Workers' Task and Employer Mobility over the Business Cycle*

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Abstract

This paper examines how the business cycle affects the extent and *magnitude* of career changes, by measuring differences between the task portfolios of workers before and after job transitions. We separately document task transitions of workers that change employer with (EUE) and without (EE) intervening unemployment spells in the Canadian Labour Force Survey. The business cycle affects the task mobility of EE and EUE movers differently. In recessions, EE transitions move workers into jobs involving *more* cognitive tasks while EUE transitions move workers away from these jobs, into occupations with more low-level physical tasks. The differing cyclical task patterns can inform us about the different forces and considerations that are driving EE and EUE mobility over the cycle, which remain hidden behind a shared procyclicality of EE and EUE mobility rates.

Keywords Career Change, Occupational Mobility, Tasks, Task Distance, Business Cycles

JEL Codes E32; J24; J62

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1 Introduction

Worker mobility between employers and unemployment is a key determinant of macroeconomic outcomes in the aggregate, and income and career growth on the individual level. When analysing these, we typically focus on the binary: whether workers change employer or become (un)employed. However, for both these dimensions, it does not only matter whether workers move, but also what workers *do* in their new jobs – and how this compares to what they stopped doing in their previous job.

In this paper we study how the business cycle affects workers' task portfolios change when they change employers (with and without intervening unemployment spell). Many models of the labor market have incorporated the cyclical patterns of worker mobility. Yet, few have accounted for any interaction between cyclical changes in these worker flows and reallocation across activities and tasks for individual workers.[1] Do workers in recessions move to jobs that are relatively less intense in 'brain', but require more brawn, more so than in expansions? Does this occur whether a worker is going through unemployment or switches employers directly?

Employer transitions are procyclical in the US, with roughly about half of all such job changes are also accompanied by an occupational change (where we call such a simultaneous change a "career change"). Furthermore, the probability a career change is also shown to be procyclical in the US (see e.g Murphy and Topel (1987); Carrillo-Tudela et al. (2014, 2015), Moscarini and Thomsson (2007); Moscarini and Vella (2008); Kambourov and Manovskii (2008, 2009); Hobijn (2012); Longhi and Taylor (2013) and in the UK (Carrillo-Tudela et al., 2016).

At the individual level, a career change may involve movement to a very similar occupation or a very different occupation, depending on the tasks or work activities of the two jobs. This motivates the need for an understanding of the occupational difference, or distance travelled between jobs, in capturing the full extent of work reallocation. A part of human capital may be specific to job tasks (Gathmann and Schönberg, 2010; Poletaev and Robinson, 2008), and hence both the incidence and magnitude of career changes may be important in understanding the magnitude of productivity loss attributable to business cycle fluctuations. More generally, the aggregate of individual workers' reallocation outcomes affects the net mobility of labor resources across tasks in the economy, in good times and in bad times.

[1] A couple of recent exceptions are Carrillo-Tudela et al. (2014); Cortes and Gallipoli (2017); Summerfield (2016); Hairault et al. (2015); Wee (2013); Wiczer (2015); Bizopoulou and Forschaw (2018). The latter focuses exclusively on direct employer-to-employer transitions in the UK, using the angular distance metric from Gathmann and Schoenberg (2010).

In this paper we investigate career changes using confidential versions of the Canadian Labour Force Survey. Our analysis separates Employment-to-Employment (EE) transitions from transitions with an intervening unemployment spell (EUE). In doing so, we demonstrate important differences in the nature of these two transition types that are not immediately obvious when examining raw transition rates.

One contribution of our work is to show how recessions affect the extent of a career change. We propose a simple measure of absolute occupational distance based on the weighted sum of differences across a common set of tasks. The three task measures we use are derived from the Career Handbook (CH), Canada's answer to the Dictionary of Occupation Titles (DOT). These represent cognitive, high-level physical and low-level physical tasks, respectively.[2] We show that the effect of a recession on task distance and direction depends on the type of transition.

A second contribution is to examine how the business cycle affects the direction of a career change. In addition to occupational distance, it may be equally important to understand whether worker mobility favors particular tasks differently across the cycle. Whether or not career changes during downturns are characterized by moves to occupations with decreases in particular tasks may help to provide evidence for the debate about whether recessions are cleansing (Lilien, 1982; Mortensen and Pissarides, 1994; Caballero et al., 1994; Groshen and Potter, 2003; Jaimovich and Siu, 2012) or sullying (Barlevy, 2002; Moscarini and Vella, 2008; Summerfield, 2016). Our findings show that different types of transitions can support these disparate claims. Results for separate movements along each of the three task dimensons suggest that recessions have disparate effects on EE and EUE transitions. Among EE transitions, recessions result in moves that favor cognitive over physical tasks relative to similar moves during economic booms. However, EUE transitions are the opposite. Recessions increase the movement toward physical tasks among workers with transitions that involve unemployment spells.

The Canadian data have some desirable traits that assist in addressing our research questions. First, the data employ a consistent occupational coding for the period from January 1987 to December 2014 and thereby avoid the somewhat inconveniently-timed occupational code changes of the Current Population Survey (CPS) in 1992 and 2003 (See Carrillo-Tudela et al. (2014)). Second, the occupational data we employ from the CH was designed in parallel with the Canadian occupation structure ensuring a seamless match to the data at hand.[3]

[2]The story we tell does not appear to hinge on the precise measure of tasks. Broadly similar results for occupational distance were found mapping in task measures from the O*NET.

[3]The use of Canadian data affords this paper a third contribution by providing evidence on career changes in Canadian labor markets, where the study of occupational mobility is somewhat more limited. Using data from the middle of the twentieth century, McRoberts and Selbee (1981) establish that occupational mobility trends are similar in the US and Canada. Recent analysis using the Survey of

Our results show that in our binary incidence measure, career changes in Canada are procyclical, similar to the findings from the UK and the US mentioned above.

We are not the first to study occupational distance using tasks. Robinson (2018) established that the average occupational distance among displaced workers declined from 1984-2010 using US data and tasks generated from the Dictionary of Occupational Titles (DOT).[4] The analysis of the task-specificity of human capital in the US by Poletaev and Robinson (2008) and Germany by Gathmann and Schönberg (2010) use measures of euclidean task distance, similar to ours. Cortes and Gallipoli (2017) show that task differences contribute relatively little to the overall mobility costs workers face when switching occupations in the US. Finally, Devereux (2000) and Forsythe (2015) use tasks to show that recessions affect worker reallocation within firms unfavorably.

A parallel literature examines the potential mismatch of worker skill and job tasks using similar distance measures (Guvenen et al., 2015; Lise and Postel-Vinay, 2015). Lindenlaub (2017) combines Occupational Information Network (O*NET) task measures and various worker skill measures from the NLSY79 to show that the task-skill match may be more important on the cognitive dimension than on the manual dimension. These are part of the broader literature which analyzes labor markets by treating occupations as a bundle of tasks. Examples not already mentioned include Autor and Handel (2013); Ingram and Neumann (2006) and Yamaguchi (2012), among many others. A review of the task literature is provided in Sanders and Taber (2012).

Finally, our focus on cyclicality places this paper adjacent the empirical literature examining the costs of recessions for workers' careers. Graduating during a recession has been shown to have lasting effects of diminished wages (see Kahn (2010) for the US, Oreopoulos et al. (2012) for Canada, Genda et al. (2010) for Japan and Stevens (2007) for Germany) and the quality of match with workers' occupations or industries (Liu et al., 2016; Speer, 2016; Summerfield and Theodossiou, 2017). The explicit connection to worker mobility is illustrated by Wee (2013), who studies how recessions can hamper mobility and thus diminish the process by which workers learn to identify suitable careers, in a fully stochastic labour market equilibrium model.

The rest of the paper proceeds as follows: Section 2 outlines the data and discusses task measurement. Section Section 3 presents results for the incidence of career changes, Section 4 for the magnitude of career changes, and Section 5 for the direction of career changes in terms of individual tasks. Section 6 provides some context

Labour and Income Dynamics (SLID) shows that about 13% of all employed workers in Canada switch occupation each yearChen et al. (2008). Green (1999) Finds that immigrants to Canada in the 1980s are generally more occupationally mobile than the native born while Phan et al. (2015) show that licensing requirements dis-proportionately limit their occupational mobility. For recent work on labor mobility in Canada see e.g (Agopsowicz and Kyui, 2017)

[4]Robinson's contributions in this line of research date back to 2011.

for our results by way of comparison to same-employer transitions. Section 7 discusses the distribution of tasks left behind and newly taken on, through employer mobility, over the cycle. Section 8 concludes, while further details on data and empirical analyses are provided in the Appendices.

2 Tasks and Measurement

We use data from the Canada's Labour Force Survey LFS spanning the years 1987-2015 to investigate the task mobility of employer movers. In this section, we present the main elements of the data, especially the definition of task dimensions, and leave the more elaborate details for Appendix A. The confidential version of the the LFS allows us to follow workers for six months, which means that for new hires beyond the first month, we observe their previous occupation (solicited also when a worker is unemployed).

An advantage of the Canadian LFS data relative to other commonly used data sources is that it contains high quality and consistently-coded information on occupation, industry and employer. Occupation is coded at the 4-digit level using National Occupational Classification (NOC) 2011 codes throughout the data.[5] Moreover, Statistics Canada, by their own declaration, has emphasized the quality of occupation coding, leading to less miscoding and thereby lower spurious occupational transition rates.[6] We restrict our sample to focus the analysis on individuals fitting the description of a typical labor market participant, focusing on workers aged 16-65, excluding the self-employed and students. We further exclude temporary layoffs (as these workers will typically return to their previous employer, see e.g Fujita and Moscarini (2017)) and imputed records from our labour market transition data.[7] This leaves us with 90,463 observations of direct employer-to-employer (EE) and employer transitions with intervening unemployment (EUE) transitions.

2.1 Workers' Task Dimensions

To measure task (re)allocation, we link the four-digit occupational code assigned to workers' employment to the description of tasks within these occupations. Subsequently, we boil down the occupational information to a set

[5] Statistics Canada has back-coded to cover the entire sample from 1987 forward.

[6] Statistics Canada states that occupation coders are trained extensively and follow well-established coding rules. Occupation encoding also employed a quality assurance procedure where about 20% of the records were coded by a second person, and any non-matching codes were reviewed by a more experienced coder. Moreover, the employer changes and firm tenure variable also appear of high quality, with flags for employer changes coinciding with the correct value of the separate tenure variable essentially everywhere.

[7] Imputations are carried out with a view of representation in the cross-section only, leading to a high likelihood of false transitions. Imputations are very low (essentially zero) until the mid 2000s, reaching a peak of about 5% of observations in the recent samples.

of common occupational 'descriptors'/dimensions that are present in occupations with varying magnitude. This task-based approach to describing occupations is similar to the approach of Autor et al. (2003) and Poletaev and Robinson (2008), among others. Our analysis yields three main (broad) task dimensions. Using these, occupations in our analysis can be interpreted as a location in 3-dimensional task space, where the distance from the origin varies according to the magnitudes of the various task measures.

Concretely, in the first step of this approach, we employ the Career Handbook (CH), which is the Canadian analogue of the US O*NET occupational database (and its predecessor, the Dictionary of Occupational Titles (DOT)). Like other occupational dictionaries, the CH provides a long list of characteristics which we condense in order to establish a manageable set of common tasks. These characteristics are divided into broad categories, including nine "Aptitudes" (such as finger dexterity, verbal ability or spatial perception) grouped by position in the distribution of the working population; three categories describing the complexity of occupational elements "Data/Information, People and Things", scaled in descending order from 8 to 0; Environmental condition measures that describe workplace hazards, scaled from 1-5; six "Physical Activities" (such as vision, strength or hearing) scaled 1-4; the level of required education, and an indicator for extra training.[8] In total there are 23 occupational characteristics. A main advantage of the CH over the O*NET is that the CH is built on-top of the 2006 NOC occupation coding framework and thus it integrates seamlessly into the LFS data, providing task measures for all recorded occupations.[9]

It would be infeasible to draw inferences from the multitude of all CH characteristics, each on a different scale. As a second step, we therefore employ factor analysis to reduce these 23 measures to a set of underlying common elements, or tasks. Our procedure follows roughly that proposed by Poletaev and Robinson (2008). The estimation returns 13 orthogonal factors of which we keep the three with eigenvalues larger than 1. To facilitate interpretation of factors, we rotate the factor matrix orthogonally using the varimax rotation, which maximizes the variance of the squared loadings of each of the original 23 CH elements onto the resulting three task measures. This procedure produces task measures so that each CH element loads heavily onto a single factor. Table 1 presents this factor loading matrix. Task 1 (COG) appears to measure cognitive tasks, correlating

[8] Also available are five "occupational interests" from the Canadian Work Preference Inventory. These are not used as they describe worker preferences rather than job characteristics or requirements.

[9] We step-back the uniform 2011 NOC occupation coding to the 2006 NOC structure using the concordance provided by Statistics Canada, preserving the uniformity of coding between the CH and the LFS data. We also carried out an alternative analysis by mapping occupational characteristics from the O*NET database, instead of the CH database, into the LFS. This procedure employed a crosswalk provided by Statistics Canada. This alternative mapping lead to tasks with similar interpretations and results regarding task distance and direction that were broadly similar.

Table 1: Factor Loading Matrix

CH Elements	COG task	H-PHYS task	L-PHYS
Aptitudes			
General Learning Ability	0.8442	-0.0282	-0.2329
Verbal Ability	0.8659	-0.0845	-0.2182
Numerical Ability	0.6640	-0.1317	-0.1461
Spatial Perception	0.2579	0.3816	0.0249
Form Perception	0.3500	0.5384	0.1298
Clerical Perception	0.2281	-0.1563	-0.4262
Motor Co-ordination	-0.1476	0.8399	0.0653
Finger Dexterity	-0.0253	0.7629	-0.0437
Manual Dexterity	-0.2647	0.6484	0.3320
Complexity of...			
Data/Information	0.8785	-0.0102	-0.0443
People	0.8227	-0.2487	-0.1205
Things	-0.1873	0.7032	0.2040
Physical Activities			
Colour Discrimination	-0.0167	0.2898	0.0339
Vision	-0.1821	-0.0758	0.1738
Hearing	0.4519	-0.0482	-0.1620
Body Position	-0.2613	0.0924	0.7437
Limb Co-ordination	-0.4158	0.416	0.1946
Strength	-0.4770	0.1691	0.6403
Environmental Conditions			
Discomforts	-0.3096	0.1012	0.2882
Location	-0.1535	0.1248	0.4422
Hazards	-0.1420	0.3595	0.5376
Education/Training			
Years of Education	0.6919	-0.0373	-0.1490
Additional Requirements	0.5614	0.0066	0.1962

Factor loadings after varimax rotation. Factor loadings represent how each original CH element contributes to the task measures created by factor analysis. Additional requirements for education and training include “extensive experience, demonstrated or creative ability, appointments, etc." All elements scaled 0-1 except for years of education, scaled 0-18.

heavily (and positively) with education, complex use of data, and cognitive type aptitudes such as general or verbal ability. Task 2 (H-PHYS) appears to capture high-level physical type tasks, correlating positively with aptitudes like perception and motor-coordination, with a high loading on “complexity of things”, while having a weak negative relationship with educational attainment. Task 3 (L-PHYS) seems to measure lower-level physical tasks, correlating with measures of environmental hazards and physical strength. All together, these three tasks explain 73% of the differences across occupations that could be gleaned from the CH database.

Table 2: Task Intensity by 2-Digit Occupation

NOC Code	2-Digit Occupation Title	Task1 Mean	Task2 Mean	Task3 Mean
00	Senior Management	1.749	-0.823	-0.304
01	Middle and Other Management (professional)	1.550	-0.842	-0.409
06	Middle and other Management (services)	0.631	-0.916	0.067
07	Middle and other Management (trades and manufacturing)	1.222	-0.793	-0.383
11	Professionals: Business and Finance	1.113	-0.840	-0.511
12	Skilled Admin & Business	0.261	0.110	-0.837
14	Clerical	-0.555	0.313	-0.960
21	Professionals: Natural &App. Sciences	1.363	-0.172	-0.588
22	Technicians: Natural &App. Sciences	0.378	1.214	-0.261
31	Professionals: Health	1.241	0.664	0.413
32	Technicians: Health	0.089	1.155	0.331
34	Assistants: Health	-0.855	-0.389	0.740
41	Professionals: Soc. Sci, Educ, Gov & Religion	1.360	-0.783	-0.108
42	Paraprofessionals: Law, Soc. Services, Educ & Religion	0.173	-0.730	-0.158
51	Professionals: Art & culture	1.242	0.024	-0.343
52	Technicians: Art, Culture, Rec. & Sport	0.554	1.243	-0.062
62	Skilled Sales and Service	0.254	0.088	0.019
64	Intermediate Sales and Service	-0.501	-0.721	-0.190
66	Elemental Sales and Service	-1.387	-0.447	0.168
72	Trades & Transportation Operation Supervisors	-0.049	0.886	1.014
73	Transportation & Equipment Operators	-0.146	1.054	1.132
74	Intermediate Transport, Equipment operation and maintenance	-1.039	0.205	-0.651
76	Trades Helpers	-1.232	-0.985	1.613
82	Skilled Primary Industry	0.100	0.179	0.658
84	Intermediate Primary Industry	-1.071	0.276	0.645
86	Labourers in Primary Industry	-1.410	-0.040	0.661
92	Supervisors & Skilled Operators : Manufacturing & utilities	0.392	-0.039	0.008
94	Processing & Manufacturing Operators / Assemblers	-1.226	0.242	-0.020
95	Machinists, metalworking and woodworking	-1.175	-0.132	1.033
96	Labourers in Manufacturing & Utilities	-1.364	-0.667	1.263

Source: 2006 Career Handbook. Occupation categories according to 2006 NOC codes. Mean task values by 2-digit occupation. Task values specific to 4-digit NOC occupation codes. Tasks created from career handbook occupational ratings using population weights from the LFS data.

