

# 1. Introduction: an occupational perspective on non-standard employment

**Werner Eichhorst and Paul Marx**

---

## LABOUR MARKET CHANGE AND OCCUPATIONAL DIVERSITY

Few would disagree that European labour markets are in a process of deep transformation. An important element of this transformation is the twin-process of deindustrialization and growing non-standard work. Up to the 1980s, most European countries were characterized by high shares of industrial employment and relatively standardized working conditions. This employment model, as is often argued, was characterized by stable career patterns in internal or occupational labour markets and relatively homogeneous wage levels and types of contracts. To what extent this stylized picture really mirrors the reality for the European workforce of the industrial age is questionable. However, it is certainly fair to say that in the era of dominant manufacturing sectors, European labour markets tended to produce more egalitarian labour market outcomes (at least as regards those in employment) than we observe today, however in many cases this was only achieved at the expense of a lower level of employment and the de facto exclusion of some socio-economic groups.

Starting in the 1970s and 1980s, the decline of industrial employment (e.g. due to growing international competition) and the growth of structural unemployment in Europe led to a focus on the expansion of private sector jobs (Esping-Andersen, 1996; Iversen and Wren, 1998; Scharpf, 1997; 2000). However, with growing shares of service sector employment, most European labour markets seemingly lost some of their ability to ensure standardization of employment relationships (Esping-Andersen, 1999). At least to some extent, the deviation from standard employment was explicitly intended as a mechanism to promote job creation and overcome the persistent deficit in service sector employment which was associated with 'rigid' labour market regulation and 'too high' labour costs at

the time. The repercussions in the form of growing wage inequality and non-standard employment have been described in the literature extensively (e.g. Barbieri, 2009; Boeri and Garibaldi, 2009; Bosch et al., 2009; Palier and Thelen, 2010).

An important mechanism linking deindustrialization to growing inequality is the famous Baumol Effect: in labour-intensive service jobs, productivity cannot be increased easily. As opposed to the virtuous circle in the industrial era, in which productivity gains led to higher wages and increasing demand, the expansion of the service sector requires a wage structure more closely mirroring sectoral differences in productivity (Esping-Andersen, 1993; Iversen and Wren, 1998). If wages are rigid, however, countries may not respond with greater wage dispersion but with an increasing differentiation by employment contract, i.e. 'dualism' between permanent and temporary work (DiPrete et al., 2006; King and Rueda, 2008; Maurin and Postel-Vinay, 2005).<sup>1</sup>

What this brief discussion implies is that, first, deindustrialization and service sector growth are important factors driving changes towards more unequal labour market outcomes (i.e. regarding those in employment) in Europe and that, second, we can expect to observe marked differences in the growth of 'bad' or 'cheap' jobs across sectors and occupations *within* countries (Eichhorst and Marx, 2012; Häusermann and Schwander, 2012) although this may have contributed to lower unemployment and inactivity in post-industrial labour markets.

This insight may appear trivial, as a reference to deindustrialization is commonly made when labour market change is discussed academically. We contend, however, that the implications of this process have so far not been fully reflected upon in existing research. In the comparative welfare and labour market literature, the discussion of change (i.e. the growth of non-standard employment and wage dispersion) strongly focuses on the development of national averages and institutional arrangements over time (e.g. Auer and Cazes, 2003; Boeri and Garibaldi, 2009; Bosch et al., 2009; Eichhorst et al., 2011; Hinrichs and Jessoula, 2012; Kahn, 2007; Nunziata and Staffolani, 2007; Schmid, 2010). As we argue, this dominant approach focusing on national data tends to neglect crucial differences in labour market patterns across sectors and occupations. Although various contributions have shed light on developments in selected low-skill occupations (e.g. Bosch and Lehndorff, 2005 and Gautié and Schmitt, 2010), we still lack a systematic research agenda for the study of within-country variation in the process of labour market change.

A similar point can be made regarding cross-country differences in patterns of labour market inequality. In the comparative literature,

cross-country variance in inequality and non-standard work are mainly attributed to institutional differences (e.g. Boeri, 2011; Cahuc and Postel-Vinay, 2002; Freeman, 2007; Kahn, 2007; King and Rueda, 2008; Lucifora, 2000; Nunziata and Staffolani, 2007). While institutions have an undeniable effect on labour market outcomes, their explanatory power is limited. For instance, labour market institutions may explain why employment characteristics differ between a German and a British manufacturing worker but tell us less about why workers in the hotel sector from both countries have similarly unfavourable job characteristics. Hence, labour market institutions do not have the same effect on each occupation. Potential explanations for why quite different employment practices emerge within a given institutional framework are manifold. Institutions may have limited legal coverage or their enforceability is low. Therefore, actual employment practices should be expected to depend on additional factors beyond the legal framework. We return to this point below.

