic move after job loss (4.4% versus 7.6%), and less likely to find re-employment by switching occupations (9% versus 14%). Again these differences are statistically significant. Finally, older job losers are less likely to train, and are particularly less likely to undertake “self-financed” training. The rate of self-financed training is among mid-career job losers is more than double the rate among older job losers (13% versus 5%), and differences in both kinds of training are statistically significant.

In the next set of tables (6 through 9) we investigate whether these effects remain after controlling for other relevant variables. Tables 6 and 7 examine search propensity and search intensity respectively. The results presented in Table 6 concur with those from Table 2 - they show no statistically significant difference in the search propensities among any of the age groups. However, Table 7 reveals that even if we control for other potentially relevant variables, there are significant differences between the oldest and the mid-career job losers in either measure of search intensity (hours and expenses). This effect is negative and significant for the age 60-64 group. Additionally job tenure along with education and type of occupation appear to be important variables explaining some of the raw correlation between age and search or search intensity.⁵

With respect to tenure, it appears that workers displaced from jobs in which they had considerable tenure appear to search less intensely (both in terms of time and expenditure) when they do search. Because older job losers have higher tenure on

average, this leads to an (largely spurious) age effect if we do not control for job tenure. Once we control for job tenure and divide our sample into more age groups, there is no evidence (apart for the oldest workers) that age is an important factor in determining the likelihood of job search or search intensity.

Tables 8 and 9 demonstrate that there are some differences between older and mid-career job losers that are robust to controlling for worker and household characteristics. In particular, job losers age 50-59 are about between 5 to 6 percentage points less likely to self-finance some training and those age 55-59 are about 8 percentage points less likely to undergo assisted training. For all age groups there appears to be little difference with respect to job mobility regardless if it is measured by geographic move or change of occupation.

Finally, the unconditional age effects (Table 5) in geographic mobility disappear when we control for other variables. In particular, geographic mobility is higher among the more educated, lower among homeowners, and lower among high tenure job losers. This negative tenure effect is consistently present across all specifications of the geographic move probit. Average job tenure and educational attainment, and the rate of homeownership, all differ between older and mid-career job losers (Table 1) and it appears that these factors explain the unconditional difference in geographic mobility.

4. Conclusions

Previous research suggests that older job losers experience greater post-displacement joblessness. This raises the possibility that adjustment to shocks and to economic change will become more difficult, or more costly, as the workforce ages. Thus

understanding the outcomes of older job losers is important. In this paper we examine post-job-loss behaviour and outcomes of older job losers. We also examine post-job-loss activity, particularly efforts to find new work and investments in future employability.

We find that older job losers experience greater post-displacement joblessness, and are less likely to return quickly to satisfactory employment. This apparent age effect is not a “job tenure” effect. These results echo the previous literature. Moving beyond the previous literature, we demonstrate that these age effects are not “wealth effects” - they remain after controlling for differences in financial resources (particularly liquid assets) at the time of job loss. The results of longer unemployment spell among older workers, their lower likelihood of finding satisfactory employment remain significant after controlling for an extensive list of covariates.

Compared to mid-career job losers, we find that older job losers are as likely to report searching for work, but that they search less intensely (reporting fewer hours of search, and lower out of pocket expenditures on search). They are also less likely to retrain, less likely to undertake a geographic move, and less likely to switch occupations. Thus, the data suggest older job losers are less likely to make career investments after job loss. This may be a rational response to a shorter time horizon, or to more limited labour market opportunities (possible as a result of discrimination). Future research could usefully focus on the reasons for reduced investment by older job losers, and on appropriate policy responses.

