

## Chapter 6

# Sectors and Occupations of the New Jobs

In modern economies, deindustrialization shifts employment out of the manufacturing sector. A prominent argument expects that the decline of job opportunities in manufacturing forces displaced industrial workers to switch to the service sector (Cha and Morgan 2010: 1137). Since the skill profiles of manufacturing workers are likely not to correspond to the skill requirements of similarly qualified and paid jobs in the services, displaced industrial workers may experience an occupational downgrading and in the worst cases be reemployed in low-end service jobs (Iversen and Cusack 2000: 326–7; Bonoli 2007: 498).

It has, however, been shown for OECD countries that most job reallocation happens *within* and not *across* sectors (OECD 2009: 119–120). It is thus possible that the manufacturing sector is able to absorb workers displaced from this sector – and that the workers in our study may find new jobs in their pre-displacement sector. Such a scenario is particularly likely for Switzerland where the pace of deindustrialization over the period of our study was slow. In relative terms, manufacturing accounted for 19.3% of Swiss employment in 2008 – before the effects of the sub-prime crisis of the US were felt in Switzerland – and for 18.2% in 2012 – when the peak of the crisis was over.

The reemployment prospects in the same sector also seem good in Switzerland because the Swiss vocational education system is highly standardized within each sector. The skills acquired in vocational training are thus easily transferable to other firms within the same sector. Accordingly, we expect occupational transitions within the same sector to be smooth (hypothesis H4, see Sect. 1.4). If workers nevertheless change sector, we hypothesize that push rather than pull mechanisms are at work (hypothesis H5). We expect sectoral changes to be triggered by the experience of long-term unemployment rather than by transferable skills.

Even if the workers displaced from the five plants that we examine managed to return to the manufacturing sector, they may have been compelled to adjust to the structural development by changing occupation – a scenario that is likely in a context of rapid automation and technological change in the manufacturing sector and a subsequently increasing demand for high-skilled and decreasing demand for

low-skilled labor (Oesch 2013: 72). We examine this issue by first identifying the sectors and occupations in which workers were reemployed and then analyzing which factors potentially favor or hinder sectoral and occupational change.

## 6.1 Sectors

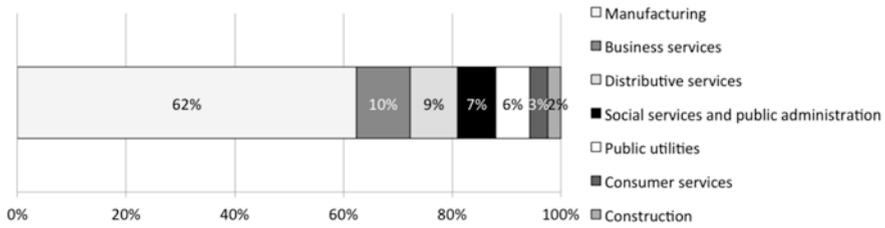
Workers' decision to apply for jobs in other sectors than their pre-displacement sector is subject to push and pull mechanisms. On the side of the push factors, difficulties in finding a job in the pre-displacement sector and a long spell of unemployment force workers to extend their job search to other sectors (Greenaway et al. 2000: 68; Gangl 2003: 206).

On the side of the pull factors, higher levels of education may make it easier to change into other sectors. In particular, general skills seem better portable to other sectors, and credentials act as a signal to future employers of the workers' ability to learn (Estevez-Abe 2005: 188; Fallick 1993: 317). In line with this idea, white-collar occupations – such as managers or clerks – may be more prone to sectoral change because the skills required in these occupations are transferable to other sectors (Gibbons et al. 2005: 704). Findings from a US study that compares wage losses of workers who switch or stay in their pre-displacement sector suggest that high tenure prohibits workers from switching (Neal 1995: 664). The explanation is that the returns on sector-specific skills are lower in other sectors than in the pre-displacement sector.

Women may be more likely to switch to the service sector than men for two reasons: first, there is an increasing demand in the service sector for social skills – skills which women tend to use at work more often than men – such as dealing with people or counseling and advising (Nickell 2001: 621). Second, jobs in the public sector tend to be more easily compatible with family life than jobs in the private sector, which often require geographical or time-related flexibility (Hakim 2006: 282). Overall we thus expect that women, and highly educated, short-tenured and white-collar workers are more likely to be reemployed in the service sector. At the same time, workers who experienced a long spell of unemployment may switch to another sector than their pre-displacement sector.

## 6.2 Sectors in Which Workers Were Reemployed

We start with a descriptive analysis of the workers' reemployment sectors. We measure the sector of employment based on the Swiss General Classification of Economic Activities (NOGA) on a 2-digit level which leaves us with 67 different reemployment sectors. Before displacement, the workers were employed, by definition, in the five manufacturing sectors of their plants which were the production of (i) machines, (ii) metal, (iii) plastic parts, (iv) chemicals, and (v) printing. On



**Fig. 6.1** Economic sector (NOGA) of reemployed workers. N=549

reemployment, workers most frequently went into manufacturing of machinery and equipment – where 11% of the reemployed workers were hired –, printing and reproduction of recorded media (10%), manufacturing of watches, computers, electronic and optical products (8%), manufacturing of fabricated metal products (8%), and manufacturing of food products (5%).

In order to simplify the analysis, we aggregate these 67 sectors into seven groups, distinguishing between (i) manufacturing, (ii) construction, (iii) public utilities, (iv) distributive services, (v) business services, (vi) consumer services, and (vii) social services and public administration.<sup>1</sup> Figure 6.1 presents the proportion of workers in the respective sectors. The key result is that nearly two-thirds (62%) of the reemployed workers went back into manufacturing. 10% were reemployed in business services, 9% in distributive services, 7% in social services and public administration, 6% in public utilities, 3% in consumer services and 2% in construction. If we pool the three categories manufacturing, construction and public utilities, we find that 70% of the workers stayed in the secondary sector and 30% switched to the tertiary sector.