To convey how our tasks map to the occupational distribution, Table 2 presents average task intensities by two-digit occupations. To summarize at the one-digit level, Task 1 has its highest intensity in categories 0 and 4, which are management occupations and occupations in the social sciences, law education and religion, with slightly lower but still considerably positive values for categories 2 and 3 (sciences and health). Task 1 has a negative intensity in many lower skill occupational groupings. Task 2, although representing (high-level) physical tasks, is most intense in group 5 among artists, sport and recreational occupations. However, it is also considerably intense for health occupations and trades. This particular task category presents a dimension that may not respect traditional skill rankings of occupations. Finally, Task 3 (low-level physical) is most prominent among lower skill occupations (categories 7-9) related to operation of equipment, manufacturing and processing. Interestingly, category 3 (Health) has high positive values across all three tasks, suggesting these occupations may require workers with a well rounded set of cognitive and physical skills and abilities.

Occupations may be represented by this 3-element task vector. Below we will study dimension-by-dimension the cyclical patterns of task intensity. In addition, we also define overall distance between two task portfolios, $T_{j,it}, T_{j,it-1}$ as

$$Distance_{it} = \sum_{j=1}^{3} \rho_j |T_{j,it} - T_{j,it-1}| \tag{1}$$

where $T_{j,it}$ is the index value of task j for the occupation of person i (in period t). The task differences are weighted with ρ_j, which is the share of the overall variation explained by each task reported in Table. 5. Note that, unlike the dimension-by-dimension measures, this measure is silent about the upwards or downwards directions of moves along a skill dimension.

2.2 Time patterns: trends, business cycles, policy changes

Our data spans two business cycles in Canada, including the recession from March 1990 to April 1992 and the one from October 2008 to May 2009 (Cross and Bergevin, 2012). The year 2002 also saw an uptick in the unemployment – this did not result in a full-blown recession classified, but nevertheless captures slackness in the labour market.

We focus on the unemployment rate to capture the business cycle and its impact on the labour market. Since the LFS data are the source of Canada's official statistics on employment and unemployment, we generate the unemployment rate directly from the data, prior to sampling restrictions. Our primary indicator of labour market conditions is the national unemployment rate, which will capture the effects of the aggregate business cycle on workers. The average unemployment rate over this period was about 7%. The unemployment series peaks in 1993 at over 11% and reaches its lowest point in 2007 of about 6%. In addition, we account for local labour market conditions by including the difference between national and Economic Region (ER) unemployment rates.[10] Including local deviations may be helpful in identifying localized recessions because the labour market composition differs substantially across the country.

Over this period, the task composition of the Canadian economy changed significantly (see also Figure in Appendix A). While the aggregate intensity of L-PHYS stays rather constant, the intensity of H-PHYS declined throughout the sample period. This is not inconsistent with a shift from industry to services: for example, operators and assemblers are relatively high in H-PHYS tasks while intermediate and elemental sales and services are not at all – all while the L-PHYS content may not change much across these categories.[11] At the same time also the aggregate intensity of COG tasks has increased over time, and has in particular risen throughout recessionary periods.

Finally, the first part of the sample contains one of the recessions but also an overall larger (trend) presence of higher unemployment rates. We want to be careful not to conflate noncyclical patterns occurring at that time with business cycle patterns. This is especially relevant since Canada has instituted an unemployment benefit reform around 1996. To address this, we e.g. include a pre-1997 dummy in our regression analysis below and look at deviations from a linear trend. However, more importantly and substantially, we redo our analysis for the time window from 1997-2015 – at the cost of losing one of the two full-fledged recessions in our data. Nevertheless, a number of interesting patterns show up both in the overall 1987-2015 window and in the more limited 1997-2015 window. Below, we mainly emphasize patterns that satisfy this condition.

3 Occupational Switches of Job Changers over the Business Cycle

Before looking at the implied task flows of occupational changes, we consider the simple (binary) incidence of *two-digit* occupational changes separately for the two types of employer transitions, EE and EUE. To save on

[10]Our local deviation variable is local minus aggregate. Economic Region is a Census geographic division used to define local labor markets for the purposes of locally adjusting employment insurance benefits. The LFS sample includes 73 of the ERs providing a considerable amount of cross-sectional variation in labor market conditions.

[11]However, the resource industry may also play a role here, with its importance in low-skill employment in Canada, which e.g. mitigated the 2008 recession. Canada's manufacturing industries overall enjoyed growth through the 1990s and early 2000s, unlike most OECD countries (Bernard 2009), finally experiencing declines from 2004 onward.

verbiage, we will reserve the term ‘career changes’ to refer to these ‘double’ changes of firm and occupation. The implied binary metric of career changes, without notion of task distance beyond a non-return to the previous occupation, also allows comparisons to similar measures studied over the business cycle of other countries (such as the US and the UK).

To study the career changes of workers undergoing employer transitions, we estimate a linear probability model of the binary *two-digit* occupational switch indicator ($SW2D_{it}$), for both EE and EUE movers.

$$Pr(SW2D_{it}) = \alpha + \gamma UR_t + \delta(UR_t - UR_{\ell t}) + X_{it}'\beta + Z_{it-1}'\theta\epsilon_{it} \tag{2}$$

The business cycle is captured by the variables UR_t and $(UR_{\ell t} - UR_t)$, representing the aggregate unemployment rate and the local deviation from the national unemployment rate, respectively.[12] The vector X contains job and personal characteristics including age, an indicator for married/common law status, Educational attainment indicators LHS, HS, OPS and PS. Finally, the vector Z contains lagged indicators for 1-digit occupation groupings of the prior job. These covariates help to account for the possibility that the prior job influenced the baseline (non-cyclical) level of the worker’s propensity to switch occupation.

Estimates of the propensity to change careers among workers undergoing EE transitions are presented in Table 8. The first column reports to overall relation between occupational switching and the cycle: in general downturns and in regional recessions, EE changes are less often accompanied by an occupational switch. The magnitude of γ suggests that the likelihood of EE employer changers also changing careers at the 2-digit occupation level increases by about 0.7 percentage point for each percentage point increase in the aggregate unemployment rate. Conditional on this change, similar increases in the local unemployment rate over and above the national rate appears to have up to an additional half a percentage point increase in this propensity.

The LHS microdata allows us to control for the role of workers’ characteristics in the workers’ average occupation mobility propensity. Older and married workers are less likely to switch careers, as are those with post-secondary education who may have more specific human capital when compared to those with LHS education. Perhaps because some education increases the likelihood of moving up the ladder, HS and OPS graduates are somewhat more likely to undergo a career change, conditional on moving employer. Including worker characteristics in the regression dampens the cyclicality of occupational switching of EE movers somewhat, in columns (2) and (3), but it remains significantly procyclical. In column (4) we consider the interaction of age

[12]Local unemployment rates are measured at the Economic Region, ℓ, level.

with the unemployment rate, and find that older workers changing employers directly experience more strong procyclicality of occupational switching.

These estimates are based on 2-digit NOC code changes, which require significant changes in the nature of occupations. These switches capture workers making the most significant change - a 1-digit (major occupation category change). They also capture movement at the 2-digit level, but within 1-digit occupations. These changes still represent a significant change in the skill requirement of an occupation. For example, within major occupation grouping 6 (sales and service), workers switching from occupation group 64 to occupation group 62 would move from "intermediate" to "skilled" occupations in the sales and service industry. As a robustness check, Appendix Table 15 presents equivalent estimates using 4-digit occupation changes instead. These changes are more prevalent and may include more conservative occupational changes. Propensities to change careers at the 4-digit level are also pro-cyclical, even slightly more-so in some specifications.

A similar model, is estimated separately for EUE transitions. Workers undergoing transitions of this type might be expected to have a different propensity to change careers because incentives for job search differ when a worker is unemployed. Table 9 presents the EUE 2-digit career change propensity estimates. Coefficient estimates tell a similar story to the EE transition estimates - during a recession, both locally and at the national level, workers are more conservative in their propensity to switch occupation. Coefficient estimates for unemployment rates, however, are larger in magnitude than they were for EE switchers, suggesting a stronger pro-cyclical pattern among EUE movers. This is sensible if EE movers are higher ability workers that are able to capitalize on the business cycle to move up the ladder and take advantage of the "cleansing" effect of recessions by replacing poorly matched workers, while EUE workers enjoy no such opportunities. Appendix Table 16 repeats the analysis using 4-digit EUE transitions. The cyclicality is strong, with coefficient estimates suggesting that every percentage point increase in the unemployment rate increases the career change propensity by 2 percentage points.

These results suggest that the findings of Carrillo-Tudela et al. (2014, 2015) for the US and Carrillo-Tudela et al. (2016) for the UK also hold true in Canadian data. Workers who switch employers are more conservative about their career changes during recessions than during booms, at least in terms of the extensive margin. However, whether the magnitude of these changes is also procyclical is an open question, which we attempt to answer in the sections that follow.

4 Task Distances over the Cycle

This section examines tasks and measures of occupational task distance. Throughout the section we use the measure of task distance from equation (1). This measure is agnostic about the direction of change and instead captures only the dissimilarity of occupations across career changes. It is positive for all career changes and zero for all workers who change employers but do not change occupation.

Table 7 provides summary statistics for all four task measures used to evaluate the nature of career changes: task intensity measures in the new job, overall task distances and the change in intensity of the three individual tasks. Task intensity measures in the first three columns suggest that the jobs following a career change are characterized by lower intensities of Tasks 1 and 2 but higher intensities of Task 3, for EUE workers relative to EE workers.Both EE and EUE movers tend to undertake career changes that are of similar magnitude in terms of overall (total) task distance. Thus, without any consideration of the business cycle one could expect that on average there is a similar extent of human capital destruction from both type of career changes. Standard deviations (in parentheses) suggest that EUE changes are more heterogeneous and thus may be difficult to represent with the simple distance measure. Perhaps unsurprisingly, then, the story is different when broken down by individual task distance. EE career changers appear to be characterized by movements to more of Task 1 and 2, and to some degree a small increase in task 3. By contrast, EUE workers appear to be moving to occupations that have a lower intensity in Task 1 and very little difference in task 2 and 3. These results broadly suggest that EE movers go to jobs with higher skill requirements and EUE movers go to jobs where their skills are less utilized.

4.1 Regression Analysis

To disentangle the effects of the business cycle on career change propensities we exploit the microdata at our disposal. First, we estimate the baseline regression model outlined in equation (3) below on the sample of workers undergoing EE job transitions. These workers exhibited relatively less volatility in the aggregate unconditional time series.

$$Distance_{it} = \alpha + \gamma UR_t + \delta(UR_{\ell t} - UR_t) + X'_{it}\beta + Z'_{it-1}\theta + J'_{it}\Omega + \tau_t + \mu_\ell + \xi D_t + \epsilon_{it} \qquad (3)$$

The dependent variable $Distance_{it}$ is the task distance of person i that changed occupation at the 4-digit level during their EE job transition in month (survey round) t. The business cycle is captured by the variables UR_t and $(UR_{\ell t} - UR_t)$, representing the aggregate unemployment rate and the local deviation from the national unemployment rate, respectively.[13] The vector X contains personal characteristics included in the regression model in equation (2). The vector Z contains lagged job characteristics including binary indicators for union coverage and the public sector, and monthly job tenure. These covariates help to account for the possibility that the prior job influenced the task distance in a subsequent career change. Finally, the vector J contains current job characteristics (including union and public sector). Economic region fixed effects μ_ℓ are included, as well as time controls τ_t comprised of (month-of-year) dummies and a linear time trend across the entire estimation period. Finally, a binary indicator D_t, equal to zero for December 1996 and equal to one thereafter, accounts for the potential discontinuity due to the LFS survey redesign. Standard errors are clustered at the economic-region (ℓ) level, to account for arbitrary serial correlation at the local level.

Estimates of this baseline specification are shown in column (2) of Table 10. Several of the covariates included appear to influence task distance among EE job changes. Age and Married/common law have a negative impact, suggesting that workers with more experience and with family responsibilities make transitions to more similar jobs. Longer job tenure on the prior job appears to decrease the distance of transitions, which is sensible if this reflects increased accumulation of job or occupation-specific human capital. Unionized workers, past and present, and workers presently in public sector jobs, make larger changes. This may reflect the increased opportunity for advancement in these workplaces which may be guaranteed with seniority. Finally, compared to workers without high school education, high-school graduates and those with “other" post-secondary education make larger transitions whereas traditional post-secondary graduates do not. Having more education may generally make workers more mobile across jobs. However, if university education leads to more general human capital, displaced workers with university education may not have to make career changes which are substantially different in terms of these broad job tasks.

The business cycle does not appear to have a significant effect on EE transitions, as was suggested in the aggregate series. Variations on these estimates are presented in adjacent columns, with marginal effects for the aggregate unemployment rate reported in the bottom row.[14] The marginal effect of aggregate unemployment on task distance among EE career changers are robustly positive, but statistically insignificant, across columns (2)-(8). The exception is Column (1), which presents a stripped-down specification. Conditional only on fixed

[13] Local unemployment rates are measured at the Economic Region, ℓ, level.

[14] Marginal effects calculated at mean values. Marginal effects not reported separately in specifications where UR_t enters linearly.

effects, the discontinuity dummy and time controls, aggregate unemployment correlates negatively. Further, in this specification there is evidence that economic regions with local unemployment rates exceeding the national average may experience reduced task distance. Column (3) includes a quartic specification in age, and column (4) interacts age with the aggregate unemployment rate. Neither of these affects the cyclicality overall, although task distance does appear to decrease with age, perhaps reflecting increasing amounts of occupation-specific human capital among more experienced workers.

Columns (5) and (6) include prior-job (lagged) 1-digit major occupation groupings, and indicators for whether or not the 4-digit occupation change was significant enough to also represent a change in major occupation category (1-digit change).[15] Finally, columns (7) and (8) interact the aggregate unemployment rate with education indicators and job tenure at the previous job

Career changes characterized by intervening unemployment spells may differ in important ways if time spent in unemployment affects the decision about what type of job to accept. Specification 4 mimics the analysis above for this second set of career changes, with some notable changes in available covariates.

$$Distance_{it} = \alpha + \gamma UR_t + \delta(UR_{\ell t} - UR_t) + X'_{it}\beta + W'_{it-1}\theta + J'_{it}\Omega + \tau_t + \mu_\ell + \xi D_t + \epsilon_{it} \tag{4}$$

Most notably, prior-job characteristics are replaced with a vector or job search characteristics W, including indicators for voluntary and involuntary job separation and unemployment duration measured in weeks.

Task distance appears to be procyclical among EUE career changers. Across several specifications in Table 11 the parameter γ is negative and statistically significant. Furthermore, the effect of local deviation δ is negative and significant across several specifications. Conditional on UR_t, a negative value for this parameter suggests that as local unemployment rates fall(rise), task distance will increase(decrease). It is important to note that these results are conditional on the discontinuity control D, meaning that the large change observed in 1997 is not alone responsible for the results.

Other covariates are also of interest. Results suggest that longer unemployment duration leads to larger task distance. This finding suggests that workers are likely to make more stark career changes the longer they are required to search. The fact that all levels of education increase the magnitude of task distance suggests that education may open the necessary doors for unemployed workers to escape unemployment through significant

[15] Similar results were found using a 2-digit major group change. We also tested interactions of 1-digit major occupation group with the aggregate unemployment rate.

career changes.

4.1.1 Excluding Occupational Stayers

The specifications above include all EE and EUE movers, regardless of whether they also change career. This means that our measure $Distance_{it}$ contains zeros for those who move laterally on the career ladder, changing employer (EE) but staying in the same occupation. Since a considerable number of both EE and EUE switchers are not career changers, up to 41% as measured by changes in 2-Digit occupation, including these observations may mask task distance moves by adding a large quantity of zeros.

Restricting the analysis to career movers, that is excluding EE movers with zero distance, we find that task distance is robustly countercyclical. Table 17 repeats the analysis above. The marginal effect of the aggregate unemployment rate is positive and statistically significant across all specifications. This results suggests that, among EE movers who *do* change careers, recessions lead to occupations which are substantially different. The implication of these findings is that while recessions decrease career changes on the extensive margin, they may increase them on the intensive margin. Thus task distance measures provide an important addition to the characterization of career changes over the business cycle.

Results for EUE are also more procyclical when excluding zeros. Whereas a conditional task distances are robustly procyclical among all EUE movers, they appear to be weakly procyclical among EUE career changers. Results are provided in Table 18

5 Cyclicality of Task Mobility along Different Dimensions

The task distance measure represented by equation (1) captures the overall distance between occupations. However, it may also be important to understand the separate task changes that underpin a career change. This is especially true in light of Figure 1, which suggests very different time trends in the three main tasks.

Separate task distances are measured as outlined in equation (5).

$$Distance_j = (T_{j,it} - T_{j,it-1}) \tag{5}$$

One advantage of analyzing individual task distances is that the direction of distance movements by individual workers are meaningful. Since the task measures themselves are orthogonal, $Distance_j$ can be interpreted as the movement along the axis in 3-dimensional task-space. Negative distances for task j measured by equation (5) will reflect movement of person i, from period $t-1$ to period t, to an occupation with a lower usage of task j. Positive distances will reflect movement to an occupation with a higher usage of task j.

