UNIVERSITÀ DEGLI STUDI DI PADOVA
DIPARTIMENTO DI SCIENZE STATISTICHE

Final Workshop

Research Project Supported by
Italian Ministry of Education, University and Research

Dynamics and inertia in the Italian labour market

April 15-17, 2004
Venice International University
S. Servolo, Venice

Worker mobility, job displacement, redeployment and wage dynamics in Italy

Bruno Contini
University of Torino

Claudia Villosio
R & P

revisione 6 Aprile 2004

B. Contini and C. Villosio[1]

WORKER MOBILITY, JOB DISPLACEMENT, REDEPLOYMENT AND WAGE DYNAMICS in ITALY [2]

1. INTRODUCTION

There is a long standing interest in the influence of employer size on wages. In this paper we investigate the relation between wage levels and growth, labour mobility and firm size among Italy's dependent workers between 1986 and 1991. This is not a study aimed at testing theories of job matching and individual choices between staying on the present job or moving to a new one. It is a descriptive paper in which we intend to ascertain: (1) whether job changes have improved the position of movers vis-à-vis the stayers' over the five-year observation window; (2) whether firm size affects the outcome of workers' mobility across jobs and firms; and (3) to what extent did job displacement and redeployment inflict wage losses to downsized workers.

We use an employer-employee linked database developed from Italian Social Security (INPS) administrative sources, from which we build a closed panel of full-time male employees of all industries of the private sector, at work both in 1986 and 1991. Exclusions relate to women, in order to have better control over individual characteristics, and to the construction sector, in view of its seasonal characteristics which interfere in the study of mobility.

Investigating the comparative advantage of movers vs. stayers, not on impact –as is done in many studies on job switching[3] - but over a relatively long observation window, suggests that the relevant "movers" are those who do switch from one job to another (eventually going through unemployment spells), much less those who end up in long term unemployment or leave the labour market altogether. For this reason we choose to work with a closed panel of individuals, observed on the workplace from the beginning to the end of the study period. This choice allows also to finesse the main problems of unobserved heterogeneity, which would inevitably occur had we opted for open panel estimation where attrition is always present.[4]

The paper is organized as follows:
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A quick look at the literature
quali di questi testano choice models ?

[1] We are very grateful to M. Morini for his valuable research assistance.

[2] This is a widely revised version of a study that has had a long gestation period. Some of the early revisions have been written while visiting the Institute for Industrial and Labor Relations, Princeton University in the spring of 2000, where Contini was given generous hospitality. We have benefited from comments received after presentations of this version at Princeton, Torino, Padova and Aarhus. In particular, we wish to thank O. Ashenfelter and H. Farber. This research has been carried out thanks to grants by MUIR (1999 and 2001) to a inter-university research project "Labor mobility and wages: measurement problems, analytical tools, policy evaluation", coordinated by U. Trivellato of the University of Padua. Very valuable research assistantship has been provided by Roberto Quaranta.

[3] See M. Burda and A.Mertens (2001), S. Nickell et al. (2002), H.S. Farber (1993).

[4] *AS will be explained, attriters are very non random….*

A rich body of empirical studies on various aspects of mobility and wage dynamics has grown in the Nineties, as databases containing information on workers, jobs and firms have become available.
In one of the earlier studies on the United States, Brown and Medoff (1989) find no impact of firm size on wages for job-stayers, but significant size differentials among movers. This is confirmed by P. Gottschalk (2001), who suggests that in the United States (1986-93) mean wage growth between jobs is large in comparison to wage growth while working for the same employer, especially for less educated workers. *C'è anche Brown Medoff July 2003 su JLE.* R. Winter-Ebner and J. Zweimuller (1999) study wage changes of workers who move between firms of different size classes in Switzerland: the wage growth of job changers from small to larg(er) firms is significantly higher than that of job changers in the opposite direction. However, if worse working conditions are reflected in higher, utility-equalizing wages, these authors find no evidence for the hypothesis that larger enterprises provide less pleasant working conditions than small businesses. *K. Zimmermann …….*
H. Farber (1993 and 1997) looks into the cost of job losses after displacement, finding that job losses adversely affects workers' earnings in many ways. Employment probabilities are reduced and an increased probability of working part-time yields lower earnings both through shorter hours and lower wage rates. The decline in real weekly earnings between the pre displacement job and the post displacement job averages about 13% for all reemployed displaced workers and about 9% for workers displaced from full-time job who are reemployed on full time job. Burda and Mertens (2001) find that wages of displaced workers in Germany decline slightly upon reemployment. The lowest wage quartile (where displacement is concentrated) gains slightly, while losses for the upper three quartiles are comparable to the US evidence.
Hartog and Van Ophem (1994) study wage growth of certain groups of employees discriminating between mobile and non-mobile employees, and between voluntary and non-voluntary job changes; C. Flinn (1986) analyses the intertemporal structure of wages for young workers separately for movers and stayers. He presents evidence that unobserved worker-firm heterogeneity is an important component in the wage growth of young workers.
Evidence on real wage losses consequent on unemployment is provided for the UK by S. Nickell et al. (2002): estimated hourly losses amount to 10-20% during the first year from rehiring after the first unemployment spell. Longer duration spells are associated to significantly greater losses.
A somewhat different question is posed by P. Gautier et al. (2002): who gets crowded out during downturns in the Netherlands ? Their findings are that at each job level it is mainly the lower educated workers who leave during downturns.

BACKGROUND & DESCRIPTIVE STATISTICS

Our analysis is based on individual data from the Administrative Social Security (INPS) archives. We use a panel of workers matched to their firm of affiliation of approximately 100,000 workers each year from 1985 to 1991. From this panel we select a sample of 30167 full-time male workers, employed both in 1986 and in 1991 in the manufacturing and service sectors, and aged 20-50 in 1986. We find two groups:

(i) 20526 stayers (68%), employed at the same firm from the beginning till the end of the observation period (not necessarily uninterrupted spells)
(ii) 9641 movers (32%), who make one or more job-changes during the 1986-91 period. 64% of all movers go through only one job-switch, 36% undertake more than two.

Moves are more frequent among young workers, and decrease with ageing of the working force. Differences between blue-collars and white-collars are slight. Almost half of the employed blue-collars aged 20-30 experience at least one job change in the 1986-91 period.[5]

Tab. 1 Stayers and movers by individual and firm characteristics (row percentages)

		Movers	Stayers
ALL		32.0	68.0
Stayers and movers by age and skill level			
Age 20-30	Blue	45.3	54.7
	White	38.4	61.6
Age 30-40	Blue	28.5	71.5
	White	26.3	73.7
Age 40-50	Blue	24.7	75.3
	White	22.7	77.3
Stayers and movers by firm size			
	0-20	44.3	55.7
	20-200	32.6	67.4
	>200	20.6	79.4

The frequency of job changes is, not surprisingly, inversely proportional to firm-size: 44% of workers employed at small firms in 1986 change jobs in the observation period; this frequency falls to 33% for workers employed at mid-size firms, and to 21% for workers of large firms.