The proportion of workers reemployed in the manufacturing sector in our study exactly corresponds to a recent study on displaced manufacturing workers in Finland (Jolkkonen et al. 2012: 88). But while our result has been produced in a context of economic crisis with stagnation of the Swiss manufacturing sector, the Finnish study was conducted in a context of economic growth.

Although not all workers managed to return to the manufacturing sector, 70% reemployment in the secondary sector seems to be a high proportion – especially if we consider that manufacturing accounts for less than a quarter of employment in Switzerland. This result thus indicates that job loss in the Swiss manufacturing sector does not necessarily force workers into low-qualified service jobs – so-called McJobs – but that they have robust prospects of returning to jobs in their pre-displacement sector.

<sup>1</sup> More precisely, these categories contain the following sectors: (i) Manufacturing, mining, agriculture; (ii) construction and civil engineering; (iii) energy, gas, water, sewerage, waste collection; (iv) retail trade, transport and postal services; (v) financial services, consultancy, legal and accounting activities; (vi) restaurants, hotels, recreational activities; (vii) social services and public administration.

### 6.3 Determinants of Sectoral Change

Do workers reemployed in manufacturing differ from those reemployed in services with respect to socio-demographic characteristics? We address this question by estimating a binomial probit model for being reemployed in services as compared to manufacturing using sex, education, tenure, occupation, duration of unemployment, age and plant as covariates.

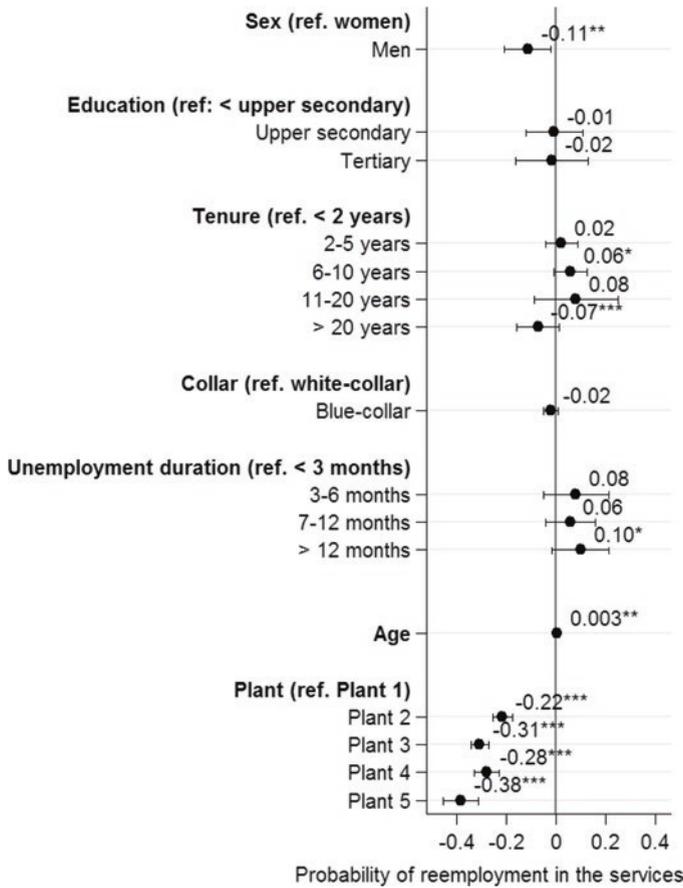
Since not all displaced workers found a job, the reemployed workers are a selective group and the analysis of their reemployment sector may be biased. We test for this possibility by using Heckman selection correction analysis presented in Table A.2 in the Annex.<sup>2</sup> The analysis suggests that selection into employment is not a major problem for our analysis of the reemployment sector (i.e. we obtain similar findings without the selection correction).

For this reason we present in Fig. 6.2 below a model without selection correction and indicate the average marginal effects. We find that men are 11 percentage points less likely to be reemployed in the service sector than women. This supports findings from the previous literature that suggest that women possess more skills that are transferable to the service sector or have a preference for jobs that offer flexible working hours. We do not find a significantly higher probability of being reemployed in the service sector for workers with higher levels of education. This result contradicts the view that more highly educated workers are more likely to change sector because credentials help employers in other sectors to evaluate the candidates' skills. But then it is possible that the information we have about the workers' education does not provide us with a complete picture of the workers' credentials. Our hypothesis H4, which predicts that workers with vocational training (measured here by means of the category of upper secondary education) are more likely to remain in their pre-displacement sector than workers with tertiary or less than upper secondary education, does not seem to be confirmed.

With respect to tenure we find that workers with an intermediate tenure of 6–10 years are 6 percentage points *more* likely than short-tenured workers to be reemployed in the services. This worker subgroup is possibly more likely to be in higher hierarchical positions and thus can more easily switch to the service sector. Workers with very high tenures of over 20 years, by contrast, are 7 percentage points *less* likely to change sector if they are reemployed. Our hypothesis which stated that the longer the workers' tenure, the lower their probability of changing sector thus receives ambiguous support. Regarding workers' occupation we find no difference between white- and blue-collar workers. This contradicts the view that white-collar

---

<sup>2</sup>More precisely, we estimate a selection equation on the probability of reemployment and a regression equation on the sector of reemployment (conditional on reemployment), using the STAT command `heckprob`. In order to do so we use an instrumental variable that affects reemployment, but not the sector of reemployment. We use age as an instrument since it is strongly correlated with the probability of reemployment, but seems to have no effect on the sector of reemployment. The analysis reveals that there is a correlation between the outcome equation and the selection equation ( $\rho=0.26$ ) and accordingly the Wald test is not significant.