It is important to note that these task measures are orthogonal. As a result, career changes associated with a movement across one task dimension need not move at with respect to the other tasks. Furthermore, it is entirely possible for a worker to move from an occupation with high values for all three tasks (such as an airline pilot or a physician) to an occupation with low values across all three tasks (such as a roofer or general laborer). Moves of this nature would be characterized by the highest possible values of the overall distance measure in the previous section.

5.1 Changes in cognitive intensity

Tables and 13 present estimates of individual task distances for EE and EUE movers, respectively. The first striking result pertaining to individual task distances is how they differ between workers undergoing these two types of transitions. In columns (1)-(3) of table , recessions are shown to increase the likelihood that career changes are characterized by increases in Task 1 intensity. This result suggests that EE moves during recessions lead workers to occupations with a higher cognitive component, suggesting they may be moving up the career ladder while exploiting the “cleansing" effects of recessions. By contrast, corresponding columns of Table show that EUE movers experience quite the opposite result. Where transitions involve an intervening unemployment spell, the transition is more likely to involve a move to a job that is characterized by less cognitive task-intensity and thereby likely lower pay. This may reveal that workers experiencing unemployment during their transition may choose to “settle" during a recession when labour market frictions are not in their favor and competition for available jobs is fierce. This intuition is reinforced by the negative coefficient on unemployment duration in column (3). Education indicator estimates further reinforce the important distinction between EE and EUE transitions. Compared to workers with LHS education, workers with more education are more likely to move to jobs with higher cognitive tasks when undertaking an EE transition and less likely to do so when experiencing an EUE transition. Common findings across the two tables include positive effects of transition into public sector positions on Task1 and positive effects of the 1-digit occupational indicators. These latter estimates suggest that, compared to the omitted group (who are leaving occupations Unique to Processing, Manufacturing and

Utilities), workers in all other groups move to jobs with more cognitive task intensity across both EE and EUE transitions. Since these estimates are conditional on an indicator for switching 1-digit major occupation groups (SW 1D), these coefficients reflect movements up the occupational ladder within-major category.

5.2 Changes in higher-level physical intensity

Results for Task2, which describes higher-level physical job tasks are similar but stronger to those for Task1. In columns (4)-(6) of Tables and 13, it can be seen that Task2 is procyclical for EE movers and countercyclical for EUE movers. However, some differences in covariates are worth mentioning. First, educational attainment does not appear to play a role in Task2 movements among either group. This suggests that Task2 may have somewhat less of a correspondence with occupational prestige and/or the accumulation of general human capital. Among EUE workers in Table 13, voluntary separations appear positively associated with increased Task2 among movers. This may highlight the fact that some workers with specific human capital, which might be more associated with jobs requiring particular physical skills or abilities, may be willing to wait in unemployment in order to obtain jobs that are a better match.

5.3 Changes in lower-level physical intensity (brawn)

Estimates of movement in lower-level physical tasks, captured by Task3, are presented Columns (7)-(9) of both tables. Male and workers previously unionized appear most likely to move into jobs with more Task3 and workers with post-secondary education, least likely to do so. Among EE movers, these tasks appear to be unaffected by the business cycle. This acyclicality of tasks may suggest reflect cyclical churning within lower-skill jobs, with workers perhaps intentionally moving to similar jobs in higher paying industries or stepping sideways into similar jobs with different employers in order to avoid job-loss during a recession.[16] However, Task3 is countercyclical among EUE movers. Workers who wait in unemployment for during a recession are more likely to move to these lower-skill jobs than they would be during a boom period. The positive and significant effect of the interaction term between the1-Digit major occupation group switch indicator and the aggregate unemployment rate in column (9) suggests that these workers, who are likely forced to downgrade, are making significant changes. Prior occupation indicators in column (8) suggest that these workers are more likely to come from higher-prestige occupations in management, business and finance, and less likely to come

[16] Some EE movers may effectively be EUE movers who are able to pre-empt being laid off, and or who transition so quickly as to avoid being surveyed while unemployed.

from lower ranked occupations in primary industry, sales, service and the trades. The coefficient δ is robustly positive for Task3 among EUE movers, suggesting that local unemployment rates also matter. Conditional on aggregate unemployment, higher local unemployment leads to moves into occupations with higher Task3 intensity.

5.4 Discussion

The picture painted by these results is important for policymakers interested in fully characterizing the cyclicality of career changes. Recessions have different effects on workers that appear to move voluntarily (or at least quickly) between jobs (EE movers) and those who wait for some time in unemployment (EUE movers). The cycle moves these groups to different types of jobs: EE transitions appear to help workers climb the career ladder while EUE transitions move workers down. Thus, recessions have both cleansing and sullying effects on workers' careers, depending on the worker's particular transition.

One limitation of the findings is the possibility of selection into the type of transition group. Since EE workers are identified as those who do not report unemployment spells in the survey, it is possible that some EE workers might be characterized by very short periods of unemployment that go unreported in the survey (or are effectively zero, even if the job change is involuntary). A subset of these “involuntary/short" EE moves, among the less-able workers, might get pushed into the EUE group during recessions when labour market frictions increase the difficulty of finding work.

6 Within-Employer Task Changes over the Cycle

Thus far the analysis has been confined to workers that change employer through EE or EUE transitions. However, it may also be important to understand the mobility of workers within employer (WE) over the cycle. Occupation and task changes within employer amount to promotions and/or demotions. Workers may undergo this type of transition for quite different reasons when compared to career changes that involve a switch of employer. One might expect, for example, that this type of occupational change is dominated by workers moving to positions that involve the supervision of those colleagues the mobile worker previously worked alongside of (i.e. these promoted workers now supervise the execution of the tasks they previously performed). To the extent that this type of transition dominates, it is not immediately clear whether a WE changes involve the same potential destruction of human capital as other career changes.

Whereas recessions appeared to dampen task distance among EUE, and to some degree EE, career changers the opposite is true for WE switchers. We estimate the overall occupational distance measure for 3-digit WE switchers and present the results in Table 14. Across all four specifications, there is a robust and positive effect of aggregate unemployment on WE task distance, suggesting that the WE changes that take place involve a greater difference in tasks than WE changes during recessions.

There are two potential interpretations for this result. During recessions, the incomplete information in the labour market may become exacerbated by the large pool of unemployed. As described in Moscarini and Vella (2008), matching might be more noisy during a recession. This possibility may render employers less willing to take a chance on new workers and instead they may be more inclined to fill vacant positions through promotion even when there is a significant difference in tasks. Recessions may also be periods when employers 'clean house', shedding less productive workers at every level and re-positioning their most productive workers within the firm. WE switchers are a selected group and those workers may be able to capitalize on vacancies created as firms restructure. This may be particularly true for unionized work environments where employers have less flexibility with respect to the workforce.

A second interpretation is that good times are when workers are least likely to face a demotion in tasks. Promotions might involve similar tasks if they arise as workers demonstrate their skill in that particular line of work activities but demotions might involve a change of work activities following a lack of success. If Demotions are concentrated in recessions, this intuition could explain the countercyclicality of WE task distance. This explanation fits with the finding of Devereux (2000) that employers reallocate workers to lower-level tasks in economic downturns.

7 Cyclical Reallocation of Tasks over the Cycle

In this section, we study how the distribution of tasks of jobs left by job changers (with and without intervening unemployment spell) differs from the distribution of tasks in these job changers' new employment, and how this varies over the cycle. TO BE ADDED.

8 Conclusion

This paper documents the effects of the business cycle on career changes, separately for EE and EUE transitions. In doing so we find important differences in the nature of these transitions that go unnoticed when examining raw transition propensities in the data.

We also offer results that potentially reconcile the cleansing/sullying debate regarding recessions. Our findings suggest that both occur simultaneously, but manifest through EE and EUE transitions, respectively. Although EE transitions are less cyclical overall, our analysis reveals that job to job movements during the business cycle are often (and on average) upgrades along the cognitive task dimension. To the extent that this dimension employs skills of higher value, these moves can be expected to improve the lot of workers undertaking a career change. Transitions with intervening unemployment spells (EUE) are more clearly procyclical, but are markedly less favorable. Recessions move workers in these transition patterns to jobs that are less cognitive intensive and utilize more low-level skills like physical strength. Taken together, these findings suggest that the business cycle pulls the task content of EE and EUE transitions apart.

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A Appendix

A.1 Data and Task Measurement

A.1.1 Data Source

The LFS is a nationally representative survey of the Canadian labor market, akin to the Current Population Survey (CPS) for the US. Surveys are administered monthly at the household level, with households rotating in and out of the sample every 6 months. This paper employs the confidential version of the LFS, available to researchers through Statistics Canada Research Data Centres. This has several advantages over public-use data, it allows linking persons longitudinally (required for studying transitions) and includes considerably more detail on worker and job characteristics.

A.1.2 Workers' Employer Transitions

Our sample contains 90,463 observations of EE and EUE transitions. EE changes are defined as those who report a new employer (or one month or less of job tenure) in the current month. Following Kambourov and Manovskii (2009); Carrillo-Tudela et al. (2016) we further restrict EE transitions to those who go on to hold the current job for at least 2 months.[17]

The second type of transition, EUE, involves workers switching employer with an intervening unemployment spell. The LFS has two ways of identifying the occupational switches of these workers. Some workers report employment at the beginning and end of their 6 month sampling window, with a spell of unemployment in between. For these workers, identifying 4-digit occupational job mobility is done straightforwardly by comparing the occupations of the job in sample before and after the unemployment spell. Additionally, for workers who enter the sample as unemployed, typically the information for the most recently held job is reported.[18]

Summary statistics describing the employer transitions in our sample are presented in Panel A of Table 3. About 48% of the transitions in our sample are EE transitions whereas 52% were EUE transitions. Importantly, not all employer transitions are career changes, where we define the latter as employer switches that also

[17]This further restriction avoids counting workers who (for example) work on a project basis, frequently changing location or firm, and keeps the focus on those who have a more standard relationship with an employer. Also helps with measurement error by eliminating potential "false" switchers (change and then change back and/or a miscode

[18]The NOC codes of an unemployed worker represents the most recent job held, within the last 13 months. It may be possible to be recorded as unemployed in Canada for more than 12 months if a person is actively engaged in job search for the entirety of this period, although this is not common in the data. Unfortunately this information is not available for workers who are inactive or out of the labor force and so transitions from inactive to employed cannot be reliably observed.

Table 3: Summary Statistics for Estimation Sample

Panel A	**Mean**	**SE**
EE transition	0.483	0.003
SW OCC 1-D	0.432	0.002
SW OCC 2-D	0.589	0.002
SW OCC 3-D	0.669	0.002
SW OCC 4-D	0.698	0.002
Panel B		
Age	33.404	0.068
Male	0.573	0.002
Married/C.law	0.571	0.003
LHS	0.121	0.002
HS	0.309	0.002
OPS	0.112	0.001
PS	0.458	0.002
Union	0.167	0.002
Pub. Sector	0.114	0.001
Panel C		
Unemp. Rate	7.347	0.005

Source: LFS data 1987-2015, workers aged 16-65 reporting an EE or EUE employer transition in the survey month. Excludes students, temporary job holders and LFS records with imputed information. Occupation categories according to 2006 NOC codes. Mean estimates employ population weights from the LFS data. $N = 90463$.

involve an occupational switch. Indicators for 1-4 digit occupation changes show the prevalence of career changes measured with differing levels of specificity. About 43% of employer transitions are also 1-digit career changes.[19] These career changes are significant, representing a move in major occupation category. For example, a worker might move from an occupation in primary industry or manufacturing to an occupation in services. At higher levels of occupational specificity the number of career changes increase, reaching about 70% at the 4-digit level, where an individual would move to a much more similar occupation (for example, from Cook to Chef). Table 4 shows the distribution across 2-digit occupations in the data.

A.1.3 Factor Analysis of Career Handbook Occupational Task Mapping

We re-scale all 23 measures to be ascending from a lowest value of 0 to a maximum of 1. The exception is education, which we re-code as approximate years of education.[20] Second, we measure the number of workers

[19] This number is well in line with 1-digit occupational changes in US data that is corrected for occupational miscoding (see Carrillo-Tudela and Visschers (2018)).

[20] Years of education are informed from Statistics Canada encoding categories used in the SLID data, which have more detail than the LFS. We encode this variable as follows: 0 if "The occupation does not require formal education or training"; 10 if "Some high school education is required, or on-the-job training or previous related experience alone is adequate", or if "Some high school education

Table 4: Occupation Distribution by 2-Digit NOC 2006 Code

Code	Occupation Title	Mean	SE
00	Senior Management	0.001	0.000
01	Middle and Other Management (professional)	0.010	0.000
06	Middle and other Management (services)	0.012	0.000
07	Middle and other Management (trades and manufacturing)	0.004	0.000
11	Professionals: Business and Finance	0.016	0.000
12	Skilled Admin & Business	0.030	0.001
14	Clerical	0.093	0.001
21	Professionals: Natural &App. Sciences	0.019	0.001
22	Technicians: Natural &App. Sciences	0.024	0.001
31	Professionals: Health	0.009	0.000
32	Technicians: Health	0.007	0.000
34	Assistants: Health	0.011	0.000
41	Professionals: Soc. Sci, Educ, Gov & Religion	0.026	0.001
42	Paraprofessionals: Law, Soc. Services, Educ & Religion	0.017	0.000
51	Professionals: Art & culture	0.004	0.000
52	Technicians: Art, Culture, Rec. & Sport	0.017	0.000
62	Skilled Sales and Service	0.052	0.001
64	Intermediate Sales and Service	0.121	0.001
66	Elemental Sales and Service	0.126	0.001
72	Trades & Transportation Operation Supervisors	0.088	0.001
73	Transportation & Equipment Operators	0.029	0.001
74	Intermediate Transport, Equipment operation and maintenance	0.092	0.001
76	Trades Helpers	0.043	0.001
82	Skilled Primary Industry	0.013	0.000
84	Intermediate Primary Industry	0.033	0.001
86	Labourers in Primary Industry	0.027	0.001
92	Supervisors & Skilled Operators : Manufacturing & utilities	0.003	0.000
94	Processing & Manufacturing Operators / Assemblers	0.036	0.001
95	Machinists, metalworking and woodworking	0.006	0.000
96	Labourers in Manufacturing & Utilities	0.028	0.001

Source: LFS data 1987-2015, workers aged 16-65 reporting an EE or EUE employer transition in the survey month. Excludes students, temporary job holders and LFS records with imputed information. Occupation categories according to 2006 NOC codes. Mean estimates employ population weights from the LFS data. $N = 90463$.

in each 4-digit occupation in the LFS data to use as weights in the factor analysis procedure.

Factor analysis is used to identify the common sources of variation, in descending order such that the principal factor explains the most variation and the last factor explains the least. Factor analysis estimates a model that explains each of the $p = \{1, \ldots, 23\}$ CH elements as a linear combination of $j = \{1, \ldots, K\}$ common factors T_j, weighted by a matrix of factor loadings Λ:

$$CH = \Lambda T + e. \tag{6}$$

The factor analysis model differs from Principal Components Analysis (PCA) because of the term e, which captures variation that is unique to each underlying CH element.[21] Our estimation of this model returns 13 orthogonal factors, decreasing in order of their importance in explaining the common variation across the observable CH characteristics.We identify and retain only those factors that are significant, which is determined following Cattell (1966) and others by selecting factors with eigenvalues greater than one. In the CH data we find that 3 factors are significant.

Factor analysis estimates both T and Λ from the covariance of the matrix CH and thus can produce an infinite set of solutions, none of which is preferable to any of the others on a statistical basis. However, different arrangements of the model may produce factors that are easier to interpret if the original elements CH each load more heavily on to a single task from the vector T. To facilitate interpretation of factors, we rotate the factor matrix orthogonally using the varimax rotation, which maximizes the variance of the squared loadings of each of the original 23 CH elements onto the resulting three task measures. This procedure produces task measures so that each CH element loads heavily onto a single factor. As a result, the factors/tasks are more likely have a rough interpretation based on the collection of original CH measures that are strong contributors. Table 1 presents the this factor loading matrix. Task 1 (COG) appears to measure cognitive tasks, correlating heavily (and positively) with education, complex use of data, and cognitive type aptitudes such as general or verbal ability. Task 2 (H-PHYS) appears to capture high-level physical type tasks, correlating positively with aptitudes

may also be combined with on-the-job training or previous experience related to the occupation"; 12 if "The completion of high school is required"; 13 if "The completion of course work, training, workshops and/or experience related to the occupation, usually on completion of high school, is required. Course work refers to courses taken at special training institutes, colleges, universities and/or other training venues, but does not include the completion of a program." or "Vocational schooling: 2-5 years with 8 weeks per year"; 14 if "Completion of a program at a college or technical school is required. A program could lead to a certificate or a diploma"; 16 if "Completion of a university degree at the bachelor's level is required"; and 18 if "Completion of a university degree at the master's or doctoral level is required. Professional degrees that require additional education beyond the bachelor's level, such as law, dentistry, pharmacy and veterinary medicine, are also included".

[21] Thus, whereas PCA retains all variation when generating the resulting tasks (factors), factor analysis retains only common variation.

Table 5: Factor Analysis Results

Factor	Share Explained (ρ)	Interpretation
Task1	0.361	Cognitive
Task2	0.216	H-level Physical
Task3	0.147	L-level Physical

Factor analysis output with varimax rotation. Three principal factors retained. Canadian occupational distribution used as weights.