Most of the job changes take place wi*thin the same industries*: only few workers (less than 5%) move from manufacturing to service industries, slightly more in the opposite direction.

Tab. 5 Frequency of job changes 1986-91 across industries (9641 movers)

	1991		
1986	Manufacturing	Services	Total
Manufacturing	95.4	4.6	100.0
Services	7.9	92.1	100.0

While the majority of job changes take place among firms of equivalent size, job switches towards larger firms are more frequent than moves in the reverse direction. The pattern is clearly visible in manufacturing, less so in the service industries, *where average firm size is less than half that of manufacturing.*.

Tab. 6 Frequency of job changes 1986-91 across firm size (9641 movers)

Manufacturing			
	Small	medium	large
small (< 20)	56.2	33.7	10.1
medium (20- 500)	20.8	59.0	20.2
large (> 500)	3.0	22.8	74.2
Services			
	Small	medium	large
small (< 20)	69.2	23.8	7.1
medium (20- 500)	22.7	45.0	32.3
large (> 500)	5.1	37.6	57.3

[5] Since the mid-Eighties through the Nineties young people (18-29) were eligible to be hired under 2-year "training-and-work" contracts (CFL), not subject to renewal. At the end of the contract period, either the contract was changed into a permanent one, or a job-change was necessary.

Preliminary explanations of these patterns are provided by the following well known stylized fact about working conditions, tenure and pay at various firm-types. Ranking firms by size, the following facts emerge clearly:

(i) large firms pay better wages than small ones;

(ii) mean tenure at large firms is higher than at small enterprises;

	Gross yearly earnings 1995 (million Lit.)		Mean duration of employment spells (years)
Firm size	white collars	blue collars	All
< 20	29.6	25.6	2.0
20-200	38.9	27.7	3.4
200-500	44.6	29.6	5.3
> 500	50.4	31.7	7.7

Source: B. Contini, C. Malpede, L. Pacelli, F. Rapiti (1996)

The former is in line with predictions from efficiency wage theory; the latter with two well known facts: (1) turnover is physiologically high among small firms, also a consequence of survival rates which are much shorter compared to larger businesses; (2) job hierarchies are longer and more articulated in large firms, where mobility often takes place along internal lines[6].

Workers may therefore wish to move from a small to a large firm, as this would ensure at the same time a higher pay and a more stable career. Such a prior is also suggested also by the shared opinion that in Italy small manufacturing firms play the role of training-on-the-job for young workers who start their career in a small establishment, and then move on to larger firms once the learning phase is completed. [7]

Job changes are likely to take place, independently from firm size, if:

1) the wage differential between the present job and the new offer is sufficiently high *(v/ modelli formali di scelta- Gottschalk et al.)*
2) the quality differential – in terms of working conditions, style of supervision, social environment, life quality in general - is also sufficiently high
3) the firm of origin is going through a period of adverse business conditions, presumably leading to workforce reductions and/ or increasing risk of failure and exit from the market. Thus workers may want to pre-empt a future layoff and take a new job even if the wage and job quality differentials are not appealing.

Individual and firm wage differentials are recorded in our longitudinal database. In addition, we observe when firms are reducing or increasing their workforce (or exiting the market altogether) over a time window of sufficient length; this is used as a proxy to assess the risk of job termination for anyone individual currently at work. Job quality, instead, cannot be directly observed, and is problematic to ascertain. It is, however, suggested that small firms often offer more pleasant working conditions than large firms *(but Winter-Ebner 2001 et al. do not find support for this)*: the smaller environment makes it easier to develop friendly relations with colleagues, the style of supervision may not be as rigid as in large organizations, tasks may not be as repetitive, working hours may often be more flexible. Thus there could be a negative association between firm size and

[6] Cfr. B. Contini and R. Revelli (1997)

[7] This prior cannot find but mild support in closed panels like ours: at the aggregate level there are equilibrium conditions of the firm size distribution that must obtain. If worker flows from small to large firms were steadily much larger than flows in the opposite direction, the observed firm size distribution would rapidly degenerate. It does not because each year newborn small firms enter the market, usually employing young workers. But in a closed panel these flows are not obervable.

job quality, and this may help to explain why such sizeable job-to-job flows are observed from larger to smaller firms even when the pay differential is modest or negative, or when there is no indication that one's job is at risk of layoff or termination.

Given these premises, the following are the questions we intend to answer:

1 Are there sizeable differentials between stayers and movers ?
2 Does firm size affect wage growth for movers (across firms of different size) and stayers as much as it determines cross-sectional wage level differentials ?
3 Are frequent movers better off than one-time movers ?
4 Do intervening unemployment spells negatively affect wage growth ?
5 Are there downsizing and redeployment effects on wage growth ? Are there significant differences between what we identify as voluntary and involuntary job changes ?

Wage levels and growth rates among movers and stayers

Tables 12 contains means and standard deviations of monthly wages of movers and stayers in 1986 and 1991. Average wage growth 1986-91 is 60%. Italy's consumer price index increased by 32 p.p. between 1986 and 1991. Thus real wage growth in our sample is quite substantial, almost 30% in the 5-year observation period. *DOVE SI VEDE ??????*

QUI HISTOGRAMGS MOLTO MEGLIO CHE TABELLACCIE

Table 12 Monthly wages in 1986 and 1991 and wage growth rate 86-91 for movers and stayers by different firm trends

		Movers			Stayers			*Mean advant. STAY vs. MOVE*
		N	**Mean**	**Dev.std**	**N**	**Mean**	**Dev.std**	
	Wage 86	9641	1731.2	548.2	20526	1906.7	604.2	*+10.1*
	Wage 91	9641	2805.2	1138.3	20526	3042.3	1184.5	*+8.4*
	Wage growth rate	9641	6.1	4.2	20526	5.7	3.0	

The mean initial wage (1986) of the stayers is more than 10 p.p. higher than that of the movers (before moving) in all groups; the mean final wage (1991) of the stayers is 8.4 p.p. higher than the movers'; the standard deviation of the movers' growth rate is slightly higher than the stayers' (0.4 vs. 0.3).