**Fig. 6.2** Average Marginal Effects (AME) of a probit regression for being reemployed in the service sector as compared with the manufacturing sector. N=452. Note: Significance levels: \* p<0.1, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the plant level. Reading example: As compared to women, men are 11 percentage points less likely to switch from the manufacturing to the service sector

workers, who usually have more general skills, have better reemployment prospects in the service sector (White 2010: 1865; Iversen and Cusack 2000: 326). For unemployment duration we find that workers who search for a job for more than 12 months are 10 percentage points more likely to accept a service job as compared to workers who found their new job within 2 months. This result corresponds to our expectation formulated in hypothesis H5 that long-term unemployed workers are pushed out of the manufacturing sector, perhaps into *low-end* service jobs.

Finally, our analysis reveals significant effects for age and plant. With each year in age, the probability of switching to the service sector increases by 3 percentage points. Our analysis of differences between plants uses Plant 1 (Geneva) as reference category. We find that workers in all companies are much less likely to be reemployed in the tertiary sector than workers in Plant 1. A possible explanation for this finding may be that the plant in Geneva was located in a large urban labor market dominated by services – a labor market that is twice as large as that in Bern.

We briefly compare the workers' change in wages between the pre- and post-displacement job by unemployment duration to test whether workers with long spells of unemployment ended up in low-paid jobs. Focusing on workers who were reemployed in the services, our descriptive analysis confirms the expectation. In fact, workers who were unemployed for over a year experienced an average drop in wages of 12 percentage points. Workers with spells of unemployment of 7–12 months had an average wage decrease of 4 percentage points and workers with a period of 3–6 months a decrease of 6 percentage points. Only the workers with the shortest unemployment durations of less than 3 months experienced a tiny wage increase of 0.3 percentage points. These results point to an association between long spells of unemployment and occupational downgrading in the case of reemployment in the service sector.

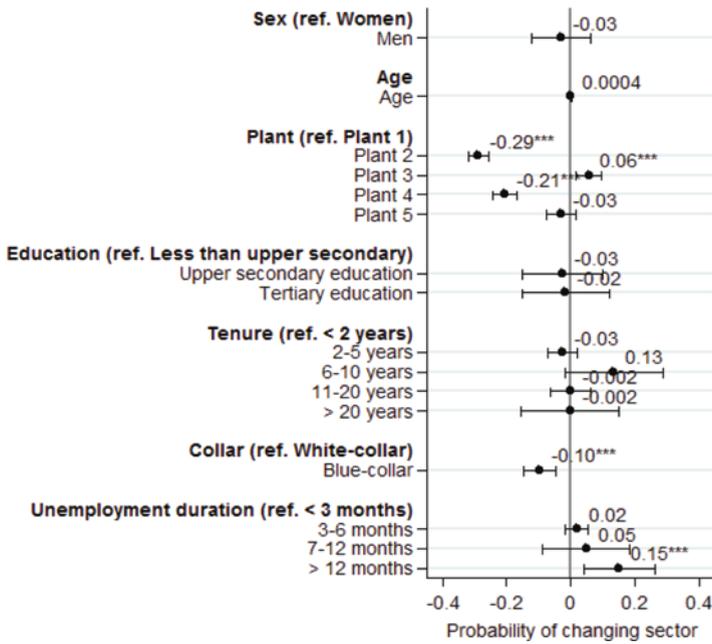
The analysis presented in Fig. 6.2 may not provide a good treatment of sectoral change since we consider services and manufacturing each as a unitary bloc. We therefore construct another measure for sectoral change where we define a sector on the 2-digit NOGA level and run a probit regression with the same specifications as in Fig. 6.2. Workers who were reemployed in the same 2-digit NOGA sector are considered as “stayers” and those who were reemployed in another sector as “switchers”. The results are presented in Fig. 6.3.

Interestingly, in Fig. 6.3 we find a highly significant effect for the workers' collar. In fact, blue-collar workers are 10 percentage points less likely to change sector than white-collar workers. This suggests that managers, professionals, technicians and clerks (ISCO 1-digit groups 1, 2, 3 and 4) – whom we define as white-collar workers – are more likely to be reemployed in another sector than blue-collar workers defined as craft workers, machine operators, and workers in elementary occupations (ISCO 1-digit groups 7, 8 and 9).<sup>3</sup> Finally, with respect to unemployment duration we find similar results to those in Fig. 6.2 with a large positive effect for long-term unemployment as compared to very short spells of unemployment. The previous finding that long unemployment durations force workers to leave their pre-displacement sector thus also seems to be valid for 2-digit sector changes and our hypothesis H5 is further corroborated.

The finding that is consistent across both analyses is that longer unemployment durations more frequently lead to sectoral change. Gangl (2003: 205) found a similar link between sectoral mobility and unemployment duration for Germany and the

---

<sup>3</sup> We also tested a model where we entered the ISCO 1-digit group as a categorical variable but the coefficients were not significant. Only if we pool the occupational groups into the categories of blue- and white-collar occupations do we find a statistically significant effect.



**Fig. 6.3** Average Marginal Effects (AME) of a probit regression for being reemployed in a different sector (NOGA 2-digit level) than the pre-displacement sector. N=452. Note: The dependent variable is binomial and differentiates between two outcomes: reemployed in (i) the pre-displacement sector or (ii) a different sector (on the 2-digit NOGA level). Significance levels: \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the plant level. Reading example: As compared to women, men are 3 percentage points less likely to be reemployed in another sector

US. Based on German longitudinal data he found the risk of changing sector to be twice as great for workers with an unemployment duration of over a year as for workers with a duration of 1 month. For the US the effect is smaller: workers with unemployment durations of more than 1 month are about 30 % more likely to change sector than workers with a very short spell of unemployment. Greenaway et al. (2000: 69), who analyzed data from the UK and the US, found for both countries that workers who change sector experience on average slightly longer spells of unemployment than those who are reemployed in the pre-displacement sector.