Table 6: Task Intensity by 1-Digit Occupation

NOC Code	1-Digit Occupation Group	Task1 Mean	Task2 Mean	Task3 Mean
0	Management	1.194	-0.859	-0.230
1	Bus/Finance/Admin	-0.065	0.097	-0.861
2	Nat & App. Science	0.893	0.490	-0.432
3	Health	0.327	0.506	0.482
4	Soc.Sci/Educ/Gov/Relig	1.061	-0.770	-0.121
5	Art, Cult, Rec & Sport	0.778	0.847	-0.153
6	Sales & Service	-0.642	-0.427	-0.009
7	Trades, trans. & Operatives	-0.526	0.516	0.504
8	Primary Industry	-0.818	0.167	0.653
9	Processing, Mfg, Utilities	-1.039	-0.042	0.373
Total		-0.123	-0.028	-0.039

Source: 2006 Career Handbook. Occupation categories according to 2006 NOC codes. Mean task values by 1-digit occupation. Task values specific to 4-digit NOC occupation codes. Tasks created from career handbook occupational ratings using population weights from the LFS data.

like perception and motor-coordination while having a weak negative relationship with educational attainment. Task 3 (L-PHYS) seems to measure lower-level physical tasks, correlating with measures of environmental hazards and physical strength.

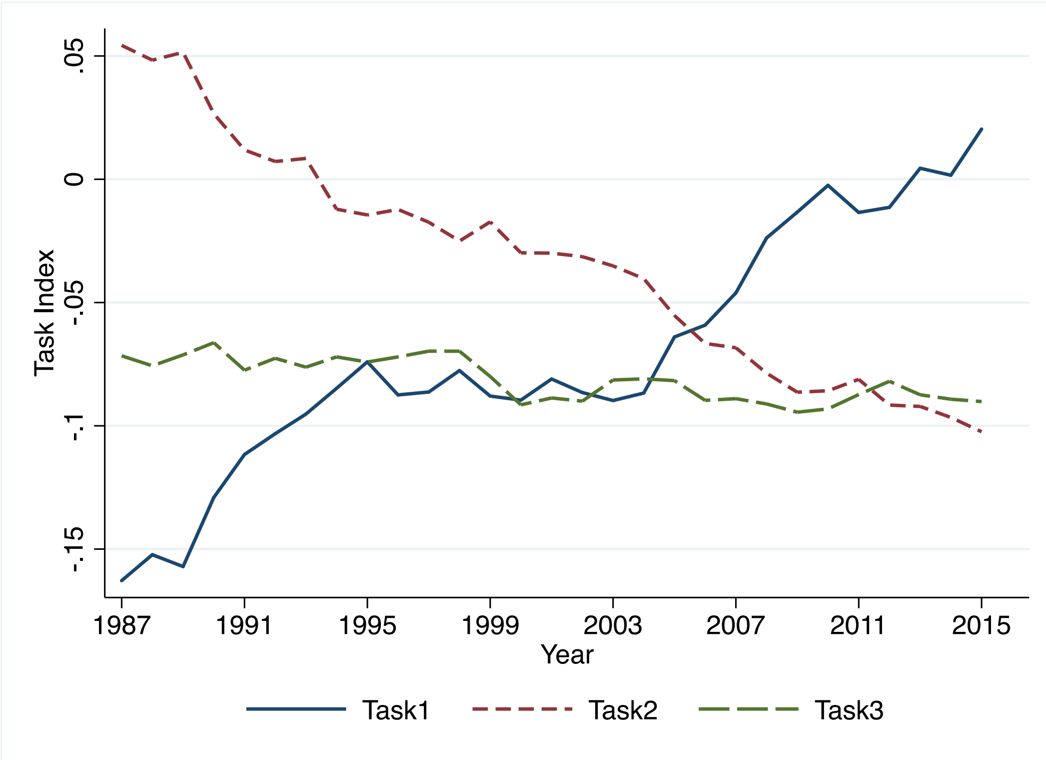
Table 5 presents the results of the factor analysis procedure, including the “importance" or overall share of variation explained by each of the three tasks. [22] Table 6 presents the task intensity by 1-digit Major Occupational Groups, while Table 2 in the main text does so for 2-digit occupations.

A.2 Tasks across labour market transitions and over time

Figure 1 displays the evolution of tasks over time, while Table reports the average and the variance of tasks changes.

[22] Factor analysis, unlike PCA, generates a measure of uniqueness - the proportion of variance not explained by common factors that is unique to an original CH element. CH inputs with high uniqueness are not well-described by the resulting factors. In our analysis, only three have uniqueness greater than 0.5: Physical activities Hearing and Color discrimination and Environmental Condition Discomforts with values of 0.54, 0.67 and 0.51, respectively.

Figure 1: Trends in Occupational Tasks



Source: LFS 1987-2015 and 2006 CH. Annualized series. Tasks 1-3 represent cognitive, high-level physical and low-level physical work activities, respectively. Tasks are principal factors from the CH data weighted to match the Canadian occupational distribution over the period of analysis.

Table 7: Average Task Intensities and Distance by Career Change Type

Panel A: EE Transitions 1987-2015

	Intensity in new Job			Total Task	Change in Intensity		
	Task 1	Task 2	Task 3	Distance	Task 1	Task 2	Task 3
Mean	-0.364	-0.0076	-0.0007	0.600	0.0209	0.0376	0.0129
SD	(0.914)	(0.860)	(0.908)	(0.320)	(1.268)	(1.148)	(1.039)
N	48458	48458	48458	47962	47962	47962	47962

Panel B: EUE Transitions 1987-2015

	Intensity in new Job			Total Task	Change in Intensity		
	Task 1	Task 2	Task 3	Distance	Task 1	Task 2	Task 3
Mean	-0.459	-0.091	0.053	0.607	-0.0843	-0.0008	0.0002
SD	(0.863)	(0.837)	(0.907)	(0.320)	(1.030)	(1.156)	(1.075)
N	45401	45401	45401	45,066	45,066	45,066	45,066

Source: LFS and CH annual averaged data 1987-2015. Standard deviations in parentheses

A.3 Worker and Job Characteristics in the Sample

The Canadian LFS provides a set of worker and job characteristics that allows us to examine how task mobility vary with observable traits. These also help to control for the impact of potential composition shifts in workers by observable characteristics over the cycle. Educational attainment indicators are generated for four groups, including Less than High School (LHS), High-School graduates (HS), Other Post-Secondary (OPS) graduates, with a certificate or diploma less than 2 years, and traditional Post-Secondary graduates (PS) including community college diplomas 2 years or longer and university education. Age, sex and an indicator for married/common-law are also used.

We also generate variables that describe the job characteristics of employed individuals, including binary indicators union coverage and public sector employment and job tenure, which is measured as months with the same employer.[23]

Summary worker characteristics for the sample are presented in Panel B of Table 3 above. The sample includes more men (57%) than women, which is reasonable given the fact that our sample is restricted to labor force participants. Of the respondents, the average age is 33 years and about 57% are married or in common-law relationships. The most common education level is traditional post-secondary, representing 46% of the sample. An additional 11% of respondents report some post-secondary certificate or diploma below university, for 31% of the sample high school is the highest education milestone achieved and 12% of respondents in the sample did not complete high school. About 17% of the workers in the sample are covered by collective bargaining agreements or union members, and 11% work in public sector jobs.

For unemployed workers, we have information on the duration of unemployment and the reason of job separation. Constrained by the relatively coarser information available before the mid 2000s, we summarize job leavers into three broad categories: voluntary leavers, involuntary leavers and “other".[24] The duration of unemployment, measured weekly, is also available for those classified as unemployed.

[23]Union coverage includes union membership and non-members covered by collective agreements. Overlap between public sector and collective agreement coverage is considerable in Canada.

[24]Reasons for leaving are encoded are as follows. Voluntary: “Left job" due to change of residence, dissatisfaction or retirement. Involuntary: “Lost job" due to layoff, own illness or disability. Other: “Left job" due to personal or family responsibilities, to attend school or for “other" reasons.

B Additional Results

Table 8: Career Change Propensity Estimates, EE 2-Digit Occupation Movers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)
UR_t	-0.00719***	-0.00440**	-0.00428**	0.00431	-0.0102***	-0.0104***	-0.0167***
	(0.00173)	(0.00170)	(0.00169)	(0.00442)	(0.00170)	(0.00165)	(0.00443)
($UR_{\ell t}$-UR_t)	-0.00677***	-0.00597***	-0.00588***	-0.00594***	-0.00262***	-0.00274***	-0.00596***
	(0.00137)	(0.00139)	(0.00140)	(0.00139)	(0.000736)	(0.000741)	(0.00140)
Age		-0.00632***	-0.0674***	-0.00416***	-0.00227***	-0.00247***	-0.00631***
		(0.000156)	(0.0178)	(0.000960)	(0.000130)	(0.000138)	(0.000157)
Male		-0.000593	0.000160	-0.000574	-0.0236***	-0.0286***	-0.000591
		(0.00523)	(0.00516)	(0.00523)	(0.00276)	(0.00345)	(0.00521)
Married/C. Law		-0.0264***	-0.0194***	-0.0287***	-0.00641	-0.00960**	-0.0259***
		(0.00581)	(0.00609)	(0.00596)	(0.00449)	(0.00440)	(0.00574)
HS		0.0361***	0.0396***	0.0356***	0.0139**	0.0127**	-0.0456
		(0.00796)	(0.00779)	(0.00799)	(0.00560)	(0.00553)	(0.0465)
OPS		0.0517***	0.0567***	0.0511***	0.00277	-0.00167	-0.0409
		(0.00778)	(0.00821)	(0.00782)	(0.00627)	(0.00599)	(0.0462)
PS		-0.0108*	0.00656	-0.0112*	-0.00562	-0.0270***	-0.152***
		(0.00583)	(0.00608)	(0.00584)	(0.00575)	(0.00558)	(0.0413)
UR_t × Age				-0.000275**			
				(0.000124)			
SW 1D					0.615***	0.617***	
					(0.0120)	(0.0127)	
UR_t × SW 1D					0.0158***	0.0160***	
					(0.00158)	(0.00161)	
NOC 0_{t-1}					0.0168**		
					(0.00714)		
NOC 1_{t-1}					-0.0778***		
					(0.00597)		
NOC 2_{t-1}					-0.0912***		
					(0.00948)		
NOC 3_{t-1}					-0.0556***		
					(0.00673)		
NOC 4_{t-1}					-0.0638***		
					(0.00696)		
NOC 5_{t-1}					0.0410***		
					(0.00648)		
NOC 6_{t-1}					-0.00423		
					(0.00795)		
NOC 7_{t-1}					0.0102		
					(0.00806)		
NOC 8_{t-1}					0.0526***		
					(0.0108)		
UR_t × HS							0.00997*
							(0.00547)
UR_t × OPS							0.0113**
							(0.00546)
UR_t × PS							0.0175***
							(0.00502)
Age^2			0.00185**				
			(0.000714)				
Age^3			-2.27e-05*				
			(1.23e-05)				
Age^4			9.84e-08				
			(7.73e-08)				
Observations	72,891	72,891	72,891	72,891	72,091	72,891	72,891
R-squared	0.011	0.038	0.041	0.039	0.576	0.571	0.039
Marginal Effects				-0.00443**	-0.00361***	-0.00367***	-0.00407**
UR_t				(0.00170)	(0.00117)	(0.00111)	(0.00173)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is LHS educated female workers with NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. NOC 1-8 are binary indicators for 1-digit major occupation group of prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 9: Career Change Propensity Estimates, EUE 2-Digit Occupation Movers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)
UR_t	-0.0186***	-0.0163***	-0.0158***	0.00214	-0.0193***	-0.0195***	-0.0187***
	(0.00171)	(0.00168)	(0.00166)	(0.00625)	(0.00140)	(0.00147)	(0.00290)
$(UR_{\ell t}$-$UR_t)$	-0.00303**	-0.00297**	-0.00263*	-0.00289*	-0.000982	-0.00112	-0.00299**
	(0.00135)	(0.00146)	(0.00144)	(0.00147)	(0.000718)	(0.000700)	(0.00147)
Age		-0.00653***	-0.0534***	-0.00186	-0.00214***	-0.00237***	-0.00651***
		(0.000258)	(0.0148)	(0.00148)	(0.000173)	(0.000166)	(0.000260)
Male		0.00778	0.00800	0.00769	-0.0104***	-0.0149***	0.00767
		(0.00469)	(0.00495)	(0.00465)	(0.00288)	(0.00251)	(0.00469)
Married/C. Law		-0.00949*	-0.00408	-0.0164**	-0.00430	-0.00663	-0.00881
		(0.00534)	(0.00525)	(0.00643)	(0.00470)	(0.00476)	(0.00532)
HS		0.0325***	0.0372***	0.0308***	0.00761	0.00623	0.0411
		(0.00797)	(0.00768)	(0.00817)	(0.00600)	(0.00595)	(0.0444)
OPS		0.0457***	0.0505***	0.0438***	-0.00212	-0.00678	0.00849
		(0.00869)	(0.00832)	(0.00880)	(0.00537)	(0.00497)	(0.0403)
PS		0.0111	0.0276***	0.00913	-0.00453	-0.0223***	-0.0443
		(0.00824)	(0.00788)	(0.00870)	(0.00459)	(0.00401)	(0.0360)
$UR_t \times$ Age				-0.000553***			
				(0.000165)			
SW 1D					0.448***	0.435***	
					(0.0163)	(0.0174)	
$UR_t \times$ SW 1D					0.0407***	0.0418***	
					(0.00157)	(0.00169)	
NOC 0_{t-1}					-0.00108		
					(0.00536)		
NOC 1_{t-1}					-0.0492***		
					(0.00720)		
NOC 2_{t-1}					-0.0497***		
					(0.00559)		
NOC 3_{t-1}					-0.0655***		
					(0.00936)		
NOC 4_{t-1}					-0.0541***		
					(0.00788)		
NOC 5_{t-1}					0.0494***		
					(0.00658)		
NOC 6_{t-1}					0.00198		
					(0.00684)		
NOC 7_{t-1}					-0.0125		
					(0.00798)		
NOC 8_{t-1}					0.0137**		
					(0.00663)		
$UR_t \times$ HS							-0.00109
							(0.00446)
$UR_t \times$ OPS							0.00427
							(0.00457)
$UR_t \times$ PS							0.00641*
							(0.00359)
Age^2			0.00118*				
			(0.000620)				
Age^3			-9.73e-06				
			(1.11e-05)				
Age^4			9.71e-09				
			(7.18e-08)				
Observations	89,885	89,885	89,885	89,885	88,992	89,885	89,885
R-squared	0.095	0.121	0.124	0.122	0.643	0.640	0.122
Marginal Effects				-0.0160***	-0.00535***	-0.00519***	-0.0161***
UR_t				(0.00171)	(0.00100)	(0.00105)	(0.00169)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is LHS educated female workers with NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. NOC 1-8 are binary indicators for 1-digit major occupation group of prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 10: Task Distance Estimates, EE Movers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Distance	Distance	Distance	Distance	Distance	Distance	Distance	Distance
UR_t	-0.00196	0.00383	0.00335	0.0157**	-0.00116	-0.00164	-0.00227	0.00503
	(0.00253)	(0.00424)	(0.00422)	(0.00665)	(0.00344)	(0.00358)	(0.00772)	(0.00396)
$(UR_{\ell t}$-$UR_t)$	-0.00338***	-0.000104	-0.000103	-7.91e-05	0.000766	0.000912	-0.000104	-0.000101
	(0.000987)	(0.00157)	(0.00156)	(0.00157)	(0.00136)	(0.00139)	(0.00157)	(0.00157)
Age		-0.00399***	0.0243	-0.00135	-0.00202***	-0.00219***	-0.00399***	-0.00399***
		(0.000172)	(0.0188)	(0.00141)	(0.000152)	(0.000147)	(0.000173)	(0.000173)
Male		-0.0132	-0.0131	-0.0132	-0.0262***	-0.0290***	-0.0133	-0.0132
		(0.00826)	(0.00830)	(0.00824)	(0.00790)	(0.00772)	(0.00830)	(0.00826)
Married/C.law		-0.0149**	-0.00808	-0.0157***	-2.18e-06	-0.00383	-0.0149**	-0.0150***
		(0.00570)	(0.00647)	(0.00586)	(0.00616)	(0.00618)	(0.00578)	(0.00567)
$Union_t$		0.0216***	0.0209***	0.0215***	0.00805**	0.00838**	0.0216***	0.0216***
		(0.00350)	(0.00348)	(0.00350)	(0.00334)	(0.00346)	(0.00349)	(0.00351)
$Union_{t-1}$		0.0114***	0.0112***	0.0113***	0.00241	0.00136	0.0114***	0.0114***
		(0.00349)	(0.00349)	(0.00349)	(0.00312)	(0.00298)	(0.00348)	(0.00349)
Pub $Sector_t$		0.0566***	0.0564***	0.0565***	0.0314***	0.0251***	0.0565***	0.0566***
		(0.00935)	(0.00942)	(0.00935)	(0.00856)	(0.00746)	(0.00931)	(0.00935)
Pub $Sector_{t-1}$		0.00561	0.00531	0.00570	0.00495	-0.0103*	0.00570	0.00561
		(0.00686)	(0.00677)	(0.00685)	(0.00619)	(0.00571)	(0.00684)	(0.00685)
Job $Tenure_{t-1}$		-1.54e-07**	-0.000155**	-1.54e-07**	-1.53e-07***	-1.84e-07***	-1.54e-07**	1.13e-07
		(7.38e-08)	(7.51e-05)	(7.36e-08)	(5.42e-08)	(6.00e-08)	(7.42e-08)	(2.71e-07)
HS		0.0242**	0.0249**	0.0241**	0.00647	0.00996	-0.0552	0.0242**
		(0.00959)	(0.00950)	(0.00960)	(0.00887)	(0.00890)	(0.0603)	(0.00961)
OPS		0.0485***	0.0489***	0.0483***	0.0219**	0.0245**	0.0868	0.0485***
		(0.0107)	(0.0112)	(0.0108)	(0.00984)	(0.00933)	(0.0628)	(0.0107)
PS		-0.00241	0.00467	-0.00254	-0.00439	-0.00758	-0.0521	-0.00241
		(0.00801)	(0.00798)	(0.00802)	(0.00682)	(0.00672)	(0.0560)	(0.00802)
$UR_t \times$ Age				-0.000363*				
				(0.000195)				
SW 1D					0.321***	0.315***		
					(0.0235)	(0.0250)		
$UR_t \times$ SW 1D					0.00924***	0.00976***		
					(0.00318)	(0.00335)		
NOC 0_{t-1}					0.0878***			
					(0.00959)			
NOC 1_{t-1}					0.0889***			
					(0.0127)			
NOC 2_{t-1}					-0.00535			
					(0.0188)			
NOC 3_{t-1}					0.0162			
					(0.0126)			
NOC 4_{t-1}					0.173***			
					(0.0155)			
NOC 5_{t-1}					0.0981***			
					(0.00969)			
NOC 6_{t-1}					0.0753***			
					(0.0120)			
NOC 7_{t-1}					-0.0124			
					(0.0120)			
NOC 8_{t-1}					0.0995***			
					(0.0123)			
$UR_t \times$ HS							0.0109	
							(0.00816)	
$UR_t \times$ OPS							-0.00528	
							(0.00899)	
$UR_t \times$ PS							0.00684	
							(0.00788)	
$UR_t \times$ Job $Tenure_{t-1}$								-3.68e-08
								(3.78e-08)
Age^2			-0.00153**					
			(0.000737)					
Age^3			3.10e-05**					
			(1.23e-05)					
Age^4			-2.09e-07***					
			(7.44e-08)					
Observations	72,091	43,395	43,395	43,395	43,395	43,395	43,395	43,395
R-squared	0.009	0.036	0.037	0.036	0.292	0.282	0.036	0.036
Marginal Effects				0.00385	0.00277	0.00252	0.00390	0.00384
UR_t				(0.00426)	(0.00322)	(0.00329)	(0.00426)	(0.00423)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers with previous job also private-sector and non-unionized and in NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. NOC 1-8 are binary indicators for 1-digit major occupation group of prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 11: Task Distance Estimates, EUE Movers