Table 13 Wage growth by occupational status and age

AGE	OCCUPATION	STAYER	MOVERS
20-30	BLUE	0.56	0.60
	WHITE	0.77	0.90
30-40	BLUE	0.53	0.52
	WHITE	0.71	0.78
40-50	BLUE	0.51	0.51
	WHITE	0.64	0.67

Not surprisingly, workers with lower initial wages are encouraged to seek new jobs: the movers' initial wage is lower than the stayers' while their wage growth is marginally higher than the stayers' (especially at young age and for white-collars). On average, however, the stayers' mean wage at the end of the observation period, is still above the movers'. In addition, the movers' wage growth is

higher among the white collars, the differential decreasing with age. For the blue collars instead, characterized by flatter earning profiles, this occurs only among young workers.

2.4 Unemployment spells

Unemployment spells are recorded and show important differences between stayers and movers: 95% of the stayers never experiences unemployment (spell = 0); those who do are often workers who get rehired by the firm of origin after a long spell out of work, sometimes longer than 3 years. For over 50% of the movers we observe a direct job-to-job switch. About 10% experience unemployment spells lasting less than 1 year; the same percentage is out of work for 12-24 months and 24-36 months. Over 15% of the movers find a job after spending more than 3 years in unemployment. Not unexpectedly, long duration unemployment scars future *career*: this will be discussed in par. .

Tab. 11 Unemployment duration of movers and stayers

	M o v e r s		**S t a y e r s**	
Spell duration (months)	Frequency	%	Frequency	%
direct j-to-j = 0	4986	51.71	19552	95.25
1-3	49	0.51	0	0
4-6	370	3.84	19	0.09
7-12	632	6.56	56	0.27
12-24	1103	11.44	324	1.58
24-36	979	10.15	337	1.64
> 36	1522	15.79	238	1.16
All	9641	100.00	20526	100.00

3 MODEL SPECIFICATION

3.1 Open vs, closed panel estimation

Exploration of the database reveals that attrition is considerable and all but a random event: about one third of the workers present in 1986 drop out of the panel by 1991. Empirical evidence reveals that the vast majority of male dropouts end up in states with negative economic connotation (unemployment, shadow economy, rarely out of the labour force, except school reentrants), some move into self-employment, but for very few does the move turn out successful. Such transitions would introduce a vast amount of unobserved heterogeneity in the analysis, should we decide to opt for open panel econometrics. The principal aim of this paper, however, is to ascertain whether movers are better off than stayers over a relatively long observation period, and not on impact, as is done in many studies on job switching ***(esempi.in nota...)*** *The relevant "movers" for this type of analysis are those who do switch jobs across firms, definitely not those who become long term unemployed or labour market dropouts, or move to the fringe of the market. We do want to avoid the downward bias that such movements would introduce in our estimates.*

The sample includes, therefore, one observation for each individual in the panel. Thus, while there is no room for panel estimation with unobservable, time-invariant, individual effects, we cannot do away with initial conditions that could influence the wage growth in the five-year period 1986-91. Our choice for a proxy of initial conditions is the i-th individual's relative wage in 1986, i.e. the

ratio between w(i,86) and the average wage 1986 of all individuals belonging to the same cell (age x industry x skill level). To the extent that one's relative initial wage reflects also individual characteristics, this approach ought to yield satisfactory results[8]*. To these results, and to the consequences of possible endogeneity of such proxy, we will return after the presentation of the main estimates.*

1.1. Estimation

The equations object of estimation are [1] and [3], whose residuals are correlated. In fact:
$E[u\ (u+w)] = E(u^2) = var\ (u)$
if u and w are orthogonal, as can be safely assumed.
In principle, therefore, we have a case of seemingly unrelated regressions, The two equations have, by construction, identical regressors: thus OLS will yield the same point estimates as SURE, the latter being, however, more efficient.

Identification

We made the point that by separately estimating equations [1] and [3], we have conditions for identification: the coefficients b' associated to individual characteristics X^I ought to be zero in equation [2], explanatory of the wage growth attributable to firm effects only. Thus, we expect the estimates of $(B^I + b^I)$ to be approximately equal to B^I, implying $b^I = 0$.

F-tests of the above null hypothesis are performed on the coefficients of all the X^I variables (10 in all) estimated in equations [1] and [3], in six different specifications (3 age-groups x 2 occupational categories). Only in one, of sixty replications of the test, is the null rejected; in three cases acceptance is at the margin of significance. We deem this to be a good test of identification[9].

3. THE MODEL

Let W(i;jk) be the wage change (1986-91) for the i-th individual who has moved from firm-type j (in 1986) to firm-type k (in 1991). If he/she is a stayer, then j=k. Firm-types refer here to size and industry.

If firm characteristics have an impact on wage differentials, the following decomposition is of interest:

$$W(i;jk) = \left(\frac{w_{91}(i;k)}{w_{86}(i;j)}\right) + \left(\frac{\overline{w}_{91}(k)}{\overline{w}_{86}(j)}\right) - \left(\frac{\overline{w}_{91}(k)}{\overline{w}_{86}(j)}\right) - 1 \qquad [I]$$

where

[8] Another approach to the problem is that of Stewart, Swaffield (1998). To solve the problem of sample selection bias due to correlation across time between the unobservable, they use extra variables as instruments for the selection probability into the initial state.

[9] A complete set of results is available on request.

$\frac{\overline{w}_{91}(k)}{\overline{w}_{86}(j)} = \hat{w}(jk) =$ mean wage growth 1986-91 observed across firm-type j (origin) in 1986 and firm-type k (destination) in 1991 has been added and subtracted to the expression for the wage change. The decomposition then reads as follows:

$$W(i;jk) = \left[\left(\frac{\overline{w}_{91}(k)}{\overline{w}_{86}(j)}\right) - 1\right] + \left[\left(\frac{w_{91}(i;k)}{w_{86}(i;j)}\right) - \left(\frac{\overline{w}_{91}(k)}{\overline{w}_{86}(j)}\right)\right] = \hat{w}(jk) + w'(i;jk) \qquad [II]$$

where :
$\hat{w}(jk)$ is the mean wage growth 1986-91 observed across firm-type j (origin) in 1986 and firm-type k (destination) in 1991;

$w'(jk)$ = wage premium (or loss) accruing to the i-th individual in moving from firm-type j to firm-type k, i.e. the extra-pay that individuals with certain characteristics are able to gain (or lose) over the mean wage change $\hat{w}(jk)$.

That is to say:

"total" individual wage growth 1986-91 = $W(i;jk) = \hat{w}(jk) + w'(i;jk) =$
=mean wage growth across firms of origin and destination (firm effect) + wage individual premium

The total wage growth associated to a move from firm-type j to firm-type k is given by the sum of two elements: the mean pay differential between the firm of origin in 1986 and that of destination in 1991 **(firm effect)**, which does not depend on the workers' individual characteristics, and the **individual premium** that reflects various characteristics of the match, i.e. determined by the interaction of both workers' and firm's attributes.