### 6.4 Determinants of Switching into Different Subsector in the Services

Our analysis of sectoral change may be imprecise since we define the service sector as a unitary bloc. However, the service sector includes various different industries in terms of skill requirements and wage levels (OECD 2000: 95). We therefore divide

the service sector into three sub-sectors: (i) distributive and consumer services (e.g. transport, retail trade and restaurants), (ii) business services (e.g. finance, IT and real estate), and (iii) social and public services (e.g. health care, education and public administration). We compute a multinomial logistic model on being reemployed in one of these three sub-sectors in comparison with being reemployed in the manufacturing sector, using the same independent and control variables as in Fig. 6.3. However, for this analysis it proves fruitful to distinguish two types of tertiary education: tertiary vocational and tertiary general degrees.

The results of the analysis are presented in Table 6.1. Our analysis suggests that being a man and having tenure of over 11 years decrease the probability of reemployment in *distributive and consumer services* in comparison to returning to manufacturing. At the same time, having searched for a job for more than 3 months increases the chances of switching to this sector.

With respect to the probability of going into *business services* as compared to remaining in the manufacturing sector we find a significant effect for age, plant and the duration of unemployment. For workers of higher ages and those who searched for a new job for between 3 and 12 months there is a higher chance of switching to this sector. Workers from Plant 5 have a lower chance of switching sectors than workers from other plants.

Finally, we find that blue-collar workers are 10 percentage points less likely than white-collar employees, and workers with 2–5 years of tenure 9 percentage points less likely than workers with less than 2 years of tenure, to shift to *social and public services*. While the finding regarding the blue-collar workers seems plausible, the reasons for the effect of tenure are less evident. Perhaps there is spuriousness as a consequence of the small number of observations for each sector (e.g.  $n=72$  for social and public services).

In order to provide a clearer picture of how the workers' sex and duration of unemployment affect the probability of sectoral change, we present in Fig. 6.4 the predicted probabilities of being reemployed in a given subsector for a white-collar worker with upper secondary education and 2–5 years of tenure (based on the model in Table 6.1).

The figure shows that among workers who are reemployed in *manufacturing* or the *distributive and consumer service sector* there is a divergent pattern with respect to gender. In fact, men are 15–20 percentage points more likely to return to *manufacturing* while women are overrepresented in *distributive and consumer services*. These differences are however less pronounced with respect to reemployment in *business services* or *social and public services*.

Unemployment duration of less than 3 months seems to enhance the likelihood of being reemployed in the manufacturing sector by about 10 percentage points. In contrast, workers with an unemployment duration of 3–6 months switched to a service sector more frequently than workers with shorter or longer spells. The pattern confirms the idea that workers first tried to find a job in their pre-displacement sector. If they were not successful, they started to apply for jobs in other sectors after about 2 months of job search.

**Table 6.1** Average Marginal Effects (AME) for a multinomial logistic regression on being reemployed in a service subsector relative to being reemployed in manufacturing

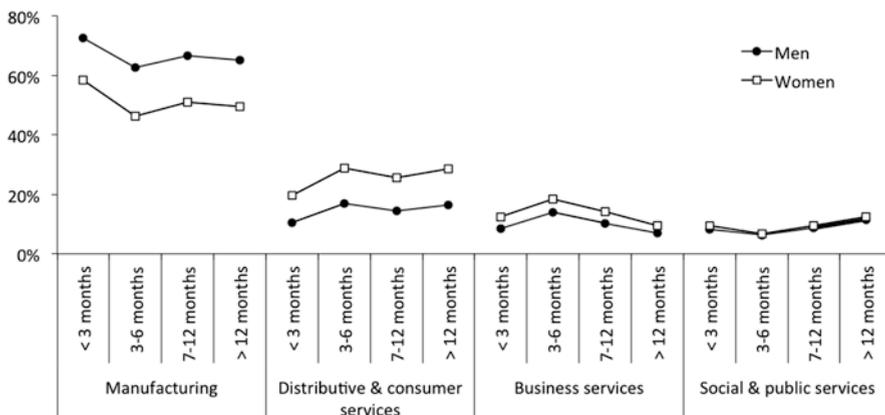
	Distributive and consumer services AME (SE)		Business services AME (SE)		Social and public services AME (SE)	
Age	0.0004	(0.00)	0.001**	(0.00)	-0.0005	(0.00)
Plant (ref. Plant 1 (Geneva))						
Plant 2 (Biel)	-0.07	(0.05)	-0.03	(0.06)	-0.04	(0.03)
Plant 3 (NWS 1)	-0.09	(0.06)	-0.11	(0.08)	0.09*	(0.05)
Plant 4 (Bern)	-0.08	(0.09)	-0.11	(0.10)	0.06	(0.07)
Plant 5 (NWS 2)	-0.07	(0.04)	-0.18***	(0.06)	-0.02	(0.03)
Sex (ref. women)						
Men	-0.07**	(0.04)	-0.03	(0.04)	-0.02	(0.08)
Education (ref. less than upper secondary education)						
Upper secondary	-0.00	(0.05)	-0.02	(0.04)	-0.05	(0.06)
Vocational tertiary	-0.06	(0.06)	0.02	(0.05)	-0.03	(0.07)
General tertiary	-0.03	(0.06)	0.02	(0.05)	0.04	(0.05)
Tenure (ref. < 2 years)						
2–5 years	0.02	(0.06)	0.06	(0.04)	-0.09**	(0.04)
6–10 years	0.04	(0.04)	0.03	(0.04)	-0.01	(0.03)
11–20 years	-0.04**	(0.02)	0.02	(0.05)	0.04	(0.03)
Occupation (ref. white-collar)						
Blue-collar	0.02	(0.04)	0.00	(0.02)	-0.10***	(0.03)
Unemployment duration (ref. < 3 months)						
3–6 months	0.06*	(0.03)	0.05*	(0.03)	-0.03	(0.04)
7–12 months	0.04	(0.05)	0.02	(0.03)	0.01	(0.04)
>12 months	0.05	(0.03)	-0.02	(0.07)	0.04	(0.10)
Pseudo R <sup>2</sup>	0.08					
N	443					

Note: The model includes controls for the unemployment rate of the district in the month of displacement. The dependent variable is multinomial and distinguishes four outcomes: reemployment in (i) manufacturing (reference category), (ii) distributive and consumer services, (iii) business services, (iv) social and public services

Standard errors are clustered at the plant level. Significance levels: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Reading example: As compared to women, men are 7 percentage points less likely to be reemployed in distributive and consumer services

Finally, we give a short account of the type of employer with which the workers are reemployed: Three quarter of the workers (75%) have a private, 23% a public employer and 2% work for an association or an NGO. Among the workers reemployed by a *private* employer, 78% work in the secondary and 22% in the tertiary sector. Among workers who found a job with a *public* employer, 47% indicate working in the manufacturing sector and 53% in services.