	(1) Distance	(2) Distance	(3) Distance	(4) Distance	(5) Distance	(6) Distance	(7) Distance	(8) Distance
UR_t	-0.0135***	-0.00839**	-0.00936***	-0.00245	-0.0110***	-0.0119***	-0.0243***	-0.00714*
	(0.00114)	(0.00342)	(0.00348)	(0.00658)	(0.00343)	(0.00365)	(0.00823)	(0.00367)
($UR_{\ell t}$-UR_t)	-0.00188**	-0.00355***	-0.00294**	-0.00293**	-0.00222**	-0.00252**	-0.00296**	-0.00293**
	(0.000778)	(0.00130)	(0.00126)	(0.00125)	(0.00105)	(0.00104)	(0.00125)	(0.00125)
Age		-0.00307***	0.0568***	-0.00160	-0.00141***	-0.00159***	-0.00311***	-0.00311***
		(0.000353)	(0.0212)	(0.00154)	(0.000197)	(0.000208)	(0.000374)	(0.000366)
Male		-0.0248***	-0.0251***	-0.0248***	-0.0333***	-0.0413***	-0.0250***	-0.0249***
		(0.00504)	(0.00467)	(0.00466)	(0.00427)	(0.00354)	(0.00467)	(0.00466)
Married/C. law		0.00242	0.00274	0.00136	0.00137	0.000422	0.00275	0.00184
		(0.00736)	(0.00787)	(0.00783)	(0.00718)	(0.00712)	(0.00779)	(0.00774)
$Union_t$		0.0360***	0.0358***	0.0358***	0.0142**	0.0165**	0.0359***	0.0358***
		(0.00781)	(0.00789)	(0.00792)	(0.00601)	(0.00626)	(0.00792)	(0.00794)
Pub $Sector_t$		0.0427***	0.0481***	0.0484***	0.0194**	0.0204**	0.0482***	0.0483***
		(0.0107)	(0.0113)	(0.0113)	(0.00904)	(0.00839)	(0.0114)	(0.0113)
HS		0.0382***	0.0343***	0.0352***	0.0147*	0.0220***	-0.0772	0.0354***
		(0.00850)	(0.00908)	(0.00886)	(0.00767)	(0.00818)	(0.0749)	(0.00891)
OPS		0.0666***	0.0592***	0.0612***	0.0294***	0.0409***	0.0789	0.0613***
		(0.0101)	(0.0118)	(0.0114)	(0.00807)	(0.00878)	(0.0792)	(0.0115)
PS		0.0548***	0.0514***	0.0527***	0.0246***	0.0374***	-0.125**	0.0528***
		(0.00909)	(0.00980)	(0.00930)	(0.00820)	(0.00897)	(0.0610)	(0.00936)
Volunt. Sep_{t-1}		-0.0465***	-0.0507***	-0.0506***	-0.0268***	-0.0267***	-0.0502***	-0.0506***
		(0.0106)	(0.0105)	(0.0103)	(0.00806)	(0.00841)	(0.0104)	(0.0103)
Involunt. Sep_{t-1}		-0.0559***	-0.0596***	-0.0599***	-0.0359***	-0.0381***	-0.0594***	-0.0598***
		(0.0114)	(0.0114)	(0.0112)	(0.00942)	(0.00941)	(0.0113)	(0.0112)
Unemp. $Duration_{t-1}$			1.14e-06***	1.13e-06***	0.000589**	0.000592***	0.00113***	0.00274
			(2.70e-07)	(2.68e-07)	(0.000223)	(0.000218)	(0.000266)	(0.00190)
$UR_t \times$ Age				-0.000205				
				(0.000190)				
SW 1D					0.235***	0.228***		
					(0.0381)	(0.0404)		
$UR_t \times$ SW 1D					0.0178***	0.0181***		
					(0.00440)	(0.00474)		
NOC 0_{t-1}					0.0489***			
					(0.0130)			
NOC 1_{t-1}					0.110***			
					(0.0174)			
NOC 2_{t-1}					-0.0469**			
					(0.0203)			
NOC 3_{t-1}					-0.00152			
					(0.0179)			
NOC 4_{t-1}					0.178***			
					(0.0211)			
NOC 5_{t-1}					0.0486***			
					(0.0138)			
NOC 6_{t-1}					0.0206			
					(0.0158)			
NOC 7_{t-1}					-0.0697***			
					(0.0168)			
NOC 8_{t-1}					0.0168			
					(0.0147)			
$UR_t \times$ HS							0.0151	
							(0.0102)	
$UR_t \times$ OPS							-0.00259	
							(0.0112)	
$UR_t \times$ PS							0.0240***	
							(0.00807)	
$UR_t \times$ Unemp. $Dur._{t-1}$								-0.000216
								(0.000259)
Age^2			-0.00259***					
			(0.000891)					
Age^3			4.67e-05***					
			(1.58e-05)					
Age^4			-2.98e-07***					
			(1.01e-07)					
Observations	88,992	33,520	31,229	31,229	31,229	31,229	31,229	31,229
R-squared	0.076	0.038	0.036	0.035	0.270	0.259	0.036	0.035
Marginal Effect				-0.00924***	-0.00277	-0.00277	-0.00869**	-0.00922***
UR_t				(0.00347)	(0.00283)	(0.00283)	(0.00347)	(0.00345)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers with previous job in NOC occupation major group 9 (mainly low-skill labour jobs) who left their job for “other" reasons and whose new job is in the same 1-digit occupation grouping. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 12: Separate Task Distance Estimates, EE Movers

	(1) Task 1 Distance	(2) Task 1 Distance	(3) Task 1 Distance	(4) Task 2 Distance	(5) Task 2 Distance	(6) Task 2 Distance	(7) Task 3 Distance	(8) Task 3 Distance	(9) Task 3 Distance
UR_t	0.0109*	0.0111*	0.0148**	0.0168**	0.00999	0.0101	0.00514	0.00954	0.00601
	(0.00577)	(0.00582)	(0.00565)	(0.00658)	(0.00664)	(0.00637)	(0.00666)	(0.00680)	(0.00635)
($\mathrm{UR}_{\ell t}$-UR_t)	0.00353	0.00443	0.00358	0.000616	0.000299	0.000839	-0.000614	-0.000735	-0.000593
	(0.00396)	(0.00429)	(0.00399)	(0.00615)	(0.00526)	(0.00613)	(0.00416)	(0.00407)	(0.00415)
Age	-0.00165**	-0.000911	-0.00151**	-0.00138**	-0.000580	-0.00105**	-0.000319	-7.38e-05	-0.000269
	(0.000666)	(0.000654)	(0.000627)	(0.000536)	(0.000493)	(0.000524)	(0.000477)	(0.000491)	(0.000478)
Male	-0.00726	-0.0314***	-0.00847	-0.0307***	0.0644***	-0.0335***	0.0516***	0.155***	0.0512***
	(0.0102)	(0.0100)	(0.0105)	(0.00850)	(0.0111)	(0.00841)	(0.00894)	(0.0112)	(0.00899)
Married/C.law	0.00354	0.0233**	0.00464	0.0105	0.0175	0.0121	-0.0187	-0.0147	-0.0183
	(0.0128)	(0.0109)	(0.0131)	(0.0117)	(0.0116)	(0.0119)	(0.0117)	(0.0121)	(0.0116)
Union_t	0.0260**	0.0367***	0.0250**	-0.0105	-0.0312***	-0.0129	-0.0296***	-0.0479***	-0.0300***
	(0.0104)	(0.0110)	(0.0108)	(0.00823)	(0.00854)	(0.00828)	(0.00808)	(0.00813)	(0.00806)
Union_{t-1}	-0.0406***	-0.0208**	-0.0413***	0.0245**	0.00436	0.0227**	0.0273***	0.00667	0.0270***
	(0.00955)	(0.00799)	(0.00931)	(0.00927)	(0.00908)	(0.00924)	(0.00667)	(0.00709)	(0.00666)
Pub Sector_t	0.191***	0.245***	0.189***	0.0324	0.00888	0.0266	-0.0377***	-0.0717***	-0.0386***
	(0.0248)	(0.0269)	(0.0256)	(0.0274)	(0.0240)	(0.0277)	(0.0139)	(0.0149)	(0.0137)
Pub Sector_{t-1}	-0.156***	-0.0192	-0.157***	-0.0411	-0.0559*	-0.0439	0.0149	-0.0250	0.0144
	(0.0169)	(0.0144)	(0.0168)	(0.0288)	(0.0299)	(0.0286)	(0.0198)	(0.0229)	(0.0197)
Job Tenure_{t-1}	-4.58e-07***	-5.52e-08	-4.60e-07***	-9.08e-08	-2.20e-07***	-9.61e-08	4.50e-08	-4.43e-08	4.42e-08
	(7.56e-08)	(8.37e-08)	(7.58e-08)	(7.58e-08)	(7.51e-08)	(7.68e-08)	(9.54e-08)	(9.46e-08)	(9.56e-08)
HS	0.0235	0.0610***	0.0223	-0.00739	-0.0231	-0.00989	0.0467**	0.00707	0.0463**
	(0.0184)	(0.0172)	(0.0185)	(0.0214)	(0.0207)	(0.0216)	(0.0221)	(0.0216)	(0.0220)
OPS	0.0609**	0.131***	0.0588**	0.0149	-0.00114	0.0110	-0.00920	-0.0625**	-0.00994
	(0.0260)	(0.0235)	(0.0259)	(0.0252)	(0.0244)	(0.0252)	(0.0282)	(0.0277)	(0.0282)
PS	0.0665***	0.223***	0.0660***	-0.00207	0.0136	-0.00296	-0.0184	-0.0793***	-0.0186
	(0.0140)	(0.0139)	(0.0141)	(0.0193)	(0.0200)	(0.0194)	(0.0208)	(0.0217)	(0.0208)
SW 1D		0.0872	0.100		-0.0183	-0.0428		0.0455	0.0265
		(0.0552)	(0.0635)		(0.0956)	(0.0985)		(0.0949)	(0.0983)
$\mathrm{UR}_t \times$ SW 1D		-0.00600	-0.00962		0.00835	0.0153		-0.00503	-0.00215
		(0.00780)	(0.00871)		(0.0130)	(0.0136)		(0.0129)	(0.0135)
NOC 0_{t-1}		0.514***			-0.394***			0.352***	
		(0.0245)			(0.0282)			(0.0269)	
NOC 1_{t-1}		0.205***			-0.591***			0.158***	
		(0.0223)			(0.0318)			(0.0191)	
NOC 2_{t-1}		0.490***			-0.456***			-0.115***	
		(0.0319)			(0.0443)			(0.0403)	
NOC 3_{t-1}		0.167***			0.0194			0.134***	
		(0.0234)			(0.0531)			(0.0238)	
NOC 4_{t-1}		-0.0684			-1.033***			-0.111***	
		(0.0412)			(0.0483)			(0.0407)	
NOC 5_{t-1}		0.747***			-0.0924**			0.109***	
		(0.0190)			(0.0416)			(0.0187)	
NOC 6_{t-1}		0.664***			-0.484***			-0.111***	
		(0.0263)			(0.0321)			(0.0228)	
NOC 7_{t-1}		0.896***			-0.446***			-0.195***	
		(0.0263)			(0.0411)			(0.0290)	
NOC 8_{t-1}		0.920***			-0.235***			-0.118***	
		(0.0348)			(0.0511)			(0.0320)	
Observations	43,395	43,395	43,395	43,395	43,395	43,395	43,395	43,395	43,395
R-squared	0.011	0.090	0.011	0.004	0.062	0.006	0.006	0.036	0.006
Marginal Effects		0.00855	0.0107*		0.0135**	0.0167**		0.00740	0.00509
UR_t		(0.00570)	(0.00579)		(0.00643)	(0.00654)		(0.00630)	(0.00670)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers with previous job also private-sector and non-unionized and in NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 13: Separate Task Distance Estimates, EUE Movers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Task 1 Distance	Task 1 Distance	Task 1 Distance	Task 2 Distance	Task 2 Distance	Task 2 Distance	Task 3 Distance	Task 3 Distance	Task 3 Distance
UR_t	-0.0182*	-0.00724	-0.00505	-0.0179***	-0.0172*	-0.0223**	0.0174*	0.0145	0.00859
	(0.00921)	(0.00744)	(0.00837)	(0.00654)	(0.00885)	(0.00892)	(0.00988)	(0.0151)	(0.0116)
$(UR_{\ell t}-UR_t)$	0.00280	0.00167	0.00411	-0.00562	-0.00708*	-0.00589	0.00698*	0.00864**	0.00775**
	(0.00371)	(0.00343)	(0.00401)	(0.00383)	(0.00373)	(0.00380)	(0.00378)	(0.00354)	(0.00384)
Age	-0.00311***	-0.00199***	-0.00308***	-0.000534	-0.000174	-0.000259	0.00141*	0.00142*	0.00159**
	(0.000529)	(0.000662)	(0.000611)	(0.000729)	(0.000692)	(0.000720)	(0.000774)	(0.000851)	(0.000776)
Male	0.0280**	-0.00582	0.0357**	-0.0457***	0.0443**	-0.0473***	0.0109	0.178***	0.0139
	(0.0137)	(0.0170)	(0.0167)	(0.0147)	(0.0186)	(0.0161)	(0.0128)	(0.0198)	(0.0141)
Married/C. law	-0.0184**	-0.00548	-0.0211**	0.0142	0.0206	0.0118	0.0119	0.0147	0.00821
	(0.00862)	(0.00941)	(0.00922)	(0.0170)	(0.0161)	(0.0172)	(0.0131)	(0.0119)	(0.0125)
$Union_t$	-0.00175	0.0249**	0.0111	-0.0168	-0.0374***	-0.0192	-0.0521***	-0.0877***	-0.0532***
	(0.00857)	(0.00972)	(0.00893)	(0.0106)	(0.0126)	(0.0119)	(0.00937)	(0.00964)	(0.00992)
Pub $Sector_t$	0.123***	0.249***	0.121***	0.0801***	0.0873***	0.0939***	-0.0804***	-0.148***	-0.0944***
	(0.0275)	(0.0296)	(0.0285)	(0.0216)	(0.0209)	(0.0198)	(0.0240)	(0.0227)	(0.0274)
HS	-0.0442***	0.00387	-0.0493***	0.0121	-0.000292	0.00717	0.0461**	-0.0137	0.0431**
	(0.0165)	(0.0151)	(0.0179)	(0.0163)	(0.0171)	(0.0174)	(0.0180)	(0.0214)	(0.0191)
OPS	-0.0726***	0.0211	-0.0800***	0.0143	0.0246	0.0205	0.00855	-0.0851***	-0.00355
	(0.0195)	(0.0204)	(0.0205)	(0.0321)	(0.0315)	(0.0311)	(0.0313)	(0.0292)	(0.0305)
PS	-0.0688***	0.117***	-0.0807***	-0.00961	0.0270	-0.0125	0.0288	-0.0593**	0.0264
	(0.0150)	(0.0169)	(0.0168)	(0.0288)	(0.0291)	(0.0304)	(0.0205)	(0.0267)	(0.0226)
Volunt. Sep_{t-1}	-0.0577	-0.0371	-0.0537	0.0444**	0.0304	0.0571**	0.0236	6.43e-05	0.0144
	(0.0362)	(0.0336)	(0.0362)	(0.0219)	(0.0243)	(0.0242)	(0.0178)	(0.0178)	(0.0184)
Involunt. Sep_{t-1}	-0.0562*	-0.0152	-0.0441	-0.0232	0.0247	-0.0133	-0.0242	-0.0217	-0.0351
	(0.0305)	(0.0280)	(0.0300)	(0.0191)	(0.0205)	(0.0202)	(0.0210)	(0.0234)	(0.0229)
Unemp. $Duration_{t-1}$		-0.000947	-0.00147*		-0.000532	-0.000233		0.000646	0.00142**
		(0.000676)	(0.000770)		(0.000766)	(0.000785)		(0.000599)	(0.000565)
SW 1D		0.100	0.0843		0.0145	-0.0343		-0.119	-0.143
		(0.0798)	(0.0964)		(0.0874)	(0.0980)		(0.0907)	(0.0856)
$UR_t \times$ SW 1D		-0.0165	-0.0221*		0.00395	0.00936		0.0177	0.0203*
		(0.0102)	(0.0120)		(0.0122)	(0.0138)		(0.0127)	(0.0114)
NOC 0_{t-1}		0.719***			-0.549***			0.418***	
		(0.0332)			(0.0314)			(0.0324)	
NOC 1_{t-1}		0.232***			-0.844***			0.150***	
		(0.0381)			(0.0449)			(0.0274)	
NOC 2_{t-1}		0.657***			-0.685***			-0.263***	
		(0.0654)			(0.0734)			(0.0377)	
NOC 3_{t-1}		0.197***			-0.0555			0.0523	
		(0.0508)			(0.0362)			(0.0465)	
NOC 4_{t-1}		0.0520			-1.186***			-0.183***	
		(0.0981)			(0.0969)			(0.0494)	
NOC 5_{t-1}		0.926***			-0.192***			0.0812***	
		(0.0339)			(0.0297)			(0.0210)	
NOC 6_{t-1}		0.876***			-0.575***			-0.263***	
		(0.0384)			(0.0316)			(0.0229)	
NOC 7_{t-1}		1.091***			-0.621***			-0.250***	
		(0.0458)			(0.0367)			(0.0359)	
NOC 8_{t-1}		1.154***			-0.388***			-0.206***	
		(0.0528)			(0.0411)			(0.0368)	
Observations	33,520	31,229	31,229	33,520	31,229	31,229	33,520	31,229	31,229
R-squared	0.009	0.117	0.011	0.005	0.067	0.006	0.008	0.062	0.009
Marginal Effect		-0.0149*	-0.0149*		-0.0154**	-0.0154**		0.0227*	0.0227*
UR_t		(0.00754)	(0.00754)		(0.00709)	(0.00709)		(0.0117)	(0.0117)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers whoes prior job was in NOC occupation major group 9 (mainly low-skill labour jobs) who left their job for “other" reasons and whose new job is in the same 1-digit occupation grouping.. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 14: Task Distance Estimates, WE Movers