The w'(jk) component may be retrieved from the databases (from average pay in 1986 and 1991 for different skill levels - blue and white collars - and firm-types, however defined). By difference w(i;jk) - w^(jk), we then obtain w'(i;jk).

w'(i;jk) may be expressed as a linear function of X exogenous regressors of various types and residuals:
[1] $w'(i;jk) = B^I X^I + B^F X^F + B^Z X^Z + u$
where the superscripts I, F, Z denote regressors associated respectively with individual characteristics, firm characteristics, and general macro-indicators.

Likewise, with no loss of generality, we may think w^(jk) as written as another linear function of the same X regressors and residuals:

[2] $\hat{w}(jk) = b^I X^I + b^F X^F + b^Z X^Z + w$

where all the b^I (reflecting purely individual characteristics) will be equal to zero.

"Total" individual wage growth is written as the sum of two linear functions of the same regressors:

[3] $w(i;jk) = (B^I + b^I) X^I + (B^F + b^F) X^F + (b^Z + B^Z) X^Z + (u + w)$

We perform separate estimation of both [1] and [3]. From the estimates of the three sets of (B + b) and B, we shall then obtain indirect estimates of b. The latter provide additional conditions for identification. In particular, we expect the estimates of $(B^I + b^I)$ to be approximately equal to B^I, implying $b^I = 0$.

1.2. Estimation

The equations object of estimation are [1] and [3], whose residuals are correlated. In fact:
$E[u\ (u+w)] = E(u^2) = var\ (u)$
if u and w are orthogonal, as can be safely assumed.
In principle, therefore, we have a case of seemingly unrelated regressions, The two equations have, by construction, identical regressors: thus OLS will yield the same estimates as SURE.

1.3. Identification

By separately estimating equations [1] and [3], we have conditions for identification: the coefficients b' associated to individual characteristics X^I ought to be zero in equation [2], explanatory of the wage growth attributable to firm effects only. Thus, we expect the estimates of $(B^I + b^I)$ to be approximately equal to B^I, implying $b^I = 0$.

F-tests of the above null hypothesis are performed on the coefficients of all the X^I variables (10 in all) estimated in equations [1] and [3], in two specifications, one for each occupational category. Only in one in twenty replications of the test, is the null rejected; in three cases acceptance is at the margin of significance. We deem this to be a good test of identification[10].

2. MODEL SPECIFICATION

We must take an additional step in order to have a model specification coherent with the quality of the data at hand.
In principle X^I and X^F reflect individual and firm characteristics. Are our data adequate to yield a satisfactory representation of X^I and X^F ?

(X^I): education is not observable. As already pointed out[11], we do not believe this to be a major problem, with the possible exception for young workers. We find indirect confirmation of this hunch later on.

(X^F): our firm data are rich in some respects (industrial classification, geography, employment and earnings history by skill level and size, firm age, entry and exit flags), and

[10] A complete set of results is available on request.
[11] Bonjour Pacelli (1998) tested on Swiss data the size and the direction of the bias that happen when age is used as a proxy for education and experience. They find that using age leads to a small bias for male and full time working female. The bias is bigger for all female (who are excluded from our analysis) due to the effect of part time female. Hartog and Van Ophem (1994) find that education has little or no effect on wage growth in relation to mobility.

weak in others. In particular, we have no data on performance, market power, financial structure.

In the estimation of the individual premium [3], we take out firm effects from total wage growth w(i;jk) by subtracting $\left[\frac{w91(k)}{w86(j)}\right]$. The ratio $\left[\frac{w91(k)}{w86(j)}\right]$ is constructed controlling for: 1-digit industry, firm size, geography, skill category. We are unable, however, to control for performance and market related variables. Thus, their impact cannot be removed from the individual premium w' (i;jk). This affects also w^(j,k), calculated as difference, which denotes the firm effect. Given the structure of our data, it is probably safer to refer to the latter simply as "residual effect", rather than "firm-specific effect" as would be appropriate with ideal data[12].

Let us now turn to the specification that we intend to estimate. Estimation of [1] and [3] is performed on two skill groups (Blue and White collars). The regressors are as follows (all the * are 0-1 dummies) :

X^I regressors (14)

Activated for movers and stayers

INEQ86	initial (1986) relative wage (proxy for initial conditions)
AGE and AGE-SQUARE	Age of each person
UN-MOV	unemployment spell between jobs (in months), movers
UN-STA	unemployment spell between jobs (in months), stayers
MOV-2 (*)	2 job changes in the observation period
MOV-3 (*)	3 job changes in the observation period
MOV-4 (*)	more than 3 job changes in the observation period
DAV (*)	occupational upgrading (from blue to white collars and from white to manager occupation)
DZO (*)	geographical mobility
DZO*DOWN (*)	geographical mobility for workers belonging to firms in group 4 or 5 (see par. 2)
SET01 (*)	intersectoral mobility (from manufacturing to services)
SET10 (*)	intersectoral mobility (from services to manufacturing)
SET01*DOWN (*)	intersectoral mobility (from manufacturing to services) for workers belonging to firms in group 4 or 5 (see par. 2)
SET10*DOWN (*)	intersectoral mobility (from services to manufacturing) for workers belonging to firms in group 4 or 5 (see par. 2)

X^F regressors (49)

Activated for movers and stayers (12) :

R1 --> R8 (*)	industry (firm of origin)
SMALL - LARGE (*)	firm size 1986
NOV-NES-SUD-ISO (*)	4 geographical dummies (firm location)

Activated only for stayers (1):

[12] The problem may be seen as follows. Let F be a vector of firm performance and market related variables that affect w^(j,k). The system [1] - [3] is then written for short:
[1'] w'(i;j,k) = B X + u
[2'] w^(j.k) = b X + c F + w
[3'] w (i;j,k) = (B + b) X + c F + (u + w)
If F is not available, it will be omitted from [3'], and the OLS estimate of (B + b) will be biased, converging to (B + b) + c [cov (X, F) / var (X)]. Thus the firm effect b, retrieved from [1'] and [3'], will be itself biased, unless X and F are uncorrelated.