**Fig. 6.4** Predicted probabilities of being reemployed in a given sector by sex and unemployment duration. N=443. Note: Strictly speaking the dots in the figure should not be connected by lines as we use a categorical independent variable. However, the lines are helpful to facilitate the interpretation of the results

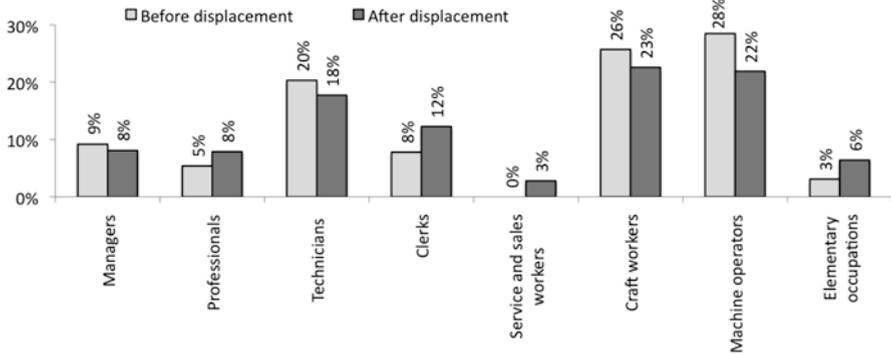
## 6.5 Occupations of Reemployment

As for the reemployment sector, push and pull mechanisms may be at work behind potential changes of the workers' occupation upon reemployment after displacement. Previous research on horizontal occupational mobility suggests that an older age, being a women and having a higher income reduce the likelihood of occupational change (Longhi and Brynin [2010: 660] for the UK and Germany; Parrado et al. [2007: 446] for the US; Velling and Bender [1994: 224] for Germany). Although these studies do not focus on displaced workers, they give us an idea of potential factors that are linked to occupational changes after plant closure.

We start our analysis of occupational change by comparing the proportion of workers employed in each category of the 1-digit groups of the International Standard Classification of Occupations (ISCO) before and after displacement. We include in the analysis only those workers who were reemployed at the moment of our survey and both information about pre- and post-displacement occupations are provided only for reemployed workers.<sup>4</sup>

Figure 6.5 shows how workers were distributed across eight occupational categories before and after displacement. There has been a decline in typical production occupations: the proportion of technicians decreased from 20 to 18%, the proportion of craft workers from 26 to 23% and the proportion of machine operators from

<sup>4</sup>This approach may induce biased results since reemployment is not random. As we have seen in the previous section, long-term unemployed workers tend to change sector in order to avoid labor market exit. Accordingly, since we do not know the reemployment occupation of the workers who were still unemployed when we surveyed them, we probably underestimate the scope of occupational change.



**Fig. 6.5** Distribution of reemployed workers across occupations before and after displacement (at the ISCO 1-digit level). N=576

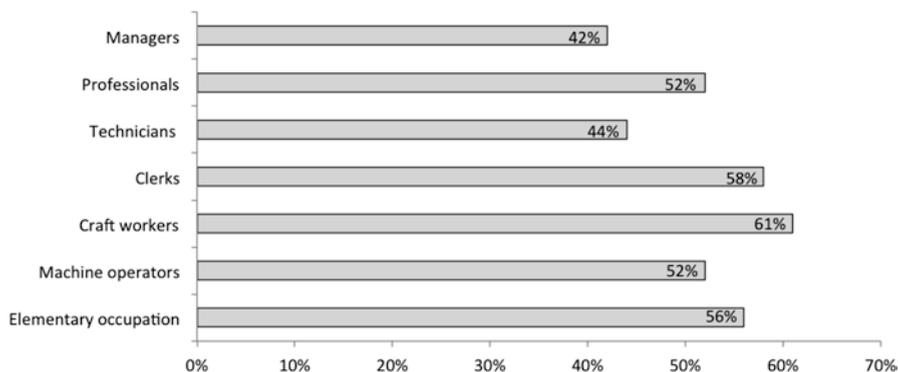
28 to 22%. In contrast, white-collar occupations are more strongly represented: the proportion of professionals increased from 5 to 8%, the proportion of clerks from 8 to 12% and the proportion of sales workers from 0 to 3%. At the same time, upon reemployment more workers were reemployed in elementary occupations (increase from 3 to 7%) which points to the experience of an occupational downgrading for some workers. The proportion of managers remained roughly constant, decreasing slightly from 9 to 8%.

How can we interpret this result in the light of earlier findings? On the one hand, the decrease in the proportion of workers reemployed in typical production occupations such as craft workers and machine operators corresponds to the observation that these types of jobs are declining in Switzerland (Oesch and Rodriguez Menes 2011: 527). Thus, if fewer jobs in these occupations are available on the labor market, displaced workers are less likely to be reemployed in these occupations. Accordingly, plant closure in manufacturing seems to mediate the structural adjustment from an economy based on manufacturing to a service economy.

On the other hand, the proportion of workers reemployed in occupations typical of industrial production is still large. If we pool craft workers, machine operators and workers in elementary occupations, we find that 51% of the workers in our sample were still employed in typical production occupations. This suggests that manufacturing occupations are not vanishing, but that there is a sizable creation of new production jobs (OECD 2009: 124).