	(1) Distance	(2) Distance	(3) Distance	(4) Distance
UR_t	0.01492***	0.01119***	0.01515***	0.01139***
	(0.002457)	(0.002577)	(0.002476)	(0.002567)
$(UR_{\ell t}$-$UR_t)$	0.00016	0.00015	-0.0004	-0.00044
	(0.001035)	(0.000958)	(0.001638)	(0.001488)
Age	-0.00087***	-0.00084***	-0.00086***	-0.00083***
	(0.000176)	(0.000180)	(0.000178)	(0.000182)
Married/C. Law	-0.01198***	-0.0132***	-0.01232***	-0.01356***
	(0.003303)	(0.003337)	(0.003373)	(0.003411)
Union_t	-0.00451	-0.00455	-0.00433	-0.00437
	(0.003553)	(0.003569)	(0.003545)	(0.003563)
Union_{t-1}	-0.01338***	-0.01342***	-0.01322***	-0.01325***
	(0.003313)	(0.003287)	(0.003314)	(0.003289)
Pub Sector_t	0.01097	0.01074	0.01213	0.01189
	(0.008594)	(0.008610)	(0.008595)	(0.008612)
Pub Sector_{t-1}	-0.01262	-0.01268	-0.01226	-0.01234
	(0.011842)	(0.011795)	(0.011643)	(0.011596)
Job Tenure_{t-1}	-0.00006***	-0.00006***	-0.00006***	-0.00006***
x 1000	(0.019400)	(0.019530)	(0.019240)	(0.019360)
HS	0.00821	0.00857	0.00867	0.00903
	(0.007961)	(0.007995)	(0.007946)	(0.007975)
OPS	0.01674*	0.01718*	0.01743*	0.01785*
	(0.009006)	(0.009049)	(0.008968)	(0.009007)
PS	-0.01597	-0.01566	-0.01487	-0.01455
	(0.009977)	(0.009927)	(0.009907)	(0.009849)
Prov FE	YES	YES	YES	YES
Region FE	NO	NO	YES	YES
Linear Trend	YES	YES	YES	YES
Quad Trend	NO	YES	NO	YES
N	47152	47152	47152	47152

Within-Employer movers are those who report occupation change at the 3-digit level but do not change employer. Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated workers with previous job also private-sector and non-unionized. All specifications include a constant term and a discontinuity term for months from January 1997 onward and month-of-year dummies to capture seasonality in the data.

Table 15: Career Change Propensity Estimates, EE 4-Digit Occupation Movers

	(1)	(2)	(3)	(4)	(5)	(6)
	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)
UR_t	-0.0123***	-0.00982***	-0.00966***	0.00570	-0.0100***	-0.0229***
	(0.00159)	(0.00156)	(0.00154)	(0.00476)	(0.00163)	(0.00473)
$(UR_{\ell t}-UR_t)$	-0.00621***	-0.00532***	-0.00525***	-0.00527***	-0.00545***	-0.00530***
	(0.00126)	(0.00128)	(0.00128)	(0.00128)	(0.000128)	(0.00128)
Age		-0.00630***	-0.0838***	-0.00244**	-0.00579***	-0.00628***
		(0.000181)	(0.0160)	(0.00113)	(0.000174)	(0.000181)
Male		-0.0208***	-0.0198***	-0.0208***	-0.0198***	-0.0208***
		(0.00484)	(0.00478)	(0.00484)	(0.00541)	(0.00480)
Married/C. Law		-0.0183***	-0.0109**	-0.0222***	-0.0123	-0.0185***
		(0.00474)	(0.00503)	(0.00481)	(0.00452)	(0.00476)
HS		0.0327***	0.0367***	0.0319***	0.0282*	-0.0654
		(0.00754)	(0.00726)	(0.00758)	(0.00706)	(0.0440)
OPS		0.0502***	0.0563***	0.0490***	0.00460	-0.101*
		(0.00917)	(0.00962)	(0.00918)	(0.0101)	(0.0549)
PS		-0.0201***	-0.000654	-0.0209***	-0.00632	-0.149***
		(0.00635)	(0.00651)	(0.00638)	(0.00656)	(0.0515)
$UR_t \times$ Age				-0.000491***		
				(0.000141)		
NOC 0_{t-1}					-0.0387***	
					(0.0100)	
NOC 1_{t-1}					-0.167***	
					(0.0135)	
NOC 2_{t-1}					-0.289***	
					(0.0221)	
NOC 3_{t-1}					-0.0875***	
					(0.0115)	
NOC 4_{t-1}					-0.0732***	
					(0.0121)	
NOC 5_{t-1}					-0.0352***	
					(0.0141)	
NOC 6_{t-1}					-0.207***	
					(0.0153)	
NOC 7_{t-1}					-0.0282	
					(0.0180)	
NOC 8_{t-1}					0.0719***	
					(0.0205)	
$UR_t \times$ HS						0.0120**
						(0.00505)
$UR_t \times$ OPS						0.0187**
						(0.00718)
$UR_t \times$ PS						0.0159**
						(0.00645)
Age^2			0.00241***			
			(0.000630)			
Age^3			-3.02e-05***			
			(1.07e-05)			
Age^4			1.32e-07*			
			(6.75e-08)			
Observations	72,891	72,891	72,891	72,891	72,091	72,891
R-squared	0.017	0.048	0.051	0.048	0.081	0.048
Marginal Effects				-0.00987***		-0.00958***
UR_t				(0.00155)		(0.00160)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is LHS educated female workers with NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. NOC 1-8 are binary indicators for 1-digit major occupation group of prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 16: Career Change Propensity Estimates, EUE 4-Digit Occupation Movers

	(1)	(2)	(3)	(4)	(5)	(6)
	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)	Pr(SW 4D)
UR_t-	-0.0260***	-0.0231***	-0.0225***	0.00241	-0.0464***	-0.0249***
	(0.00212)	(0.00208)	(0.00206)	(0.00468)	(0.00237)	(0.00285)
($UR_{\ell t}$-UR_t)	-0.00269*	-0.00261*	-0.00219	-0.00250*	-0.00238	-0.00263*
	(0.00139)	(0.00149)	(0.00148)	(0.00148)	(0.000906)	(0.00153)
Age		-0.00702***	-0.0774***	-0.000544	-0.00686***	-0.00700***
		(0.000271)	(0.0167)	(0.000827)	(0.000278)	(0.000269)
Male		-0.0137***	-0.0134**	-0.0138***	-0.0307***	-0.0138***
		(0.00505)	(0.00532)	(0.00500)	(0.00766)	(0.00507)
Married/C. Law		-0.0134***	-0.00671	-0.0230***	-0.0224**	-0.0127***
		(0.00403)	(0.00404)	(0.00422)	(0.00383)	(0.00411)
HS		0.0307***	0.0366***	0.0283***	0.0243***	0.0537
		(0.00680)	(0.00629)	(0.00692)	(0.00689)	(0.0417)
OPS		0.0406***	0.0469***	0.0380***	0.0367***	-0.00647
		(0.00731)	(0.00709)	(0.00748)	(0.00713)	(0.0320)
PS		0.00755	0.0280***	0.00479	-0.0139	-0.0422
		(0.00830)	(0.00775)	(0.00862)	(0.00869)	(0.0313)
$UR_t \times$ Age				-0.000765***		
				(0.000108)		
NOC 0_{t-1}					-0.131***	
					(0.0144)	
NOC 1_{t-1}					-0.200***	
					(0.0188)	
NOC 2_{t-1}					-0.318***	
					(0.0143)	
NOC 3_{t-1}					-0.239***	
					(0.0166)	
NOC 4_{t-1}					-0.177***	
					(0.0263)	
NOC 5_{t-1}					-0.146***	
					(0.0160)	
NOC 6_{t-1}					-0.281	
					(0.0188)	
NOC 7_{t-1}					-0.185***	
					(0.0192)	
NOC 8_{t-1}					-0.111***	
					(0.0167)	
$UR_t \times$ HS						-0.00275
						(0.00424)
$UR_t \times$ OPS						0.00547
						(0.00363)
$UR_t \times$ PS						0.00577*
						(0.00315)
Age^2			0.00202***			
			(0.000709)			
Age^3			-2.24e-05*			
			(1.28e-05)			
Age^4			8.03e-08			
			(8.31e-08)			
Observations	89,885	89,885	89,885	89,885	88,992	89,885
R-squared	0.141	0.171	0.175	0.172	0.175	0.172
Marginal Effects				-0.0227***		-0.0229***
UR_t				(0.00210)		(0.00210)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is LHS educated female workers with NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. NOC 1-8 are binary indicators for 1-digit major occupation group of prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 17: Task Distance Estimates, EE Career Changers Only

	(1) Distance	(2) Distance	(3) Distance	(4) Distance	(5) Distance	(6) Distance	(7) Distance	(8) Distance
UR_t	0.00861***	0.0104**	0.0100**	0.0121	0.0120**	0.0128***	0.00878	0.0104**
	(0.00317)	(0.00408)	(0.00414)	(0.00739)	(0.00460)	(0.00456)	(0.00839)	(0.00393)
$(UR_{\ell t}\text{-}UR_t)$	0.000820	0.00106	0.00108	0.00106	0.00108	0.00134	0.00104	0.00106
	(0.000861)	(0.00161)	(0.00161)	(0.00161)	(0.00153)	(0.00161)	(0.00161)	(0.00161)
Age		-0.00143***	0.0880***	-0.00103	-0.00101***	-0.00117***	-0.00143***	-0.00143***
		(0.000153)	(0.0148)	(0.00141)	(0.000153)	(0.000150)	(0.000154)	(0.000153)
Male		-0.00271	-0.00313	-0.00270	-0.0185**	-0.0112	-0.00273	-0.00271
		(0.00744)	(0.00771)	(0.00744)	(0.00750)	(0.00750)	(0.00744)	(0.00744)
Married/C.law		-0.00332	-0.00281	-0.00345	0.00175	-0.000539	-0.00322	-0.00332
		(0.00516)	(0.00545)	(0.00507)	(0.00591)	(0.00574)	(0.00527)	(0.00506)
$Union_t$		-0.00373	-0.00399	-0.00373	-0.00322	-0.00558	-0.00372	-0.00373
		(0.00439)	(0.00437)	(0.00439)	(0.00414)	(0.00438)	(0.00440)	(0.00440)
$Union_{t-1}$		-0.00525	-0.00535	-0.00526	-0.00364	-0.00734**	-0.00524	-0.00525
		(0.00330)	(0.00331)	(0.00330)	(0.00367)	(0.00316)	(0.00329)	(0.00330)
Pub $Sector_t$		-0.00354	-0.00350	-0.00353	-0.00440	-0.00720	-0.00354	-0.00354
		(0.00920)	(0.00919)	(0.00920)	(0.00980)	(0.00880)	(0.00918)	(0.00919)
Pub $Sector_{t-1}$		-0.0168**	-0.0170**	-0.0168**	-0.0189***	-0.0206***	-0.0167**	-0.0168**
		(0.00661)	(0.00658)	(0.00660)	(0.00709)	(0.00663)	(0.00661)	(0.00663)
Job $Tenure_{t-1}$		-1.38e-07**	-0.000137**	-1.38e-07**	-1.35e-07**	-1.69e-07***	-1.39e-07**	-1.54e-07
		(6.12e-08)	(6.26e-05)	(6.12e-08)	(5.32e-08)	(6.28e-08)	(6.15e-08)	(3.48e-07)
HS		0.0152*	0.0126	0.0151*	0.0102	0.0112	-0.00247	0.0152*
		(0.00781)	(0.00769)	(0.00779)	(0.00768)	(0.00814)	(0.0666)	(0.00781)
OPS		0.0488***	0.0438***	0.0488***	0.0384***	0.0405***	0.0918	0.0488***
		(0.0111)	(0.0111)	(0.0111)	(0.0113)	(0.0109)	(0.0768)	(0.0111)
PS		0.0344***	0.0282***	0.0344***	0.0235***	0.0273***	0.0115	0.0344***
		(0.00762)	(0.00711)	(0.00761)	(0.00701)	(0.00751)	(0.0704)	(0.00763)
$UR_t \times$ Age				-5.52e-05				
				(0.000192)				
SW 1D					0.157***	0.157***		
					(0.0207)	(0.0219)		
$UR_t \times$ SW 1D					-0.00492*	-0.00562*		
					(0.00289)	(0.00313)		
NOC 0_{t-1}					0.0714***			
					(0.0144)			
NOC 1_{t-1}					0.165***			
					(0.0158)			
NOC 2_{t-1}					0.139***			
					(0.0173)			
NOC 3_{t-1}					0.0469***			
					(0.0172)			
NOC 4_{t-1}					0.287***			
					(0.0234)			
NOC 5_{t-1}					0.0863***			
					(0.0143)			
NOC 6_{t-1}					0.122***			
					(0.0166)			
NOC 7_{t-1}					-0.00311			
					(0.0177)			
NOC 8_{t-1}					0.0661***			
					(0.0155)			
$UR_t \times$ HS							0.00243	
							(0.00902)	
$UR_t \times$ OPS							-0.00593	
							(0.0105)	
$UR_t \times$ PS							0.00317	
							(0.00949)	
$UR_t \times$ Job $Tenure_{t-1}$								2.08e-09
								(5.22e-08)
Age^2			-0.00359***					
			(0.000602)					
Age^3			5.97e-05***					
			(1.03e-05)					
Age^4			-3.51e-07***					
			(6.34e-08)					
Observations	47,962	30,499	30,499	30,499	30,499	30,499	30,499	30,499
R-squared	0.007	0.012	0.013	0.012	0.068	0.043	0.012	0.012
Marginal Effects				0.0104**	0.00900**	0.00936**	0.0104**	0.0104**
UR_t				(0.00409)	(0.00395)	(0.00388)	(0.00410)	(0.00408)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers with previous job also private-sector and non-unionized and in NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 18: Task Distance Estimates, EUE Movers