DOWN-STA (*)	Firm has had experienced a strong decline in employment in the period (firm in group 4)

Activated only for movers (36):

DM1 --> DM9 (*)	job-change across firm size **(manufacturing)**
DS1 --> DS9 (*)	job-change across firm size **(services)**
DM1 --> DM9 * DOWN	job-change across firm size (manufacturing) for workers belonging to firms in group 4 or 5
DS1 --> DS9 * DOWN	job-change across firm size (services) for workers belonging to firms in group 4 or 5
DM1---> DM9 * GF	same as above * flag denoting job changes of at least 3 workers from same origin to same destination
DS1----> DS9 * GF	same as above * flag denoting job changes of at least 3 workers from same origin to same destination

DOWN is a 0-1 dummy activated if the firm of origin had a strong decline in employment or closed in the 86-91 period. Firm belonging to group 4 or 5 as described in §2.
GF is a 0-1 dummy activated for job changes involving at least 3 workers from same origin to same destination (reflecting workforce redeployment following corporate transformations, mergers and acquisitions).

All the above variables are self-explanatory. For each branch 9 dummies are associated with job-changes involving movements across firms classified by size (DM1 - DM9 for manufacturing; DS1- DS9 for services). We distinguish small firms (< 20 employees), medium firms (20 -200 employees) and large firms (> 200 employees). Thus we have 3 x 3= 9 "types" of job-change. The associated variables are activated as follows:

$$D(i; jk) = \begin{cases} 1 & \text{i-th individual moves from firm-type j to firm-type k} \\ & (j, k = 1,2,3) \\ 0 & \text{otherwise} \end{cases}$$

If the i-th individual is a "stayer" in the observation period, none of the D dummies are activated. In addition, we use the grouping of firms proposed in par. 2 in order to catch the effect of a closeout or drastic downsizing of the firm of origin on job-changes. All the D variables above are interacted with a dummy (DOWN) activated if the firm of origin has either closed down or drastically reduced its work-force in the 1986-91 period, and with a dummy GF reflecting collective job redeployment.

Additional controls are provided by MOV-2 through MOV-4, which we place among the X(I) regressors: frequent job changes may reflect a positive attitude towards job search, and have a positive impact on wages. There could be, however, decreasing returns beyond a certain amount of job-switching, which our specification allows to catch.

Spells of unemployment (UN-MOV; UN-STA) may be observed for movers between successive jobs, and for stayers if their tenure is interrupted. The longer the spell, the higher the reduction of one's earning potential as a consequence of loss of visibility in the job market and/or loss of working ability.[13]

3. THE RESULTS

3.1. Job switches across firm size

[13] In principle, we could observe a humped-shape effect of its length on wage growth: the longer the search period, the higher the chance of finding a good match, up to a point where the loss of visibility / working ability overtakes the effect of the search effort. This would require a squared term as an additional regressor, which we have not, however, included in the estimation reported here.

We discuss firstly the impact of firm-size on job changes and associated wage growth.
Here below four summary tables (A.1 -A.4) are displayed: each contains three matrices of OLS regression estimates of the coefficients associated to job-switches by firm size (activated only for movers; the stayers acting as benchmark). The top matrix (denominated "total") reports the (B + b) coefficients of the 9 dummies related to the switches across firm size, estimated on [3]. The middle matrix (denominated "premium") reports the same 9 B coefficients estimated on [1]. The bottom matrix (denominated "firm residual") reports the 9 coefficients retrieved as differences of the two above, only when both are significant. Elsewhere, only the signs of the difference are shown.

The results and interpretation of the DOWN and DF interactions are displayed and discussed in par. .....

Moving **across the columns** of each 3x3 table (from left to right) denotes the effect of a job switch ending in firms of increasing dimension. Moving **across the rows** (from high to low) catches the effect of a job switch originating from firms of increasing dimension. Thus in the North-East corner above the diagonal we have job-switches from small to large; in the South-West corner from large to small.
Blank entries denote no significant differences between the wage growth rates of movers and stayers (benchmark).

TOTAL WAGE GROWTH (equation 1)

BLUE COLLARS MANUFACTURING	small	medium	large
small	0	12++	22++
medium	-5+	4+.	7++
large	-18++	-5	0
BLUE COLLARS SERVICES			
small	-2	11++	33++
medium	-5	0	0
large	-35+	-33++	9+
WHITE COLLARS MANUFACTURING			
small	-11	12+	33+
medium	0	10++	18+
large	27+	23++	14+
WHITE-COLLARS SERVICES			
small	0	14+	62++
medium	0	11+	0
large	28+	10+	10

INDIVIDUAL PREMIUM (equation 3)

BLUE COLLARS MANUFACTURING	small	medium	large
small	12+++	6+	0
medium	12+++	3+	-10+
large	0	0	-9+
BLUE COLLARS SERVICES			
small	7++	4	0
medium	12+	5	-25++
large	0	-24+	0
WHITE COLLARS MANUFACTURING			
small	19+	17+	22
medium	26++	8+	0
large	49++	21+++	0
WHITE-COLLARS SERVICES			
small	35+++	10+	46++
medium	38+++	15++	-11
large	81+++	0	0

Significance of the coefficient are indicated as follows:
+++ significant at 99%
++ significant at 95%
+ significant at 90%
marginally significant

We emphasize the following :

(i) the decomposition ( ) yields qualitatively different results between manual workers and white-collars: while the former often loose after a job change, and seldom succeed in "selling" their individual skills and personal characteristics, the latter often improve their earnings position from job changes, and, in addition, gain an individual premium. In other words, wage growth (or loss) for manual workers is largely a consequence of firm-based wage policies, more than individual characteristics. For white-collars, instead, firm-based wage policies are not binding and individual characteristics often rewarded..

(ii) consequently, we find significantly larger coefficients in the white-collars' regressions (A.2 - A.4) than in the blue-collars' (A.1 - A.3). This simply means that mover-stayer differentials are larger among white-collars: this is expected given the larger variance of

earnings of the latter (both cross-sectional and longitudinal), and the higher possibilities of climbing the hierarchical ladder.

More specifically:

TOTAL wage growth (top matrix)

BLUE / job-switches from small to large firms (NE corner) yield positive coefficients, i.e. significant mover-stayer earning differentials. When job-switches occur in the reverse direction (SW corner: from large® to smalle® firms), wage growth is negative, i.e. job switches penalize the movers (A.1 and A.3). This pattern is a straight consequence of the strong correlation between earnings and firm size, and of the predictably modest career profiles of blue-collar workers.

WHITE / (A.2 and A.4) : job-switches in either direction often yield positive differentials relative to stayers in all age-groups and regardless of the size of firms of origin and destination.