**Table 1: Summary Statistics
Older and Mid-Career Job Losers
1995 COEP**

	Age 35-49		Age 50-64	
	Obs	Mean	Obs	Mean
unemployment spell	1624	26.20	630	32.06
employed at 2 nd Interview	1567	0.54	589	0.43
job as good as lost job at 2 nd Interview	1567	0.17	589	0.15
assisted training	1623	0.16	630	0.10
self financed training	1623	0.13	630	0.05
searched for a new job	1588	0.70	600	0.70
search expenditure / week	1060	14.24	386	13.03
hours searched / week	1014	38.36	366	27.33
geographic move	1624	0.08	630	0.04
change of occupation	1613	0.14	626	0.09
Male	1618	0.59	627	0.63
high school	1620	0.44	630	0.32
university or college	1620	0.25	630	0.16
white collar	1624	0.32	630	0.31
manager/professional	1624	0.10	630	0.13
job tenure: 12-60 months	1560	0.30	593	0.27
job tenure: > 60 months	1560	0.30	593	0.39
union member	1614	0.34	625	0.36
presence of children	1624	0.61	630	0.14
received advanced notice of termination	1604	0.20	618	0.18
Disabled	1619	0.08	628	0.16
primary earner	1607	0.70	624	0.74
Homeowner	1618	0.71	626	0.81
mortgage > 0	1596	0.47	621	0.35
presence of assets \$0-5000	1299	0.19	456	0.15
presence of assets > \$5000	1299	0.39	456	0.48
presence of debt	1502	0.65	563	0.48
had a pension	1592	0.36	617	0.37
got a payout	1617	0.41	630	0.38

**Table 2: Employment and Non-Employment after Job Loss
Older versus Mid-Career Job Losers**

		Age 35-49	Age 50-64	Test of Equality ¹
	Number of observations	1624	630	---
Full Sample	A. Mean Initial jobless spell, weeks [CI]	11.3 [11.5, 12.9]	14.9 [13.6, 16.2]	**3.54
	B. Median Initial jobless Spell, weeks [CI]	17.0 [15.6, 18.4]	29.7 [24.4, 33.5]	**4.76
	C. % employed at 2 nd Interview, [CI]	54 [52, 57]	43 [39, 47]	**4.83
	D. % in job as good as lost job at 2 nd Interview, [CI]	17 [15, 18]	15 [12, 18]	0.85
	E. % in job as good as lost job at 2 nd Interview, conditional on employment [CI]	31 [27, 34]	35 [29, 41]	-1.41
Only those with no expectation of recall	% of population [CI]	50 [46, 54]	48 [46, 50]	-1.00
	A. Mean Initial jobless spell, weeks [CI]	11.5 [10.4, 12.1]	13.8 [11.8, 15.7]	**2.07
	B. Median Initial jobless Spell, weeks [CI]	17.6 [15.4, 21.4]	33.4 [26.8 37.1]	**4.93
	C. % employed at 2 nd Interview, [CI]	52 [49, 55]	40 [35, 46]	**3.48
	D. % in job as good as lost job at 2 nd Interview, [CI]	15 [13, 18]	16 [12, 20]	-0.26
E. % in job as good as lost job at 2 nd Interview, conditional on employment [CI]	30 [25, 34]	40 [31, 49]	-2.02	
Only those that searched	% of population [CI]	70 [68, 72]	70 [67, 74]	-0.19
	A. Mean Initial jobless spell, weeks [CI]	14.0 [13.2, 14.9]	17.1 [15.4, 18.6]	**3.30
	B. Median Initial jobless Spell, weeks [CI]	19.5 [17.7, 22.3]	31.0 [25.5, 36.3]	**2.93
	C. % employed at 2 nd Interview, [CI]	52 [49, 55]	41 [36, 46]	** 3.63
	D. % in job as good as lost job at 2 nd Interview, [CI]	18 [16, 20]	16 [12, 19]	1.13
E. % in job as good as lost job at 2 nd Interview, conditional on employment [CI]	35 [31, 39]	38 [30, 45]	-0.68	

** significant at 5% level

* significant at 10% level

¹ Tests for equality of means are heteroscedasticity consistent. Means tested by a two sample t-test with unequal variances.

Medians tested through a t-test on a coefficient of age 50-64 dummy variable in a univariate bootstrapped quintile regression (with 100 repetitions) with unemployment spell as a dependent variable.

² Respondents who attrited before the second interview are not included in rows C. D. and E. calculations.