Figure 6.5 shows aggregate change in the occupational structure of the displaced workers, but does not account for individual change. In a next step we therefore investigate the occupational transitions on an individual level. A descriptive analysis reveals that on average 52% of the reemployed workers remain in the same ISCO 1-digit occupational category after reemployment.<sup>5</sup>

<sup>5</sup> We do not indicate occupational changes on the 2-digit level since the data is subject to measurement error as the coding of the occupations was not always unambiguous.

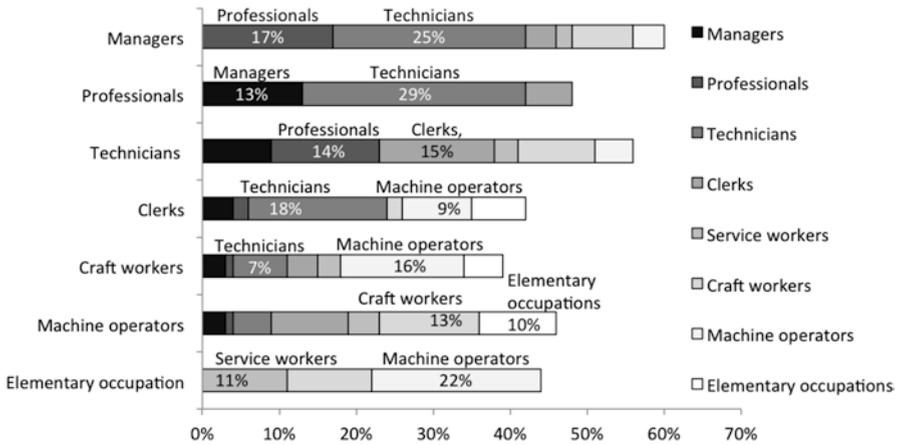


**Fig. 6.6** Proportion of workers reemployed in their pre-displacement occupation by ISCO 1-digit occupational category. N=576

Figure 6.6 illustrates for each occupation the proportion of workers who have been reemployed in the same occupation. At one end of the spectrum, managers and technicians are the least likely to be reemployed in their pre-displacement occupation (42 % and 44 % respectively). They seem to be the most horizontally mobile. A possible explanation is their usually higher level of education and more general tasks which may allow them to switch occupation more easily than workers in other occupations. At the other end of the spectrum we find that craft workers and clerks are the most likely to be reemployed in the same occupation (61 % and 58 % respectively). This suggests that they have a large proportion of occupation-specific skills which are difficult to transfer to other occupations. An intermediate mobility is observed for professionals, machine operators and workers in elementary occupations (52 %, 52 % and 56 % respectively).

We now turn to the 48 % of reemployed workers who *changed* occupation and conduct a descriptive analysis of the occupational destinations for each pre-displacement ISCO 1-digit occupational group. Figure 6.7 shows that for workers who were active as *managers* before displacement, the most frequent destinations after manager were technicians (25 %) and professionals (17 %). Among *professionals*, 29 % were reemployed as technicians and 13 % as managers. 15 % of the *technicians* worked as clerks and 14 % as professionals. 18 % of the workers who were active as *clerks* before displacement were reemployed as technicians and 9 % as machine operators. *Craft workers* most often became machine operators (16 %) or technicians (7 %). *Machine operators* were reemployed mainly as craft workers (13 %) and in elementary occupations (10 %). Finally, among the workers in *elementary occupations*, 22 % were reemployed as machine operators and 11 % as service workers.

These results indicate three conclusions. First, some occupations seem to enable workers to switch into a large number of other occupations while others only lead to a small number of occupations. Workers employed before displacement as professionals or in elementary occupations ended up in three different occupations after



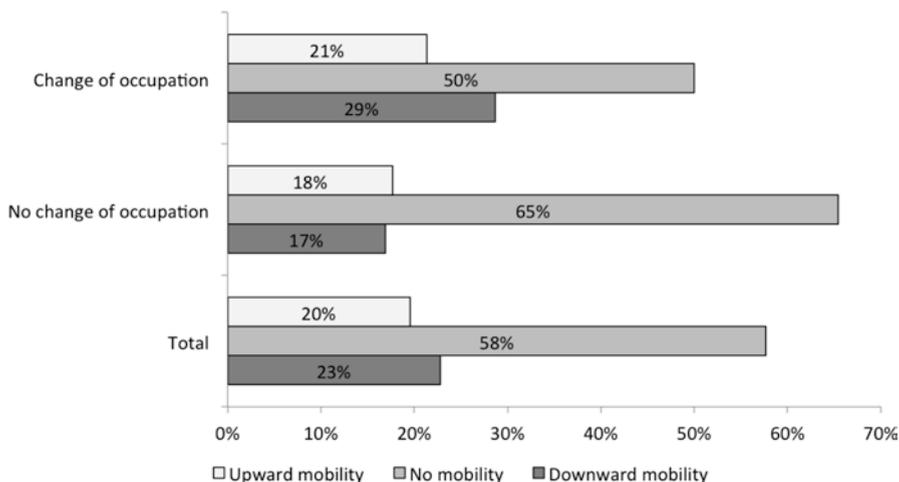
**Fig. 6.7** Occupational destinations of the workers who change occupation. N=576. Note: The percentages indicated in the figure add up to 100 % if we include workers who stayed in their occupational group. Reading example: Among managers, 17 % were reemployed as professionals, 25 % as technicians, a smaller percentage as clerks, service workers, craft workers and machine operators. No one has been reemployed in elementary occupations. The remaining share of managers has been reemployed as managers – 42 % as Fig. 6.6 tells us

displacement while workers in the other occupations were reemployed in twice as many different occupations. This finding may indicate on the one hand that unqualified workers in elementary occupations do not have many options in terms of occupational choice. On the other hand, because of their specialization, professionals may have relatively little flexibility – or, above all, incentives – to change occupation upon reemployment.