INDIVIDUAL PREMIUM (middle matrix)

BLUE
Here we find a somewhat different pattern among the blue-collars: mainly negative (but not all) coefficients associated to moves from small to large firms (NE-corner); mainly positive for moves from large to small (SW-corner).
Consider first the N-E corner of the PREMIUM tables. As we have seen in, blue-collars who move from a small firm to a large one gain from the change compared to stayers. In addition they gain also in terms of expected job length. On the other hand, in view of the fact that average blue collars' wages paid by large firms are higher than those paid by small firms, independently of any individual characteristic (the firm effect), the premium associated to individual skills and personal endowment may turn out, at times, negative.
Let us now turn to the SW-corner. Here we have manual workers who switch from a large firm to a smaller one, and, on average, suffer a wage loss (the TOTAL estimates). Why should they move at all, considering that they also run the risk of facing a shorter tenure ? One possibility, which we shall discuss at length in par….., is that they may be, as it were, forced to make the change. Aside from this, however, the estimated PREMIUM is often positive and quite sizeable (at times we even find the individual premium to be larger than a positive TOTAl wage growth). Quite clearly, these movers succeed in having their individual expertise and skills recognized in the job change, inspite of firm wage policies that generate a negative effect.

WHITE - Individual skills and endowment matter, instead, for the white-collars, adding to the positive outcome estimated in the TOTAL decomposition. Here too, this is particularly evident in the S-W corner and on the diagonal, associated to job changes originating in larger firms and ending up in smaller ones: the premium coefficient is often higher than the estimated (positive) total wage growth. Job changers who move into a smaller enterprise may be risking a shorter job tenure, but they appear to be well compensated by a substantial improvement in their earnings status, reinforced by the premium recognized to their personal characteristics. The magnitude of such premium is surprisingly high, especially in the service industries. These moves appear to be the result of voluntary job-seeking while on-the-job by individuals endowed with valuable skills and experience; and free from the threat of being dismissed or transferred in years of recession.
In few cases the estimated premium is zero (never when the job change originates or ends up in a small firm), and only in one (cell 2,3 – **tab. serv**) do we find it negative (= -11): in this particular

case, however, collective redeployment yields the necessary explanation, *as will be seen in par (diventa + 24).*

The magnitude of the firm effect, difference between total wage growth effect and the individual premium, cannot be judged independently from the significance of its components. We, therefore, display figures only when both are significant. When either fails to reach significance, we show only the sign of the estimated firm effect. The signs show a pattern that is common to all four tables of firm effects and age-groups: all are positive above the main diagonal (N-W corner); all are negative below (S-E corner). The F-test on the joint significance of these signs above and below the diagonal passes with flying colors. This result is not unexpected: the wage growth attributed only to firm effects is positive when job changes take place from smaller to larger firms, controlling for 1-digit industry and geographical location; it is negative when the direction of job change is reversed. Here again, the wage - size positive correlation overshadows all other effects.

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Table 17 Movers: wage gains due to job switches involving industry and geographical change

	BLUE-COLLARS	WHITE-COLLARS
From MANUFACTURING to SERVICES (no geographical change)	0.06 *	0.17 **
from SERVICES to MANUFACTURING (no geographical change)	0.04 *	0.09 *
GEOGRAPHICAL CHANGE (only)	0	0.03

The data reveal an extra advantage for movers who change activity sector, slightly higher if the switch is from manufacturing to the service industries compared to the opposite switch; higher for the white-collars than the blue-collar workers.
Geographical change (across macro-regions: North, Centre, South and Islands) carries a very modest wage gain only for the white-collars.

4.3 Unemployment spells

One's absence from the panel between two employment spells indicates - with high probability - periods spent in unemployment [14]. The length of such spells has a slight, but nonetheless

[14] Unemployment cannot be recorded with certainty in our data-base: self-employment, out-of-the-labor force including retirement (for those in eligible age), moves in the public sector (following a tenured hire), are all compatible with attrition. The observed frequency of moves into self-employment is a little over 7% of all separations; that of entering the irregular economy, obviously unknown, may be high expecially in the South, but mainly for those who have never been regularly employed before (which is not the case with a closed panel like ours). Notice a similar observation in M.C. Burda and A. Mertens (2001): in Germany only 80% of all displaced workers are found in socially insured employment 4 years after displacement.

significant, impact on total wage growth *(independent of age ?)*. The reduction of wage growth at the end of the observation period is only 0.1 p.p. for each month spent in unemployment for the blue-collars, movers and stayers alike. *One possible explanation for such a slight impact is that skilled manual workers (MA NON SONO TUTTI SKILLED QUI) are always in high demand, regardless of the business cycle: many have been forced into early retirement by restructuring businesses, but few move into unemployment. For the unskilled, instead, there is never any real skill obsolescence due to unemployment*. A six-month unemployment spell between two successive jobs would induce a reduction of wage growth by 0.6 p.p. Not surprisingly, the negative impact of unemployment spells is higher for the white-collar movers, about - 0.4 p.p. for each month in unemployment, adding up to - 2.4 p.p. for a six-month unemployment spell, and – 4.8 p.p. for a one-year spell. No impact, however, emerges for the white-collars who go through unemployment but get rehired in the same firm at the end of the spell. [15]

These results confirm the hypothesis that the careers of those who remain blue collars all their life are flat and unaffected by spells of unemployment, provided they are back on the job by the end of the observation period. On the other hand, and in line with explanations in term of specific human capital, a career interrupted by periods spent in unemployment does have an impact on the earning profiles of the white collars.

Table 18 The impact of intervening unemployment spells on wage growth (in p.p.)	**1 month**		**6 months**	
	Movers	**Stayers**	**Movers**	**Stayers**
BLUE-COLLARS	- 0.1	- 0.1	- 0.6	- 0.6
WHITE-COLLARS	- 0.4	0	- 2.4	0

4.4 Frequency of job changes

Frequent job switching could be a signal of intense search behaviour, and therefore associated with higher wage growth. On the other hand, too many job-changes could reflect the precariousness of certain positions, characterised by a great deal of uncertainty. (O SCARSA PERSEVERANZA...)

Estimation provides interesting insight also within age groups: among the blue-collars there is no visible impact at any age. Among the white-collars, instead, a certain amount of job-switching has positive effect on wage growth, but only among people in age-groups 1 and 2 (i.e. less than 40 yrs. old): two moves do better than one; three do better than two; but four (or more) flattens the wage profile back to the level of the stayers. Above 40 years of age the positive impact is modest with two moves (6 p.p.) and disappears altogther with more frequent job changes.