³ A. includes incomplete spells only.

⁴ B. includes both complete and incomplete spells.

Table 3: Hazard Ratio Estimates, Initial Spell of Non-Employment, Cox Proportional Hazard¹

	Haz. Ratio <i>(Robust Std. Err.)</i>	Haz. Ratio <i>(Robust Std. Err.)</i>
age 35-39 ²	0.96 (0.07)	1.01 (0.08)
age 45-49	0.95 (0.08)	0.90 (0.09)
age 50-54	0.82** (0.08)	0.89 (0.10)
age 55-59	0.66** (0.08)	0.68** (0.10)
age 60-64	0.56** (0.09)	0.82 (0.16)
male	1.21** (0.07)	1.09 (0.08)
high school	1.00 (0.06)	1.06 (0.08)
university or college	0.91 (0.07)	1.03 (0.09)
white collar	0.85* (0.05)	0.83* (0.06)
manager/professional	0.77* (0.08)	0.80* (0.10)
job tenure: 12-60 months	1.03 (0.07)	1.07 (0.08)
job tenure: > 60 months	0.93 (0.06)	0.88 (0.07)
union member	1.38** (0.08)	1.20** (0.10)
presence of children	1.00 (0.06)	0.98 (0.07)
received advanced notice of termination	1.01 (0.07)	0.98 (0.08)
disabled		0.61** (0.07)
primary earner		1.19** (0.10)
homeowner		1.33** (0.12)
mortgage > 0		0.96 (0.08)
presence of assets \$0-5000		0.74** (0.07)
presence of assets > \$5000		0.92 (0.07)
presence of debt		1.14* (0.08)
had a pension		1.13 (0.09)
got a payout		**0.74 (0.05)
Prob > chi2	< 0.01	< 0.01
Number of observations	13034	9321

** significant at 5% level, * significant at 10% level

¹ piece wise linear baseline is split into 4-week periods from 4 to 60 weeks, these are jointly significant in each of the three specifications.

² the omitted categories are: age 40-49, female, below high school education, blue collar occupation, non managerial occupation, non professional occupation, tenure less then twelve months at last job, not a union member, no children in the house, received no advanced notice, not disabled, not a primary earner, not a homeowner, no mortgage on the house, no assets, no debt, no pension, no payout

Table 4: Probit for Employment in Job as Good as Lost Job¹

	Marginal Effect² <i>(Robust Std. Err.)</i>	Marginal Effect <i>(Robust Std. Err.)</i>
age 35-39 ²	-0.03 (0.02)	-0.03 (0.02)
age 45-49	-0.05** (0.02)	-0.02 (0.03)
age 50-54	-0.02 (0.03)	-0.01 (0.03)
age 55-59	-0.08** (0.03)	-0.07* (0.03)
age 60-64	-0.10** (0.03)	-0.11** (0.03)
male	0.03* (0.02)	0.01 (0.02)
high school	-0.01 (0.02)	-0.01 (0.02)
university or college	-0.04* (0.02)	-0.05* (0.03)
white collar	0.01 (0.02)	0.01 (0.02)
manager/professional	-0.05** (0.02)	-0.07** (0.03)
job tenure: 12-60 months	0.01 (0.02)	0.03 (0.02)
job tenure: > 60 months	-0.02 (0.02)	< 0.01 (0.02)
union member	< 0.01 (0.02)	-0.02 (0.02)
presence of children	-0.02 (0.02)	-0.02 (0.02)
received advanced notice of termination	0.01 (0.02)	0.02 (0.02)
disabled		-0.08** (0.03)
primary earner		0.02 (0.02)
homeowner		-0.04 (0.03)
mortgage > 0		0.04** (0.03)
presence of assets \$0-5000		0.01 (0.03)
presence of assets > \$5000		0.06** (0.02)
presence of debt		< 0.01 (0.02)
had a pension		0.01 (0.02)
got a payout		-0.01 (0.02)
Pseudo R2	0.02	0.03
Number of observations	2011	1472

** significant at 5% level

* significant at 10% level

¹ the dependent variable is equal to one if at the second (and last) interview, the respondent is employed and self-reports that the current job is as good as the lost job.