	(1) Distance	(2) Distance	(3) Distance	(4) Distance	(5) Distance	(6) Distance	(7) Distance	(8) Distance
UR_t	0.00541***	0.00456*	0.00520	-0.00392	0.00839	0.00855	0.000302	0.00539
	(0.00133)	(0.00272)	(0.00316)	(0.00763)	(0.00581)	(0.00616)	(0.00848)	(0.00415)
$(UR_{\ell t}$-$UR_t)$	-0.000600	-0.00131	-0.000781	-0.000759	-0.000621	-0.00102	-0.000748	-0.000737
	(0.000870)	(0.00119)	(0.00125)	(0.00125)	(0.00130)	(0.00125)	(0.00125)	(0.00125)
Age		-0.000709*	0.0796***	-0.00273*	-0.000187	-0.000387	-0.000618*	-0.000616*
		(0.000377)	(0.0208)	(0.00160)	(0.000240)	(0.000272)	(0.000351)	(0.000350)
Male		-0.0185***	-0.0179***	-0.0178***	-0.0278***	-0.0267***	-0.0178***	-0.0176***
		(0.00401)	(0.00460)	(0.00448)	(0.00413)	(0.00426)	(0.00446)	(0.00447)
Married/C.law		0.0115	0.00823	0.0108	0.00802	0.00857	0.0107	0.0101
		(0.00757)	(0.00821)	(0.00787)	(0.00762)	(0.00784)	(0.00790)	(0.00788)
$Union_t$		-0.00314	-0.00237	-0.00232	-0.00368	-0.00455	-0.00233	-0.00233
		(0.00536)	(0.00537)	(0.00544)	(0.00525)	(0.00547)	(0.00541)	(0.00544)
Pub $Sector_t$		0.0102	0.00778	0.00799	-0.00685	0.00289	0.00786	0.00811
		(0.0145)	(0.0150)	(0.0149)	(0.0122)	(0.0133)	(0.0150)	(0.0149)
HS		0.0196**	0.0146	0.0173*	0.00863	0.0149	-0.0154	0.0172*
		(0.00903)	(0.00987)	(0.00970)	(0.00950)	(0.0100)	(0.0641)	(0.00971)
OPS		0.0628***	0.0538***	0.0583***	0.0378***	0.0518***	0.125*	0.0583***
		(0.0100)	(0.0119)	(0.0117)	(0.0109)	(0.0115)	(0.0649)	(0.0118)
PS		0.0707***	0.0621***	0.0694***	0.0390***	0.0623***	-0.00941	0.0694***
		(0.00814)	(0.00944)	(0.00884)	(0.00952)	(0.00979)	(0.0688)	(0.00883)
Volunt. Sep_{t-1}		-0.0317***	-0.0333***	-0.0314***	-0.0243***	-0.0256***	-0.0312***	-0.0314***
		(0.00785)	(0.00836)	(0.00843)	(0.00782)	(0.00834)	(0.00845)	(0.00842)
Involunt. Sep_{t-1}		-0.0313***	-0.0321***	-0.0300***	-0.0272***	-0.0270***	-0.0300***	-0.0301***
		(0.00929)	(0.00871)	(0.00857)	(0.00840)	(0.00804)	(0.00858)	(0.00859)
Unemp. $Duration_{t-1}$			8.40e-08	1.10e-07	5.82e-05	4.52e-05	0.000108	0.000188
			(2.35e-07)	(2.36e-07)	(0.000227)	(0.000225)	(0.000238)	(0.00218)
$UR_t \times$ Age				0.000289				
				(0.000210)				
SW 1D					0.163***	0.159**		
					(0.0577)	(0.0618)		
$UR_t \times$ SW 1D					-0.00559	-0.00516		
					(0.00691)	(0.00740)		
NOC 0_{t-1}					0.0299**			
					(0.0145)			
NOC 1_{t-1}					0.173***			
					(0.0170)			
NOC 2_{t-1}					0.0393*			
					(0.0224)			
NOC 3_{t-1}					0.0365*			
					(0.0191)			
NOC 4_{t-1}					0.272***			
					(0.0191)			
NOC 5_{t-1}					0.0247			
					(0.0154)			
NOC 6_{t-1}					0.0460**			
					(0.0175)			
NOC 7_{t-1}					-0.0786***			
					(0.0184)			
NOC 8_{t-1}					-0.0211			
					(0.0155)			
$UR_t \times$ HS							0.00441	
							(0.00900)	
$UR_t \times$ OPS							-0.00916	
							(0.00916)	
$UR_t \times$ PS							0.0107	
							(0.00937)	
$UR_t \times$ Unemp. $Duration_{t-1}$								-1.04e-05
								(0.000297)
Age^2			-0.00322***					
			(0.000884)					
Age^3			5.45e-05***					
			(1.58e-05)					
Age^4			-3.31e-07***					
			(1.02e-07)					
Observations	45,066	24,294	23,035	23,035	23,035	23,035	23,035	23,035
R-squared	0.006	0.016	0.017	0.016	0.083	0.050	0.016	0.016
Marginal Effect				0.00536*	0.00489*	0.00533*	0.00550*	0.00529*
UR_t				(0.00316)	(0.00284)	(0.00312)	(0.00317)	(0.00315)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers whoes prior job was in NOC occupation major group 9 (mainly low-skill labour jobs) who left their job for “other" reasons and whose new job is in the same 1-digit occupation grouping.. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies and a control for potential discontinuity from 1997 onward.

Table 19: Career Change Propensity Estimates, EE 2-Digit Occupation Movers 1997-2015

	(1)	(2)	(3)	(4)	(5)	(6)
	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)
UR_t	-0.00121	0.00384	0.00322	0.0186**	0.00581	-0.00821
	(0.00383)	(0.00409)	(0.00406)	(0.00869)	(0.00380)	(0.0114)
($UR_{\ell t}$-UR_t)	-0.00277	-0.00256	-0.00261	-0.00236	-0.00238	-0.00257
	(0.00190)	(0.00191)	(0.00188)	(0.00182)	(0.00182)	(0.00191)
Age		-0.00574***	-0.0592**	-0.00250	-0.00535***	-0.00574***
		(0.000212)	(0.0242)	(0.00177)	(0.000206)	(0.000213)
Male		-0.00948	-0.00881	0.0336***	0.0335***	-0.00959
		(0.00701)	(0.00688)	(0.00490)	(0.00490)	(0.00705)
Married/C. law		-0.0309***	-0.0194***	-0.0258***	-0.0249***	-0.0307***
		(0.00640)	(0.00707)	(0.00613)	(0.00634)	(0.00627)
HS		0.0379***	0.0414***	0.0337**	0.0338**	-0.0798
		(0.0127)	(0.0129)	(0.0135)	(0.0135)	(0.0857)
OPS		0.0398***	0.0453***	0.0354***	0.0355***	0.0752
		(0.0124)	(0.0133)	(0.0128)	(0.0127)	(0.0795)
PS		-0.0225**	-0.00437	-0.00910	-0.00897	-0.132
		(0.0113)	(0.0123)	(0.0121)	(0.0121)	(0.0872)
$UR_t \times$ Age				-0.000392		
				(0.000248)		
NOC 0_{t-1}					-0.0911***	
					(0.0112)	
NOC 1_{t-1}					-0.242***	
					(0.0214)	
NOC 2_{t-1}					-0.265***	
					(0.0188)	
NOC 3_{t-1}					-0.125***	
					(0.0216)	
NOC 4_{t-1}					-0.0914***	
					(0.0279)	
NOC 5_{t-1}					-0.0797***	
					(0.0209)	
NOC 6_{t-1}					-0.260***	
					(0.0214)	
NOC 7_{t-1}					-0.000637	
					(0.0271)	
NOC 8_{t-1}					0.0697***	
					(0.0193)	
$UR_t \times$ HS						0.0162
						(0.0114)
$UR_t \times$ OPS						-0.00489
						(0.0114)
$UR_t \times$ PS						0.0151
						(0.0120)
Age^2			0.00153			
			(0.000985)			
Age^3			-1.75e-05			
			(1.72e-05)			
Age^4			6.94e-08			
			(1.08e-07)			
Observations	43,565	43,565	43,565	43,255	43,255	43,565
R-squared	0.008	0.036	0.039	0.074	0.074	0.037
Marginal Effect				0.00583		0.00391
UR_t				(0.00382)		(0.00410)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is LHS educated female workers with NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. NOC 1-8 are binary indicators for 1-digit major occupation group of prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies.

Table 20: Career Change Propensity Estimates, EUE 2-Digit Occupation Movers 1997-2015

	(1)	(2)	(3)	(4)	(5)	(6)
	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)	Pr(SW 2D)
UR_t	-0.0173***	-0.0153***	-0.0153***	0.00778	-0.0120***	-0.0346***
	(0.00350)	(0.00345)	(0.00347)	(0.0108)	(0.00365)	(0.0118)
($UR_{\ell t}$-UR_t)	-0.00493**	-0.00544**	-0.00531**	-0.00530**	-0.00540**	-0.00537**
	(0.00235)	(0.00231)	(0.00231)	(0.00221)	(0.00225)	(0.00228)
Age		-0.00534***	0.00926	-0.000990	-0.00538***	-0.00534***
		(0.000502)	(0.0236)	(0.00275)	(0.000527)	(0.000506)
Male		-0.00120	-0.00115	0.0207**	0.0206**	-0.00127
		(0.00546)	(0.00552)	(0.00911)	(0.00909)	(0.00546)
Married/C. law		-0.000167	0.00398	-0.00609	-0.00430	0.000271
		(0.0100)	(0.0101)	(0.0102)	(0.00961)	(0.0100)
HS		0.0426***	0.0432***	0.0452***	0.0458***	-0.123
		(0.0138)	(0.0136)	(0.0158)	(0.0157)	(0.108)
OPS		0.0428***	0.0437***	0.0469***	0.0475***	-0.0185
		(0.0142)	(0.0141)	(0.0143)	(0.0144)	(0.0949)
PS		0.00761	0.0133	0.0124	0.0128	-0.182*
		(0.0145)	(0.0142)	(0.0171)	(0.0171)	(0.0927)
$UR_t \times$ Age				-0.000598*		
				(0.000332)		
NOC 0_{t-1}				-0.201***	-0.201***	
				(0.0192)	(0.0190)	
NOC 1_{t-1}				-0.234***	-0.234***	
				(0.0250)	(0.0250)	
NOC 2_{t-1}				-0.248***	-0.249***	
				(0.0233)	(0.0233)	
NOC 3_{t-1}				-0.178***	-0.178***	
				(0.0248)	(0.0247)	
NOC 4_{t-1}				-0.161***	-0.161***	
				(0.0406)	(0.0408)	
NOC 5_{t-1}				-0.224***	-0.224***	
				(0.0145)	(0.0144)	
NOC 6_{t-1}				-0.307***	-0.307***	
				(0.0203)	(0.0202)	
NOC 7_{t-1}				-0.0968***	-0.0966***	
				(0.0267)	(0.0268)	
NOC 8_{t-1}				-0.0593***	-0.0589***	
				(0.0192)	(0.0190)	
$UR_t \times$ HS						0.0222
						(0.0136)
$UR_t \times$ OPS						0.00808
						(0.0128)
$UR_t \times$ PS						0.0256**
						(0.0114)
Age^2			-0.000953			
			(0.00103)			
Age^3			2.16e-05			
			(1.89e-05)			
Age^4			-1.58e-07			
			(1.24e-07)			
Observations	33,534	33,534	33,534	33,368	33,368	33,534
R-squared	0.015	0.037	0.038	0.065	0.064	0.037
Marginal Effect				-0.0121***		-0.0148***
UR_t				(0.00361)		(0.00327)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is LHS educated female workers with NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. NOC 1-8 are binary indicators for 1-digit major occupation group of prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies.

Table 21: Task Distance Estimates, EE Movers 1997-2015

	(1) Distance	(2) Distance	(3) Distance	(4) Distance	(5) Distance	(6) Distance	(7) Distance	(8) Distance
UR_t	0.00861***	0.0104**	0.0100**	0.0121	0.0120**	0.0128***	0.00878	0.0104**
	(0.00317)	(0.00408)	(0.00414)	(0.00739)	(0.00460)	(0.00456)	(0.00839)	(0.00393)
($UR_{\ell t}$-UR_t)	0.000820	0.00106	0.00108	0.00106	0.00108	0.00134	0.00104	0.00106
	(0.000861)	(0.00161)	(0.00161)	(0.00161)	(0.00153)	(0.00161)	(0.00161)	(0.00161)
Age		-0.00143***	0.0880***	-0.00103	-0.00101***	-0.00117***	-0.00143***	-0.00143***
		(0.000153)	(0.0148)	(0.00141)	(0.000153)	(0.000150)	(0.000154)	(0.000153)
Male		-0.00271	-0.00313	-0.00270	-0.0185**	-0.0112	-0.00273	-0.00271
		(0.00744)	(0.00771)	(0.00744)	(0.00750)	(0.00750)	(0.00744)	(0.00744)
Married/C. law		-0.00332	-0.00281	-0.00345	0.00175	-0.000539	-0.00322	-0.00332
		(0.00516)	(0.00545)	(0.00507)	(0.00591)	(0.00574)	(0.00527)	(0.00506)
$Union_t$		-0.00373	-0.00399	-0.00373	-0.00322	-0.00558	-0.00372	-0.00373
		(0.00439)	(0.00437)	(0.00439)	(0.00414)	(0.00438)	(0.00440)	(0.00440)
$Union_{t-1}$		-0.00525	-0.00535	-0.00526	-0.00364	-0.00734**	-0.00524	-0.00525
		(0.00330)	(0.00331)	(0.00330)	(0.00367)	(0.00316)	(0.00329)	(0.00330)
Pub $Sector_t$		-0.00354	-0.00350	-0.00353	-0.00440	-0.00720	-0.00354	-0.00354
		(0.00920)	(0.00919)	(0.00920)	(0.00980)	(0.00880)	(0.00918)	(0.00919)
Pub $Sector_{t-1}$		-0.0168**	-0.0170**	-0.0168**	-0.0189***	-0.0206***	-0.0167**	-0.0168**
		(0.00661)	(0.00658)	(0.00660)	(0.00709)	(0.00663)	(0.00661)	(0.00663)
Job $Tenure_{t-1}$		-0.000138**	-0.000137**	-0.000138**	-0.000135**	-0.000169***	-0.000139**	-0.000154
		(6.12e-05)	(6.26e-05)	(6.12e-05)	(5.32e-05)	(6.28e-05)	(6.15e-05)	(0.000348)
HS		0.0152*	0.0126	0.0151*	0.0102	0.0112	-0.00247	0.0152*
		(0.00781)	(0.00769)	(0.00779)	(0.00768)	(0.00814)	(0.0666)	(0.00781)
OPS		0.0488***	0.0438***	0.0488***	0.0384***	0.0405***	0.0918	0.0488***
		(0.0111)	(0.0111)	(0.0111)	(0.0113)	(0.0109)	(0.0768)	(0.0111)
PS		0.0344***	0.0282***	0.0344***	0.0235***	0.0273***	0.0115	0.0344***
		(0.00762)	(0.00711)	(0.00761)	(0.00701)	(0.00751)	(0.0704)	(0.00763)
UR_t × Age				-5.52e-05				
				(0.000192)				
SW 1D					0.157***	0.157***		
					(0.0207)	(0.0219)		
UR_t × SW 1D					-0.00492*	-0.00562*		
					(0.00289)	(0.00313)		
NOC 0_{t-1}					0.0714***			
					(0.0144)			
NOC 1_{t-1}					0.165***			
					(0.0158)			
NOC 2_{t-1}					0.139***			
					(0.0173)			
NOC 3_{t-1}					0.0469***			
					(0.0172)			
NOC 4_{t-1}					0.287***			
					(0.0234)			
NOC 5_{t-1}					0.0863***			
					(0.0143)			
NOC 6_{t-1}					0.122***			
					(0.0166)			
NOC 7_{t-1}					-0.00311			
					(0.0177)			
NOC 8_{t-1}					0.0661***			
					(0.0155)			
UR_t × HS							0.00243	
							(0.00902)	
UR_t × OPS							-0.00593	
							(0.0105)	
UR_t × PS							0.00317	
							(0.00949)	
UR_t × Job $Tenure_{t-1}$								2.08e-06
								(5.22e-05)
Age^2			-0.00359***					
			(0.000602)					
Age^3			5.97e-05***					
			(1.03e-05)					
Age^4			-3.51e-07***					
			(6.34e-08)					
Observations	47,962	30,499	30,499	30,499	30,499	30,499	30,499	30,499
R-squared	0.007	0.012	0.013	0.012	0.068	0.043	0.012	0.012
Marginal Effects				0.0104**	0.00900**	0.00936**	0.0104**	0.0104**
UR_t				(0.00409)	(0.00395)	(0.00388)	(0.00410)	(0.00408)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers with previous job in NOC occupation major group 9 (mainly low-skill labour jobs) who left their job for “other" reasons and whose new job is in the same 1-digit occupation grouping. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies.