Table 19 Frequency of job changes: impact on wage growth

BLUE-COLLARS	2 MOVES	3 MOVES	4 > MOVES
age 20 – 30	0	0	0
age 30 – 40	0	0	0
age 40 – 50	0	0	0
ALL AGES	0	0	0
WHITE-COLLARS			
age 20 – 30	0.08 *	0.16 *	0
age 30 – 40	0.11*	0.12	0

[15] Our estimates are lower than those reported by S. Nickell, P. Jones, G. Quintini (2002) for the U.K. Estimated (hourly) earning losses amount to 10-20% during the first year from rehiring after the first unemployment spell. As in Italy, losses tend to be higher, the higher the skill level of those involved.

age 40 – 50	0.06	0	0
ALL AGES	0.09 *	0.14 *	0

4.5 Initial conditions (ETEROGENEITà ??????)

Wage growth in the period 1986-91 may be influenced by initial conditions: unobservable, individual effects like intellectual endowment, entrepreneurial attitudes, risk propensity, and the like. A reasonable proxy is the i-th individual's relative wage in 1986 (INEQ86), i.e. the ratio between w(i,86) and the average wage 1986 of individuals belonging to the same cell (age x industry x skill level). In principle, one's relative initial wage ought to reflect the relevant individual characteristics.[16]

There is, however, a problem of potential endogeneity of this proxy: 1986 seldom coincides with the beginning of one's working career (safe for very few young workers). Thus, endowed individuals may have a higher initial relative wage, and INEQ86 may be correlated with the residuals. Estimation via instrumental variables could be an appropriate strategy *(are there appropriate IV's ?).*

An alternative strategy, which we follow here, consists of estimating two versions of the wage growth equation: one including INEQ86 among the regressors, the other excluding it. Consider the following outcome: (1) the coefficient estimates are very similar in the two versions ; (2) the overall fitness improves only marginally when INEQ86 is included among the regressors; (3) the residuals are nearly identical. If (1), (2) and (3) are verified together, the implication is that initial conditions do not matter, and that simultaneity bias is not much of a problem here.

The following table displays the outcome of this exercise: we report here also the equations estimated separately for each age group, as initial conditions – not surprisingly - appear to be more relevant at young age than later. Recall that a negative coefficient for INEQ86 is expected by construction as w(i,86) is the denominator of the dependent variable:

Table 20 OLS regressions of wage growth with proxy for initial conditions (INEQ86)

	Mean	#	Coeff. INEQ	Std. Err.	$R^{2\ with}$ INEQ	$R^{2\ without}$ INEQ
BLUE C. age 20-30	1.58	7533	-0.659	0.018	0.227	.068
WHITE C. age 20-30	1.82	2785	-0.236	0.032	0.144	.102
BLUE C. age 30-40	1.53	7000	-0.355	0.016	0.132	.053
WHITE C. age 30-40	1.73	4018	-0.042	0.02	0.142	.086
BLUE C. age 40-50	1.51	5882	-0.323	0.016	0.111	.039
WHITE C. age 40-50	1.65	2949	-0.075	0.019	0.114	.047
BLUE C. all ages		20415	-0.426	0.009	0.157	0.069
WHITE C. all ages		9752	-0.086	0.012	0.144	0.088

[16] Farber and Gibbons (1991), among others, find a strong correlation through time between wages and proxies of ability.

Table 21 Correlation between residuals of OLS regressions estimated with and without proxy for initial conditions (INEQ86)

	Correlation coefficient
AGE 1 - BLUE C.	0.920
AGE 2 - BLUE C.	0.961
AGE 3 - BLUE C.	0.970
ALL AGES – BLUE C.	0.959
AGE 1 - WHITE C.	0.991
AGE 2 - WHITE C.	0.999
AGE 3- WHITE C.	0.999
ALL AGES – WHITE C.	0.995

- the INEQ86 coefficient is significant in all the estimated equations, much larger (in absolute value) in the blue-collars' equations than in the white-collars'. The wage growth of white-collar workers is weakly conditioned by initial pay, while that of the blue-collars is strongly conditioned.[17]
- there are interesting differences across age groups: among young workers (20-30, age-group 1) the INEQ86 coefficient is over twice as large as among older workers, for both white and blue-collars;
- the coefficient estimates are almost identical in the two versions of the white-collars' equations. Among the blue-collars some differences are found in the coefficients of industry dummies and firm-size. They are, instead, very slight for the dummies that catch the effect of inter-firm mobility;

- the correlation of residuals with and without INEQ86 are very high in all estimated equations: the order of magnitude is 0.92-0.97 in the blue-collars' equations, and 0.99 and over in the white-collars'.

All of the above suggest that initial conditions have a negligible impact on the wage profiles of the white-collars. They do, instead, have a modest impact on the blue-collars' profiles. In either case, the influence of initial conditions is slightly higher at young age[18].

If initial conditions reflect individual endowments (including educational attainment), then one might expect them to show up especially among white-collars, whose careers have more prospects and variability than those of people confined to manual jobs most of their life. This does not appear to be the case in Italy, for reasons related to the following institutional features: (1) the jobs that we observe are all "regular" working positions, for which social security contributions are paid in full by the employers; (2) the vast majority of these contracts are subject to collective bargaining agreements. The main implication being – for example - that a university graduate in chemical engineering with high honours will be hired at the same conditions as an individual who has barely made it through college in whatever discipline. Their careers will obviously begin to diverge at some point, but a five-year horizon is probably not long enough to comprise this point.[19] Our story does not imply that the initial employment probabilities will be the same for the two characters: in

[17] A different, legitimate, interpretation is that INEQ86 fails to catch the "right" individual characteristics of people initially hired in white-collar positions;

[18] We are unable, for the time being, to detect the influence of initial conditions on those who achieve a career advancement (from a blue-collar to a white-collar position) in the five-year period under observation.

[19] In the near future we shall be able to replicate estimation on a ten-year observation period (1986-96), where it is reasonable to expect significant improvements over the results already at hand.

Italy, as elsewhere, a chemical engineer has better chances than any college graduate in modern literature. But our study is on transitions of people already in employment, not on transitions from school to work.[20]
On the contrary, a young man with a recognized vocational training diploma will be hired as a qualified blue-collar at a higher pay grade than an unskilled individual. Thus, initial conditions do matter for him, and his 1986- relative pay indeed reflects them. This is in line with what is known about the career profiles of manual workers in Italy, highly predetermined by collective bargaining agreements.[21]

2.2 Recognizing the downsized workers

We now turn to the impact of downsizing on job switches. In Italy the 1986-91 period was characterised by a vigorous expansion til 1989, followed by a slow worsening of general economic prospects, which led into the 1991 recession. Throughout the whole period many businesses, especially the large ones, went through restructuring processes, reduced activity and outsourcing, often leading to downsizing.
For our purposes, therefore, an important question relates to the cause of job-change and its outcome: is it voluntary or is it forced by the events? In general we do not know when job-changes are associated with voluntary quits or when they are consequent to firings.[22] We do, however, have information that helps to recognize "collective" layoffs, associated to downsizing of restructuring firms, and / or to redeployment processes following corporate transformations.
The difference is important: is the job change the end result of a process of job-search in which both workers and firms become involved, or is it – as it were - "imposed" on the workers by outside forces? The latter is not at all an unlikely event: since the mid Eighties mergers and acquisitions have frequently taken place among business firms of all sizes, and workers relocated according to the terms of such agreements. Moreover in the course of recent episodes of industrial restructuring, large employment reductions are negotiated between management and unions. The outcome of the bargaining table is, at times, an agreement to help the re-deployment of a consistent fraction of the work-force to other firms, not necessarily belonging to the same financial group. In such a case, the most able workers may refuse re-deployment and do the job-shopping on their own, but many will take whatever is offered to them. Workers who fear the risk of being downsized with no hope of being redeployed by negotiated agreement, will engage in early job-shopping in order to pre-empt a likely layoff. We expect these workers to take wage losses compared to other job changers. In contrast, those who are automatically redeployed are less likely to loose in the change.