² the omitted categories are: age 40-44, female, below high school education, blue collar occupation, non managerial occupation, tenure less than twelve months at last job, not a union member, no children in the house, received no advanced notice, not disabled, not a primary earner, not a homeowner, no mortgage on the house, no assets, no debt, no pension, no payout

³ marginal effect is for discrete change of dummy variable from 0 to 1

Table 5: Post-Job-Loss Investment: Search, Mobility, and Training, Older versus Mid-Career Job Losers

			Age 35-49	Age 50-64	Test for mean/median equivalence ¹
search	unconditional	hours / week mean [CI]	9.8 [9.3, 10.4]	8.9 [7.9, 9.9]	1.52
		hours / week median [CI]	6 [5, 7]	5 [4, 6]	1.49
		expenditure / week mean [CI]	26.1 [22.4, 29.7]	18.4 [15.7, 21.1]	**3.30
	conditional on searching	expenditure / week median [CI]	10 [10, 15]	10 [10, 10]	<0.01
		hours / week mean [CI]	14.2 [13.6, 14.9]	13.0 [11.7, 14.3]	1.64
		hours / week median [CI]	10 [10, 14]	10 [10, 10]	<0.01
			expenditure / week mean [CI]	38.4 [33.1, 43.6]	27.3 [23.6, 31.1]
		expenditure / week median [CI]	20 [20, 25]	20 [20, 20]	<0.01
		% geographic move [CI]	7.6 [6.3, 8.9]	4.4 [2.8, 6.0]	**3.02
training	% assisted [CI]		16 [14, 18]	10 [08, 13]	**3.45
	% self-financed [CI]		13 [11, 14]	05 [04, 07]	**5.83
% found a job in new occupation	unconditional [CI]		14 [13, 16]	9 [7, 11]	**3.78
	conditional on finding the job [CI]		21 [18, 23]	15 [11, 19]	*2.73
(take home) reservation wage / (take home) wage at job loss	mean [CI]		1.16 [1.13, 1.19]	1.24 [1.09, 1.40]	1.09
	median [CI]		1 [1, 1]	1 [1, 1]	---

** significant at 5% level

* significant at 10% level

¹ Tests for equality of means are heteroscedasticity consistent. Means tested by a two sample t-test with unequal variances.

Medians tested through a t-test on a coefficient of age 50-64 dummy variable in a univariate bootstrapped quintile regression (with 100 repetitions) with unemployment spell as a dependent variable.

Table 6: Search Probits

	Marginal Effect² <i>(Robust Std. Err.)</i>	Marginal Effect <i>(Robust Std. Err.)</i>
age 35-39 ¹	< 0.01 (0.03)	-0.01 (0.03)
age 45-49	-0.02 (0.03)	-0.02 (0.04)
age 50-54	0.03 (0.04)	0.05 (0.04)
age 55-59	0.04 (0.04)	0.02 (0.05)
age 60-64	-0.05 (0.06)	0.01 (0.07)
male	-0.01 (0.02)	-0.04 (0.03)
high school	0.03 (0.02)	0.04 (0.03)
university or college	0.03 (0.03)	0.07** (0.03)
white collar	-0.02 (0.02)	-0.03 (0.03)
manager/professional	0.02 (0.03)	< 0.01 (0.04)
job tenure: 12-60 months	-0.05** (0.03)	-0.05 (0.03)
job tenure: > 60 months	-0.12** (0.03)	-0.12** (0.03)
union member	-0.08** (0.02)	-0.04 (0.03)
presence of children	-0.01 (0.02)	< 0.01 (0.03)
received advanced notice of termination	0.03 (0.03)	0.05* (0.03)
disabled		< 0.01 (0.04)
primary earner		0.05 (0.03)
homeowner		-0.03 (0.03)
mortgage > 0		-0.03 (0.03)
presence of assets \$0-5000		0.02 (0.03)
presence of assets > \$5000		-0.03 (0.03)
presence of debt		0.04 (0.03)
had a pension		< 0.01 (0.03)
got a payout		0.07** (0.03)
Pseudo R2	0.02	0.03
Number of observations	2036	1481