Second, the occupations of managers, professionals and technicians seem to be permeable, and switching between these three categories thus relatively easy. This may be due to the fact that these occupations often require a tertiary educational degree. Changing into these occupations without credentials is thus less likely. Third, the only occupational group where a considerable proportion of workers has changed into service jobs is elementary occupations. Workers in elementary occupations – who usually are low-skilled – thus seem to be the ones at risk of ending up in McJobs, low-end jobs in restaurants or retail trade.

A change of occupation may be accompanied by a change in the employment relationship and job quality and thus by occupational up- or downgrading. Changing occupation may allow workers to progress and pursue new challenges. But it may also mean that they are overqualified for their new position or that they have to acquire new skills and learn new tasks which may be strenuous.

One question in our questionnaire examined whether reemployed workers consider themselves, in their new job, to be in a higher, equal or lower social position than the position they had before their displacement. We find that 29 % of the workers who *changed* occupation experienced downward mobility, 21 % upward mobility and 50 % no mobility (see Fig. 6.8). Among workers who did *not* change their



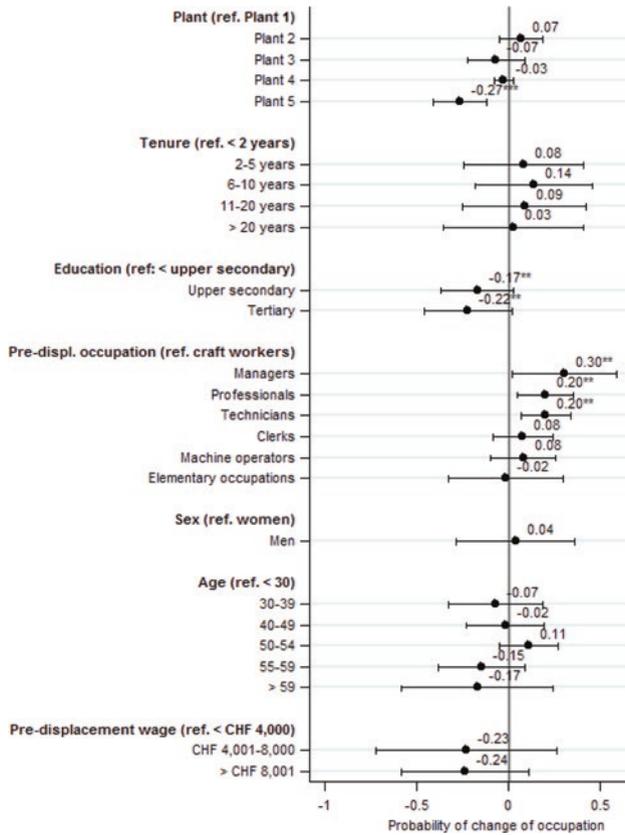
**Fig. 6.8** Change in social status between the pre- and post-displacement job by occupational change on the ISCO 1-digit level.  $N=487$ . Note: Change in social status was assessed by asking workers “Compared to your job before displacement, does your new job represent: (i) upward mobility, (ii) a similar social position, or (iii) downward mobility?” Reading example: Among those workers who changed occupation, 21 % have experienced upward mobility, 50 % no mobility and 29 % downward mobility

occupation, only 17 % experience downward mobility, 18 % upward mobility and 65 % no mobility. On average (see total), 58 % of the workers experience no mobility while 23 % experienced downward and 20 % upward mobility. This implies that, overall, a majority of the workers experienced no mobility, independent of whether they changed occupation. In addition, this finding suggests that changing occupational increases workers’ risk of experiencing downward mobility.

## 6.6 Determinants of Occupational Change

Finally, we scrutinize the factors that are associated with the workers’ change of occupation. The literature suggests that a younger age, being a man and a low income are associated with a higher propensity to change occupation (Longhi and Brynin 2010; Parrado et al. 2007; Velling and Bender 1994). In order to identify the determinants of occupational change, we compute a logistic regression for the probability of changing occupation on the ISCO 1-digit level and indicate the average marginal effect (see Fig. 6.9). We run a model with the covariates plant, tenure, education, ISCO 1-digit level pre-displacement occupation, sex, age and pre-displacement wage.

We find large and significant differences in the propensity to change occupation according to plant, education and pre-displacement occupation. Workers from Plant



**Fig. 6.9** Average marginal effects (AME) for a logistic regression for change of occupation on an ISCO 1-digit level. N=366. Note: The dependent variable is binomial and differentiates between two outcomes: reemployed in the (i) same occupation or in (ii) a different occupation, measured on the ISCO 1-digit level. Significance levels: \* p<0.1, \*\* p<0.05, \*\*\* p<0.01. Standard errors are clustered at the plant level. Reading example: As compared to workers from Plant 1, workers from Plant 2 were 7 percentage points more likely, those from Plant 3 7 percentage points less likely, those from Plant 4 3 percentage points less likely and those from Plant 5 27 percentage points less likely to change occupation

5 in North-Western Switzerland (NWS 2) were 26–30 percentage points – depending on the model – less likely to change occupation than workers in the plant located in Geneva. In the analysis of the determinants of *sectoral* change in Fig. 6.2 above we found that workers from Plant 5 had the lowest probability of all workers of switching sector. We therefore assume that workers in Plant 5 were particularly often able to be reemployed in jobs that are similar to their pre-displacement jobs – with respect to both sector and occupation.

Interestingly, workers with upper secondary or tertiary education were 17–22 percentage points less likely to be reemployed in another occupation than workers with less than upper secondary education. This suggests that higher levels of education offer better chances of being reemployed in the pre-displacement occupation while lower levels of education push workers out of their occupations. In the analysis of the effect of the workers' pre-displacement occupation we use craft workers as reference category because the descriptive analysis in Fig. 6.6 above indicates that they are particularly unlikely to change occupation. The regression analysis provides us with the result that managers, professionals and technicians are 20–30 percentage points more likely to change occupation than craft workers.