We deal with the downsizing issue by looking at the five-year trend of employment in the firms from which the job-changes originate, and classify them in five groups as follows:
1. Expansion, if between 1986 and 1991 the firm has increased its workforce;
2. Constant if no significant variation has happened in the firm employment;
3. Decline if in the 86-91 period the firm has reduced employment from 10 to 40%;
4. Strong decline if the decline is by more than 40% of the workforce on payroll;

---

[20] This is not surprising: in Italy economic returns to education are usually found lower than in many countries of the industrialized world (Brunello and Miniaci (1999) report estimates between 4.8 and 5.6%): one explanation may, in fact, be provided by the nature of collective bargaining institutions. *PERVASIVE NATURE OF CONTRACTUAL PAY IN ONE'S CAREER*

[21] B. Contini (ed.), Labor mobility and wage dynamics in Italy, Rosenberg-Sellier (2002).

[22] The distinction between quits and layoffs is always very hard, not just in our study. Neat in principle, often useless in practice: individual firings are seldom revealed even in the course of interviews, as they are perceived to carry a stigma. Collective layoffs, instead, are often recognizable, even more so when followed by public measures aimed at easing the transition. Unfortunately, this difficulty is seldom acknowledged in much of the literature, and the consequent error-in-variables bias very often neglected.

5. Closeout if the firms has closed in the period.

We consider "downsized workers" all those who leave a firm that has either closed down, or experienced a drastic employment cut in 1986-91.
A different strategy is adopted in order to single out job changes associated to workforce redeployment. Following the merger between firms A and B into a new entity C, groups of workers previously on A's and B's payrolls will be transferred directly to the new payroll of C and such collective moves – same origin and destination for all the group members - can be observed in our panel.

Table 2 Movers and stayers by firm of origin

	Expanding	Constant	Declining	Strong decline	Closing	Total
Movers	24.7	9.6	13.1	15.9	36.7	100
Stayers	52.9	23.5	20.2	3.3	0	100

A dramatic 70% of the observed movers are "downsized" according to our definition, i.e. they originate from firms that have drastically reduced their workforce or closed down altogether. On the other hand almost one fourth of the movers have left expanding firms. Not surprisingly, three fourth of the stayers belong to firms that have either expanded workforce or showed no sizeable change. Redeployment involves 18% of the movers, many of which as a consequence of being downsized.

Table 3 Downsized workers by age

	Age 20 –30	Age 30 – 40	Age 40 – 50	Sample size
Movers	39.0	34.1	26.9	4751
Stayers	28.1	33.7	38.2	683

A slight majority of the downsized workers is in young age, while the stayers, i.e. those who get retained inspite of the employment cuts, are somewhat older. Table 4 suggests that the downsized workers are often less skilled than the average within their skill group: their earnings distribution is dominated by the overall distribution both in 1986 and in 1991.

Table 4 Downsized workers by skill group and percentiles in the relative wage ratios in 1986 and 1991

	Sample size	Mean	P25	P50 =median	P75
1986					
Blue collars					
Downsized	3904	0.965	0.836	0.944	1.063
All	20415	1.000	0.856	0.973	1.118
1991					
Downsized	3904	0.957	0.797	0.920	1.063
All	20415	1.000	0.829	0.956	1.129

1986					
White-collars					
Downsized	1530	0.962	0.760	0.900	1.099
All	9752	1.000	0.805	0.958	1.137
1991					
Downsized	1530	0.963	0.711	0.882	1.133
All	9752	1.000	0.761	0.932	1.156

TOTAL WAGE GROWTH WITH REDEPLOYMENT AND JOB DISPLACEMENT EFFECTS

	SM	**A**	**LL**		**ME**	**DI**	**UM**			**LA**	**R**	**GE**	
BLUE	**w-growth**	displ. effect	re-depl.		w-growth	displ. effect	redeploy	**displ & re-dep**		w-growth	displ. effect	redeploy	**displ & redeploy.**
manufacturing													
S	0				12					22		9	
M	-5	-10			4		15			7			
L	-18	-33			-5	-16				0	-11	-10	13
services													
S	-2				12					33			
M	-6				0					0			
L	-36				-33					0	-32		
WHITE	w-growth	displ. effect	redeploy		w-growth	displ. effect	redeploy			w-growth	displ. effect	redeploy	
manufacturing													
S	-11	9			12					33			
M	0				10					18	3	-4	
L	27				23	5	-7	24		14	6	5	
services													
S	0				14					62	35		
M	0	-22			11					0		24	
L	28	-62			10					10			

The impact of job displacement and redeployment is caught by dummy variables (DOWN and DG respectively for downsizing and redeployment) appropriately interacted..with the 0-1 job-change D(i;k,j) variables for the movers. In addition, we introduce DOWN-STAY associated to stayers. Estimation is performed on equation 1 (total wage gropwth). Thus the coefficients D(i;k,j)*DOWN denote the wage loss that people suffer, whether moving or staying, attributable to

the fact that they are on payroll at ailing firms. Likewise D(i;k,j)*DG denote the wage change due to redeployment, and D(i;k,j)*DOWN*DG the change associated with downsizing followed by collective redeployment.

When DOWN is activated, workers are - as it were - forced by the events to either move or stay. The estimates are reported in Table ZZZ: all coefficients (except one) are negatively signed, but we report only those above significance (t>2). There is no detectable effect on the earnings of stayers. The estimates strongly support the hypothesis that downsized workers – manual or white-collars - suffer severe wage losses after the job change. The story is different for workers who get re-deployed: in some cases they too suffer a wage loss, modest compared to downsizing events. At times, however, we observe a wage gain, especially when redeployment occurs in parallel with downsizing events (caught by the interaction DOWN*DG).