** significant at 5% level

* significant at 10% level

¹ the omitted categories are: age 40-49, female, below high school education, blue collar occupation, non managerial occupation, non professional occupation, tenure less then twelve months at last job, not a union member, no children in the house, received no advanced notice, not disabled, not a primary earner, not a homeowner, no mortgage on the house, no assets, no debt, no pension, no payout

² marginal effect is for discrete change of dummy variable from 0 to 1

Table 7: Search Intensity (Maximum Likelihood Tobits¹)

	Hours Searched		Search Expenditure	
	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)	Coefficient (Standard Error)
age 35-39 ²	0.21 (0.99)	-0.06 (1.13)	-2.78 (5.9)7	-2.84 (7.24)
age 45-49	-0.64 (1.11)	0.41 (1.30)	0.16 (6.6)8	3.55 (8.26)
age 50-54	0.43 (1.26)	1.16 (1.51)	-4.01 (7.7)2	0.34 (9.67)
age 55-59	-2.16 (1.57)	-1.81 (1.93)	-1.93 (9.3)7	-3.80 (12.36)
age 60-64	-5.46** (1.98)	-2.62 (2.64)	-28.67** (12.0)4	-20.48 (16.64)
male	1.66** (0.79)	0.35 (1.03)	17.61** (4.84)	9.28 (6.58)
high school	1.77** (0.85)	1.73* (1.01)	8.32 (5.12)	3.59 (6.46)
university or college	2.54** (1.02)	2.88** (1.24)	16.18** (6.18)	14.97* (7.91)
white collar	-0.65 (0.83)	-0.90 (0.98)	-9.64* (5.08)	-10.98* (6.35)
manager/professional	3.54** (1.18)	2.12 (1.42)	7.43 (7.32)	-1.05 (9.26)
job tenure: 12-60 months	-1.49* (0.89)	-1.10 (1.04)	-3.41 (5.36)	-3.51 (6.60)
job tenure: > 60 months	-4.46** (0.89)	-4.31** (1.07)	-21.03** (5.42)	-25.15** (6.87)
union member	-3.89** (0.80)	-2.97** (1.09)	-15.46** (4.88)	-20.07** (7.04)
presence of children	-1.22 (0.81)	-0.53 (0.97)	3.03 (4.90)	7.98 (6.20)
received advanced notice of termination	1.09 (0.92)	1.41 (1.07)	6.95 (5.54)	11.26* (6.76)
disabled		-4.26** (1.48)		-15.08 (9.39)
primary earner		1.70 (1.11)		9.51 (7.130)
homeowner		-2.51** (1.24)		1.67 (7.910)
mortgage > 0		1.23 (1.09)		-1.38 (6.97)
presence of assets \$0-5000		1.68 (1.23)		13.79* (7.80)
presence of assets > \$5000		0.29 (1.01)		1.14 (6.44)
presence of debt		0.53 (0.91)		11.28* (5.83)
had a pension		0.36 (1.07)		16.33** (6.87)
got a payout		1.96** (0.91)		15.53** (5.79)
constant	7.25** (1.31)	5.93** (1.95)	-8.96 (7.89)	-29.55** (12.57)
Pseudo R2	0.01	0.01	< 0.01	0.01
Number of observations	2026	1487	1970	1461

** significant at 5% level

* significant at 10% level

¹ In order to assure that heteroscedasticity does not affect our results, the results from Maximum Likelihood Tobits presented here were compared against those obtained through Symmetrically Trimmed Least Squares iterative procedure as suggested by Powell (1986). Both sets of results were similar.