Table 22: Task Distance Estimates, EUE Movers 1997-2015

	(1) Distance	(2) Distance	(3) Distance	(4) Distance	(5) Distance	(6) Distance	(7) Distance	(8) Distance
UR_t	0.00712***	0.00509*	0.00571*	-0.00339	0.00903	0.00903	0.000759	0.00600
	(0.00121)	(0.00261)	(0.00310)	(0.00751)	(0.00588)	(0.00588)	(0.00866)	(0.00419)
($UR_{\ell t}$-UR_t)	-0.000574	-0.00131	-0.000779	-0.000758	-0.000621	-0.000621	-0.000747	-0.000733
	(0.000861)	(0.00120)	(0.00125)	(0.00125)	(0.00130)	(0.00130)	(0.00125)	(0.00125)
Age		-0.000711*	0.0797***	-0.00273*	-0.000188	-0.000188	-0.000619*	-0.000617*
		(0.000376)	(0.0207)	(0.00161)	(0.000239)	(0.000239)	(0.000350)	(0.000348)
Male		-0.0185***	-0.0180***	-0.0178***	-0.0278***	-0.0278***	-0.0178***	-0.0177***
		(0.00402)	(0.00460)	(0.00448)	(0.00413)	(0.00413)	(0.00446)	(0.00447)
Married/C. law		0.0116	0.00829	0.0109	0.00815	0.00815	0.0107	0.0102
		(0.00756)	(0.00821)	(0.00787)	(0.00761)	(0.00761)	(0.00790)	(0.00787)
Union_t		-0.00314	-0.00236	-0.00231	-0.00368	-0.00368	-0.00231	-0.00232
		(0.00533)	(0.00535)	(0.00542)	(0.00522)	(0.00522)	(0.00539)	(0.00541)
Pub Sector_t		0.0103	0.00781	0.00803	-0.00677	-0.00677	0.00789	0.00815
		(0.0145)	(0.0150)	(0.0149)	(0.0123)	(0.0123)	(0.0151)	(0.0149)
HS		0.0196**	0.0146	0.0173*	0.00873	0.00873	-0.0159	0.0172*
		(0.00903)	(0.00988)	(0.00970)	(0.00950)	(0.00950)	(0.0647)	(0.00971)
OPS		0.0628***	0.0538***	0.0583***	0.0379***	0.0379***	0.125*	0.0583***
		(0.01000)	(0.0119)	(0.0118)	(0.0110)	(0.0110)	(0.0651)	(0.0118)
PS		0.0708***	0.0622***	0.0694***	0.0391***	0.0391***	-0.00983	0.0694***
		(0.00814)	(0.00945)	(0.00885)	(0.00953)	(0.00953)	(0.0690)	(0.00884)
Volunt. Sep_{t-1}		-0.0317***	-0.0333***	-0.0313***	-0.0241***	-0.0241***	-0.0311***	-0.0313***
		(0.00786)	(0.00837)	(0.00844)	(0.00784)	(0.00784)	(0.00846)	(0.00843)
Involunt. Sep_{t-1}		-0.0312***	-0.0319***	-0.0299***	-0.0270***	-0.0270***	-0.0299***	-0.0300***
		(0.00931)	(0.00874)	(0.00859)	(0.00844)	(0.00844)	(0.00859)	(0.00861)
Unemp. Duration_{t-1}			7.80e-05	0.000103	5.09e-05	5.09e-05	0.000102	0.000262
			(0.000238)	(0.000239)	(0.000229)	(0.000229)	(0.000240)	(0.00219)
UR_t × Age				0.000289				
				(0.000211)				
SW 1D					0.163***	0.163***		
					(0.0580)	(0.0580)		
UR_t × SW 1D					-0.00563	-0.00563		
					(0.00696)	(0.00696)		
NOC 0_{t-1}					0.0300**	0.0300**		
					(0.0145)	(0.0145)		
NOC 1_{t-1}					0.173***	0.173***		
					(0.0169)	(0.0169)		
NOC 2_{t-1}					0.0393*	0.0393*		
					(0.0224)	(0.0224)		
NOC 3_{t-1}					0.0366*	0.0366*		
					(0.0191)	(0.0191)		
NOC 4_{t-1}					0.272***	0.272***		
					(0.0191)	(0.0191)		
NOC 5_{t-1}					0.0249	0.0249		
					(0.0153)	(0.0153)		
NOC 6_{t-1}					0.0461**	0.0461**		
					(0.0174)	(0.0174)		
NOC 7_{t-1}					-0.0786***	-0.0786***		
					(0.0184)	(0.0184)		
NOC 8_{t-1}					-0.0211	-0.0211		
					(0.0155)	(0.0155)		
UR_t × HS							0.00449	
							(0.00908)	
UR_t × OPS							-0.00920	
							(0.00921)	
UR_t × PS							0.0108	
							(0.00940)	
UR_t × Unemp. Dur_{t-1}								-2.13e-05
								(0.000299)
Age^2			-0.00323***					
			(0.000881)					
Age^3			5.46e-05***					
			(1.58e-05)					
Age^4			-3.32e-07***					
			(1.01e-07)					
Observations	45,066	24,294	23,035	23,035	23,035	23,035	23,035	23,035
R-squared	0.006	0.016	0.017	0.016	0.083	0.083	0.016	0.016
Marginal Effects				0.00587*	0.00551**	0.00551**	0.00600*	0.00580*
UR_t				(0.00311)	(0.00274)	(0.00274)	(0.00311)	(0.00309)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers whose prior job was in NOC occupation major group 9 (mainly low-skill labour jobs) who left their job for "other" reasons and whose new job is in the same 1-digit occupation grouping. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies.

Table 23: Separate Task Distance Estimates, EE Movers 1997-2015

	(1) Task 1 Distance	(2) Task 1 Distance	(3) Task 1 Distance	(4) Task 2 Distance	(5) Task 2 Distance	(6) Task 2 Distance	(7) Task 3 Distance	(8) Task 3 Distance	(9) Task 3 Distance
UR_t	0.0161*	0.0223*	0.0268**	0.0257***	0.0238*	0.0192	0.00703	0.0179	0.0104
	(0.00865)	(0.0133)	(0.0120)	(0.00946)	(0.0126)	(0.0119)	(0.00984)	(0.0130)	(0.0130)
$(UR_{\ell t}$-$UR_t)$	0.00510	0.00731	0.00514	0.00101	0.000648	0.00124	-0.000876	-0.000455	-0.000873
	(0.00584)	(0.00595)	(0.00586)	(0.00911)	(0.00754)	(0.00907)	(0.00610)	(0.00613)	(0.00609)
Age	-0.00252***	-0.00137	-0.00246**	-0.00188**	-0.000839	-0.00169**	-0.000135	0.000119	-0.000124
	(0.000947)	(0.000900)	(0.000934)	(0.000764)	(0.000722)	(0.000762)	(0.000740)	(0.000723)	(0.000740)
Male	-0.0102	-0.0465***	-0.0125	-0.0444***	0.0747***	-0.0504***	0.0735***	0.202***	0.0730***
	(0.0148)	(0.0131)	(0.0154)	(0.0122)	(0.0135)	(0.0120)	(0.0131)	(0.0151)	(0.0133)
Married/C. law	0.00842	0.0306*	0.00948	0.0167	0.0212	0.0184	-0.0263	-0.0241	-0.0261
	(0.0189)	(0.0156)	(0.0191)	(0.0173)	(0.0165)	(0.0175)	(0.0177)	(0.0176)	(0.0175)
$Union_t$	0.0310**	0.0451***	0.0306**	-0.0120	-0.0311***	-0.0133	-0.0429***	-0.0615***	-0.0430***
	(0.0147)	(0.0161)	(0.0148)	(0.0120)	(0.0117)	(0.0120)	(0.0123)	(0.0123)	(0.0122)
$Union_{t-1}$	-0.0591***	-0.0291***	-0.0596***	0.0349**	0.0185	0.0334**	0.0344***	0.0119	0.0343***
	(0.0134)	(0.0106)	(0.0132)	(0.0135)	(0.0137)	(0.0133)	(0.0102)	(0.0105)	(0.0102)
Pub $Sector_t$	0.232***	0.307***	0.231***	0.0335	0.0133	0.0307	-0.0558***	-0.0981***	-0.0558***
	(0.0335)	(0.0349)	(0.0338)	(0.0348)	(0.0309)	(0.0349)	(0.0179)	(0.0197)	(0.0178)
Pub $Sector_{t-1}$	-0.184***	0.0221	-0.185***	-0.0493	-0.0498	-0.0521	0.0104	-0.0332	0.0102
	(0.0220)	(0.0192)	(0.0220)	(0.0361)	(0.0376)	(0.0361)	(0.0265)	(0.0290)	(0.0264)
Job $Tenure_{t-1}$	-0.000745***	-0.000130	-0.000752***	-0.000127	-0.000355***	-0.000150	6.50e-05	-2.50e-05	6.39e-05
	(0.000123)	(0.000121)	(0.000121)	(0.000123)	(0.000113)	(0.000125)	(0.000156)	(0.000159)	(0.000157)
HS	0.0377	0.0797***	0.0365	-0.0106	-0.0334	-0.0133	0.0630*	0.0135	0.0627*
	(0.0257)	(0.0229)	(0.0258)	(0.0300)	(0.0295)	(0.0302)	(0.0320)	(0.0306)	(0.0321)
OPS	0.0853**	0.170***	0.0826**	0.0194	-0.00486	0.0139	-0.00943	-0.0774*	-0.0100
	(0.0350)	(0.0318)	(0.0350)	(0.0348)	(0.0339)	(0.0347)	(0.0396)	(0.0389)	(0.0399)
PS	0.104***	0.295***	0.102***	0.00108	0.00657	-0.00393	-0.0245	-0.105***	-0.0249
	(0.0201)	(0.0191)	(0.0204)	(0.0272)	(0.0283)	(0.0274)	(0.0312)	(0.0311)	(0.0314)
$UR_t \times$ Age		0.206**	0.157*		0.113	0.0181		0.103	0.0451
		(0.0926)	(0.0912)		(0.118)	(0.120)		(0.109)	(0.126)
SW 1D		-0.0159	-0.0176		-0.00458	0.00903		-0.0106	-0.00545
		(0.0129)	(0.0131)		(0.0165)	(0.0167)		(0.0146)	(0.0171)
$UR_t \times$ SW 1D		0.727***			-0.541***			0.478***	
		(0.0303)			(0.0322)			(0.0317)	
NOC 0_{t-1}		0.180***			-0.900***			0.260***	
		(0.0313)			(0.0472)			(0.0292)	
NOC 1_{t-1}		0.707***			-0.787***			-0.404***	
		(0.0715)			(0.0725)			(0.0711)	
NOC 2_{t-1}		0.204***			0.0636			0.177***	
		(0.0343)			(0.0701)			(0.0342)	
NOC 3_{t-1}		-0.117***			-1.467***			-0.162***	
		(0.0434)			(0.0572)			(0.0580)	
NOC 4_{t-1}		1.029***			-0.139***			0.152***	
		(0.0242)			(0.0507)			(0.0245)	
NOC 5_{t-1}		0.942***			-0.708***			-0.162***	
		(0.0299)			(0.0384)			(0.0346)	
NOC 6_{t-1}		1.203***			-0.611***			-0.244***	
		(0.0326)			(0.0480)			(0.0381)	
NOC 7_{t-1}		1.210***			-0.338***			-0.130***	
		(0.0346)			(0.0602)			(0.0399)	
NOC 8_{t-1}	-0.223**	-1.427***	-0.318***	-0.266	0.0942	-0.266	-0.0991	-0.237	-0.127
	(0.107)	(0.125)	(0.118)	(0.180)	(0.191)	(0.189)	(0.140)	(0.165)	(0.158)
Observations	30,499	30,499	30,499	30,499	30,499	30,499	30,499	30,499	30,499
R-squared	0.015	0.124	0.015	0.006	0.090	0.007	0.008	0.052	0.008
Marginal Effects		0.0124	0.0160*		0.0209**	0.0248***		0.0113	0.00703
UR_t		(0.00886)	(0.00865)		(0.00921)	(0.00933)		(0.00964)	(0.00977)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers with previous job also private-sector and non-unionized and in NOC occupation major group 9 (mainly low-skill labour jobs) and whose new job is in the same 1-digit occupation grouping. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies.

Table 24: Separate Task Distance Estimates, EUE Movers 1997-2015

	(1) Task 1 Distance	(2) Task 1 Distance	(3) Task 1 Distance	(4) Task 2 Distance	(5) Task 2 Distance	(6) Task 2 Distance	(7) Task 3 Distance	(8) Task 3 Distance	(9) Task 3 Distance
UR_t	-0.0255**	-0.0301	-0.0113	-0.0263***	-0.0339	-0.0155	0.0253*	0.0121	0.0115
	(0.0124)	(0.0243)	(0.0285)	(0.0310)	(0.0154)	(0.0287)	(0.0145)	(0.0309)	(0.0209)
$(UR_{\ell t}$-$UR_t)$	0.00334	-0.00259	-0.00557)	-0.00826	-0.00983**	-0.00861	0.0104*	0.0117**	0.0111**
	(0.00526)	(0.00470)	(0.00542)	(0.00527)	(0.00491)	(0.00520)	(0.00557)	(0.00502)	(0.00554)
Age	-0.00498***	-0.00707*	-0.00263	-0.000940	0.00111	0.00193	0.00209*	0.000144	-0.000934
	(0.000794)	(0.00409)	(0.00490)	(0.00101)	(0.00552)	(0.00559)	(0.00110)	(0.00502)	(0.00480)
Male	0.0296	-0.0218	0.0371*	-0.0630***	0.0398*	-0.0667***	0.0171	0.212***	0.0213
	(0.0187)	(0.0204)	(0.0222)	(0.0198)	(0.0224)	(0.0217)	(0.0170)	(0.0239)	(0.0188)
Married/C. law	-0.0213*	-0.00686	-0.0262**	0.0211	0.0263	0.0163	0.0151	0.0208	0.0116
	(0.0119)	(0.0110)	(0.0125)	(0.0234)	(0.0218)	(0.0234)	(0.0181)	(0.0158)	(0.0166)
$Union_t$	0.00892	0.0343**	0.0229	-0.0216	-0.0400*	-0.0232	-0.0827***	-0.104***	-0.0824***
	(0.0131)	(0.0138)	(0.0138)	(0.0165)	(0.0201)	(0.0177)	(0.0139)	(0.0138)	(0.0145)
Pub $Sector_t$	0.174***	0.296***	0.165***	0.108***	0.130***	0.124***	-0.113***	-0.173***	-0.129***
	(0.0377)	(0.0389)	(0.0377)	(0.0280)	(0.0296)	(0.0254)	(0.0328)	(0.0319)	(0.0364)
HS	-0.0538**	-0.00094	-0.0633**	0.0202	0.000626	0.0141	0.0588**	-0.0185	0.0551**
	(0.0226)	(0.0207)	(0.0242)	(0.0228)	(0.0227)	(0.0236)	(0.0244)	(0.0286)	(0.0260)
OPS	-0.0948***	0.0157	-0.108***	0.0229	0.0350	0.0301	0.0103	-0.104***	-0.00520
	(0.0265)	(0.0250)	(0.0274)	(0.0432)	(0.0422)	(0.0415)	(0.0427)	(0.0389)	(0.0415)
PS	-0.0892***	0.134***	-0.108***	-0.00886	0.0232	-0.0145	0.0366	-0.0765**	0.0340
	(0.0217)	(0.0225)	(0.0244)	(0.0407)	(0.0399)	(0.0424)	(0.0288)	(0.0347)	(0.0314)
$UR_t \times$ Age		0.000538	-0.000262		-0.000274	-0.000348		0.000211	0.000437
		(0.000590)	(0.000707)		(0.000770)	(0.000793)		(0.000664)	(0.000647)
Volunt. Sep_{t-1}	-0.0698	-0.0465	-0.0609	0.0601**	0.0408	0.0752**	0.0310	0.00733	0.0191
	(0.0447)	(0.0366)	(0.0443)	(0.0277)	(0.0285)	(0.0300)	(0.0221)	(0.0222)	(0.0228)
Involunt. Sep_{t-1}	-0.0696*	-0.0195	-0.0517	-0.0293	0.0315	-0.0187	-0.0280	-0.0235	-0.0422
	(0.0370)	(0.0310)	(0.0361)	(0.0236)	(0.0243)	(0.0249)	(0.0261)	(0.0297)	(0.0282)
Unemp. $Duration_{t-1}$		-0.000781	-0.00171		-0.000472	-0.000241		0.000946	0.00180**
		(0.000976)	(0.00109)		(0.00105)	(0.00106)		(0.000736)	(0.000754)
SW 1D		0.136	-0.0413**		-0.108	0.0542**		-0.0938	0.00502
		(0.0917)	(0.0193)		(0.124)	(0.0219)		(0.151)	(0.0133)
$UR_t \times$ SW 1D		-0.00929			0.0275			0.0171	
		(0.0123)			(0.0173)			(0.0207)	
NOC 0_{t-1}		0.875***			-0.663***			0.527***	
		(0.0330)			(0.0331)			(0.0346)	
NOC 1_{t-1}		0.177***			-1.088***			0.211***	
		(0.0499)			(0.0570)			(0.0370)	
NOC 2_{t-1}		0.752***			-0.941***			-0.484***	
		(0.0984)			(0.112)			(0.0584)	
NOC 3_{t-1}		0.157**			0.00320			0.0555	
		(0.0635)			(0.0477)			(0.0647)	
NOC 4_{t-1}		-0.0118			-1.503***			-0.243***	
		(0.111)			(0.0965)			(0.0618)	
NOC 5_{t-1}		1.137***			-0.203***			0.104***	
		(0.0347)			(0.0333)			(0.0253)	
NOC 6_{t-1}		1.070***			-0.722***			-0.356***	
		(0.0385)			(0.0350)			(0.0295)	
NOC 7_{t-1}		1.306***			-0.750***			-0.295***	
		(0.0477)			(0.0384)			(0.0419)	
NOC 8_{t-1}		1.374***			-0.462***			-0.233***	
		(0.0524)			(0.0400)			(0.0418)	
Observations	24,294	23,035	23,035	24,294	23,035	23,035	24,294	23,035	23,035
R-squared	0.013	0.148	0.014	0.007	0.089	0.008	0.012	0.080	0.013
Marginal Effects		-0.0187*	-0.197		-0.0255***	-0.0267***		0.0296*	0.0255*
UR_t		(0.00973)	(0.0118)		(0.00902)	(0.00943)		(0.0163)	(0.0140)

Standard Errors in parentheses clustered at the Economic region level. Omitted group is non-unionized private-sector LHS educated female workers whose prior job was in NOC occupation major group 9 (mainly low-skill labour jobs) who left their job for “other" reasons and whose new job is in the same 1-digit occupation grouping. SW 1D is an indicator for 1-digit occupation change. NOC 1-8 are binary indicators for 1-digit major occupation group for prior job using NOC 2006 codes. All specifications include a constant term, economic region fixed effects, a linear time trend, month-of-year dummies.