## 6.7 Conclusion

A central result of this chapter is that over two-thirds of the reemployed workers returned to a job in the manufacturing sector. This finding suggests that plant closure in manufacturing does not force the majority of displaced workers to accept low-end jobs in the service sector. However, our hypothesis H4 that workers with vocational – or upper secondary – training are more likely to be reemployed within the same sector than workers with other types of education has not been confirmed. We find that women and workers with long unemployment durations are significantly more likely to be reemployed in the service sector than men and workers with short spells of unemployment. This is consistent with earlier findings that typical female skills pull women into the services. In addition, our hypothesis H5 regarding long-term unemployment seems to be supported as we find that long unemployment durations push workers out of their pre-displacement sector into low-paid service jobs in consumer and distributive services or the social services and public administration (see Oesch and Baumann 2015: 115).

In addition, more than half of all reemployed workers found a new job in an *occupation* that is typical for manufacturing such as craft worker, machine operator or technician. The most important determinants for being reemployed in the pre-displacement occupation are higher levels of education and being a craft worker. Our analysis seems to suggest that workers with lower levels of education are pushed out of their former occupation and that managers, professionals and technicians have the opportunity to change occupation. Displaced workers who did change to a job in the service sector most often went into business or distributive services. Not surprisingly, we thus observe a shift in the distribution of occupations upon reemployment towards occupations such as clerks, sales and service workers and professionals.

From the perspective of the economy as a whole it seems far from beneficial if workers are trained on a particular job but then work in another. Of course knowledge about other occupations or sectors may be an advantage in many jobs, but if workers end up in an employment that is completely different from what they were trained for, their skills are likely to be lost. For this reason it would be beneficial for

both employers and employees to invest in transferable skills, for example through continuous training. These skills would allow displaced workers to switch more easily to other sectors and occupation and these skills would not be lost.

The discussion about workers' reemployment sectors and occupations is closely linked to the quality of the new jobs. Sectoral and occupational changes can be associated with occupational up- or downgrading and changes in wages. Workers who change sector or occupation – or both – may lose out in financial terms since they lose the returns on sector- or occupation-specific skills that they received before displacement. We therefore examine in the two next chapters the quality of workers' new employment. We begin with an analysis of wages and continue with job quality and job satisfaction.

## References

- Bonoli, G. (2007). Time matters: Postindustrialization, new social risks, and welfare state adaptation in advanced industrial democracies. *Comparative Political Studies*, 40(5), 495–520.
- Cha, Y., & Morgan, S. L. (2010). Structural earnings losses and between-industry mobility of displaced workers, 2003–2008. *Social Science Research*, 39(6), 1137–1152.
- Estevez-Abe, M. (2005). Gender bias in skills and social policies: The varieties of capitalism perspective on sex segregation. *Social Politics: International Studies in Gender, State & Society*, 12(2), 180–215.
- Fallick, B. C. (1993). The industrial mobility of displaced workers. *Journal of Labor Economics*, 11(2), 302–323.
- Gangl, M. (2003). Labor market structure and re-employment rates: Unemployment dynamics in West Germany and the United States. *Research in Social Stratification and Mobility*, 20(03), 185–224.
- Gibbons, R., Katz, L. F., Lemieux, T., & Parent, D. (2005). Comparative advantage, learning, and sectoral wage determination. *Journal of Labor Economics*, 23(4), 681–724.
- Greenaway, D., Upward, R., & Wright, P. (2000). Sectoral transformation and labour-market flows. *Oxford Review of Economic Policy*, 16(3), 57–75.
- Hakim, C. (2006). Women, careers, and work-life preferences. *British Journal of Guidance & Counselling*, 34(3), 279–294.
- Iversen, T., & Cusack, T. R. (2000). The causes of welfare state expansion: Deindustrialization or globalization? *World Politics*, 52(3), 313–349.
- Jolkkonen, A., Koistinen, P., & Kurvinen, A. (2012). Reemployment of displaced workers – The case of a plant closing on a remote region in Finland. *Nordic Journal of Working Life Studies*, 2(1), 81–100.
- Longhi, S., & Brynin, M. (2010). Occupational change in Britain and Germany. *Labour Economics*, 17(4), 655–666.
- Neal, D. (1995). Industry-specific human capital: Evidence from displaced workers. *Journal of Labor Economics*, 13(4), 653–677.
- Nickell, S. (2001). Introduction. *Oxford Bulletin of Economics and Statistics*, 63(Special Issue), 617–628.
- OECD. (2000). Employment in the service economy: A reassessment. In *OECD employment outlook* (pp. 129–166). Paris: OECD Publishing.
- OECD. (2009). Employment outlook: How do industry, firm and worker characteristics shape job and worker flows? In *OECD employment outlook* (pp. 117–163). Paris: OECD.

- Oesch, D. (2013). *Occupational change in Europe. How technology and education transform the job structure*. Oxford: Oxford University Press.
- Oesch, D., & Baumann, I. (2015). Smooth transition or permanent exit? Evidence on job prospects of displaced industrial workers. *Socio-Economic Review*, 13(1), 101–123.
- Oesch, D., & Rodriguez Menes, J. (2011). Upgrading or polarization? Occupational change in Britain, Germany, Spain and Switzerland, 1990–2008. *Socio-Economic Review*, 9(3), 503–531.
- Parrado, E., Caner, A., & Wolff, E. N. (2007). Occupational and industrial mobility in the United States. *Labour Economics*, 14(3), 435–455.
- Velling, J., & Bender, S. (1994). Berufliche Mobilität zur Anpassung struktureller Diskrepanzen am Arbeitsmarkt. *Mitteilungen aus der Arbeitsmarkt- und Berufsforschung*, 3, 212–231.
- White, R. (2010). Long-run wage and earnings losses of displaced workers. *Applied Economics*, 42(14), 1845–1856.

**Open Access** This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