² the omitted categories are: age 40-49, female, below high school education, blue collar occupation, non managerial occupation, non professional occupation, tenure less then twelve months at last job, not a union member, no children in the house, received no advanced notice, not disabled, not a primary earner, not a homeowner, no mortgage on the house, no assets, no debt, no pension, no payout

Table 8: Training Probits

	Assisted Training		Self-Financed Training	
	Marginal Effect ² (Robust Std. Err.)	Marginal Effect (Robust Std. Err.)	Marginal Effect (Robust Std. Err.)	Marginal Effect (Robust Std. Err.)
age 35-39 ¹	< 0.01 (0.02)	< 0.01 (0.02)	0.01 (0.02)	0.02 (0.02)
age 45-49	-0.02 (0.02)	0.01 (0.03)	-0.03 (0.02)	-0.02 (0.02)
age 50-54	< 0.01 (0.03)	-0.01 (0.03)	-0.04** (0.02)	-0.05** (0.02)
age 55-59	-0.08** (0.02)	-0.08** (0.03)	-0.07** (0.02)	-0.06** (0.02)
age 60-64	-0.10** (0.02)	-0.06 (0.04)	-0.06* (0.02)	-0.05 (0.03)
male	-0.02 (0.02)	-0.05** (0.02)	-0.03** (0.01)	-0.03 (0.02)
high school	0.07** (0.02)	0.07** (0.02)	0.05** (0.02)	0.03* (0.02)
university or college	0.06** (0.02)	0.05* (0.03)	0.12** (0.02)	0.06** (0.03)
white collar	< 0.01 (0.02)	0.01 (0.02)	0.03** (0.02)	0.05** (0.02)
manager/professional	0.03 (0.03)	0.04 (0.03)	0.05** (0.02)	0.05** (0.03)
job tenure: 12-60 months	-0.04 (0.02)	-0.03 (0.02)	-0.01 (0.01)	-0.01 (0.02)
job tenure: > 60 months	-0.02 (0.02)	-0.02 (0.02)	-0.02 (0.01)	-0.02 (0.02)
union member	-0.01 (0.02)	-0.03 (0.02)	-0.01 (0.01)	-0.02 (0.02)
presence of children	-0.01 (0.02)	-0.01 (0.02)	0.02 (0.01)	0.03* (0.02)
received advanced notice of termination	0.01 (0.02)	0.02 (0.02)	-0.01 (0.02)	-0.01 (0.02)
disabled		0.04 (0.03)		< 0.01 (0.03)
primary earner		0.02 (0.02)		-0.01 (0.02)
homeowner		-0.05* (0.03)		< 0.01 (0.02)
mortgage > 0		0.06** (0.02)		< 0.01 (0.02)
presence of assets \$0-5000		0.03 (0.03)		0.05** (0.03)
presence of assets > \$5000		0.03 (0.02)		0.05** (0.02)
presence of debt		0.01 (0.02)		-0.02 (0.02)
had a pension		0.02 (0.02)		0.03* (0.02)
got a payout		0.01 (0.02)		< 0.01 (0.01)
Pseudo R2	0.03	0.04	0.08	0.09
Number of observations	2099	1523	2099	1523

** significant at 5% level

* significant at 10% level

¹ the omitted categories are: age 40-49, female, below high school education, blue collar occupation, non managerial occupation, non professional occupation, tenure less then twelve months at last job, not a union member, no children in the house, received no advanced notice, not disabled, not a primary earner, not a homeowner, no mortgage on the house, no assets, no debt, no pension, no payout

² marginal effect is for discrete change of dummy variable from 0 to 1

Table 9: Mobility Probits

	Geographic Move		Change of Occupation	
	Marginal Effect ² (Robust Std. Err.)	Marginal Effect (Robust Std. Err.)	Marginal Effect (Robust Std. Err.)	Marginal Effect (Robust Std. Err.)
age 35-39 ¹	0.02 (0.01)	< 0.01 (0.01)	0.04* (0.02)	0.04 (0.02)
age 45-49	-0.01 (0.01)	0.01 (0.02)	< 0.01 (0.02)	-0.02 (0.02)
age 50-54	-0.02 (0.01)	-0.01 (0.02)	-0.04 (0.02)	-0.04 (0.03)
age 55-59	-0.03 (0.02)	-0.02 (0.02)	-0.05 (0.02)	-0.05 (0.03)
age 60-64	-0.03 (0.02)	-0.02 (0.03)	-0.06 (0.03)	-0.03 (0.04)
male	< 0.01 (0.01)	0.01 (0.01)	0.02 (0.02)	< 0.01 (0.02)
high school	0.03** (0.01)	0.03** (0.01)	0.01 (0.02)	0.01 (0.02)
university or college	0.02 (0.02)	0.02 (0.02)	< 0.01 (0.02)	0.01 (0.03)
white collar	< 0.01 (0.01)	< 0.01 (0.01)	0.02 (0.02)	0.02 (0.02)
manager/professional	< 0.01 (0.02)	< 0.01 (0.02)	0.10** (0.03)	0.09** (0.04)
job tenure: 12-60 months	0.01 (0.01)	0.01 (0.01)	-0.03 (0.02)	-0.02 (0.02)
job tenure: > 60 months	-0.05** (0.01)	-0.05** (0.01)	-0.04** (0.02)	-0.04* (0.02)
union member	< 0.01 (0.01)	0.01 (0.01)	-0.04** (0.02)	-0.03 (0.02)
presence of children	-0.02 (0.01)	< 0.01 (0.01)	< 0.01 (0.02)	0.01 (0.02)
received advanced notice of termination	-0.01 (0.01)	-0.01 (0.01)	0.03* (0.02)	0.03 (0.02)
disabled		0.02 (0.02)		-0.02 (0.03)
primary earner		-0.01 (0.02)		0.02 (0.02)
homeowner		-0.06** (0.02)		0.04 (0.02)
mortgage > 0		< 0.01 (0.01)		-0.01 (0.02)
presence of assets \$0-5000		-0.02 (0.01)		< 0.01 (0.02)
presence of assets > \$5000		< 0.01 (0.01)		-0.02 (0.02)
presence of debt		0.03** (0.01)		0.03 (0.02)
had a pension		< 0.01 (0.01)		-0.01 (0.02)
got a payout		< 0.01 (0.01)		0.02 (0.02)
Pseudo R2	0.05	0.07	0.04	0.04
Number of observations	2099	1523	2086	1516

** significant at 5% level

* significant at 10% level

¹ the omitted categories are: age 40-49, female, below high school education, blue collar occupation, non managerial occupation, non professional occupation, tenure less then twelve months at last job, not a union member, no children in the house, received no advanced notice, not disabled, not a primary earner, not a homeowner, no mortgage on the house, no assets, no debt, no pension, no payout

² marginal effect is for discrete change of dummy variable from 0 to 1

Endnotes

¹ The 1995 COEP was conducted by Statistics Canada. Further details are available at <http://www.statcan.ca/English/IPS/Data/72M0001XCB.htm>.

² The exact wording of the question on which this variable is based is: *Compared to the job that ended on [DATE], how satisfied are you in your current job? Are you...*

<1> *Much less satisfied*

<2> *Somewhat less satisfied*

<3> *About the same*

<4> *Somewhat more satisfied*

<5> *Much more satisfied*

We collapse the five categories of response into a binary variable that is equal to 1 for responses 3, 4, and 5 and 0 otherwise.

³ Hazard models estimates are presented as hazard ratios (e^{β}) rather than estimated coefficients. A hazard ratio of one indicates that the variable does not affect the probability of exiting unemployment. A hazard ratio of less than one indicates a decrease in the probability of exit (relative to the baseline) and hence an increase in expected duration. A hazard ratio of greater than one has the opposite interpretation.

⁴ For a constant (exponential) baseline hazard, the inverse of the hazard ratio gives the factor by median duration increases. So, for example, a hazard ratio of 0.8 corresponds to an increase in median duration of 25%.

⁵ Since maximum likelihood Tobit estimates are very sensitive to heteroscedasticity, we have verified the Tobit results by comparing them to Symmetrically Trimmed Least Squares estimates obtained through the iterative procedure suggested by Powell (1986). The resulting point estimates are very similar to those we obtained via the maximum likelihood Tobit.

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