To study within-country variation in employment patterns, it is crucial to go beyond popular dichotomies like industry vs. service sector or skilled vs. unskilled labour. One does not have to be a labour market expert to realize that large segments of the service economy are characterized by decent working conditions, which do not fall short of those in 'golden-age' manufacturing jobs. Banking and insurance jobs or public sector employment are a case in point. By the same token, outsourcing and other flexibility enhancing practices have substantially altered working conditions for large shares of the industrial workforce to the negative. Hence, a simple sectoral distinction is unlikely to capture the diverging labour market trends within countries. The same holds for skill divides. Whereas education used to be translated into a favourable labour market position, this mechanism is weakened in post-industrial societies. Temporary employment, for instance, is by now prevalent among university graduates in many European labour markets.

The starting point for the present volume is therefore the insight that we need a more fine-grained occupational distinction to capture unequal employment patterns and trends within European labour markets. However, such occupational differences are under-theorized and under-researched, thus we have little systematic knowledge about why bad jobs are distributed unequally across occupations. We therefore begin this book by addressing a seemingly simple question: why does the share of flexible and/or cheap employment differ across occupations?

## THE UNEQUAL INCIDENCE OF NON-STANDARD WORK

A good point of departure for our occupational model explaining the use of non-standard work is an understanding of employer preferences for different types of employment when making a hiring decision. Hence, we need to ask how employers seek to optimize the use of labour within a given institutional framework. Generally, we assume that employers try to establish employment relationships with 'the lowest bill for a given set of technological choices and labour market conditions' (Osterman, 1987: 54). Such choices and conditions vary across occupations.

In general, we could assume that employers facing uncertainty always try to maximize flexibility. So why do they not give temporary contracts to all workers? It is important to acknowledge that flexibility has costs for employers as well. In particular, permanent contracts are argued to be key in nurturing a *psychological contract*, i.e. unwritten reciprocal expectations that form the basis of an employment relationship (Schein, 1978). This contract can be desirable from an employer's perspective as it commits workers to the goals of an organization and leads to extra effort and productivity. Temporary workers, however, are found to have a more limited psychological contract (Rousseau, 1995; Schalk et al., 2010; Van Dyne and Ang, 1998). In other words, temporary workers invest less in building an employment relationship going beyond a short-term economic transaction. This certainly is undesirable for employers having an interest in reducing staff turnover. Whether lower organizational commitment also leads to lower productivity is disputed in the literature (see De Cuyper et al., 2008 for a review). This arguably depends strongly on the nature of the temporary job (e.g. its duration) and prospects for making a transition into a permanent contract within the firm. If the current job is seen as a stepping stone in an internal career ladder, temporary workers should be even extra motivated and productive. The findings by De Cuyper et al. (2010) support this intuition.

One important additional source of 'flexibility costs' for employers is that the extensive use of non-standard work may have a negative effect on work relations with permanent staff. Guest and Clinton (2010) find that there is a negative relationship between the share of temporary staff in a firm and workers' trust in the management as well as with perceptions of organizational fairness and fulfilment of psychological contracts. This can, for instance, lead to increased turnover intentions among permanent workers (see also Broschak and Davis-Blake, 2006).

Thus, employment flexibility has potential costs for employers as it has repercussions on the business model that is operable, making it important

to understand under which conditions these costs prevail over potential advantages. While in reality there are numerous intersecting factors which will influence employers' hiring choices, the human resource literature highlights a key set of factors, which we argue can be summarized in two main elements: the *replaceability of workers* and the *flexibility of hiring practices*.

Replaceability refers to the costs to the employer of replacing a worker by recruiting from the external labour market. The higher these costs, the more we expect employers to offer favourable working conditions which bind workers to the firm. This would include permanent contracts, working time corresponding to the worker's preferences and decent wages. The second aspect is the flexibility of hiring practices, i.e. the absence of restrictions on the management's prerogative to hire and fire at will or to freely negotiate wage levels. However, such restrictions may also encourage employers to exploit loopholes to regain flexibility as long as workers can be replaced.

The important point for our argument is that both the replaceability of workers and the flexibility of hiring practices are not homogeneous within the institutional setting of a national labour market. Rather, they differ across sectors, occupations and individuals. For the purpose of our analysis four causal factors are deemed relevant:

1. labour supply and demand conditions,
2. the type of skills mainly required,
3. the power of unions expressed by collective bargaining and co-determination,
4. the extent to which labour market institutions constrain management decisions.

The first two points affect the *replaceability* of workers, while the latter two affect the flexibility of hiring practices. The first factor explaining occupational heterogeneity is the balance of labour supply and demand. The link to the costs of replacing a worker is straightforward. If there is a shortage in the supply of a particular type of work, recruitment costs go up. This should encourage more stability-oriented human resource practices in the respective occupation as well as better pay and better working conditions in general. Beyond this general point, labour supply can constrain employers in other ways. For instance, a production model based on part-time work is only feasible if a sufficient number of people (usually women) are willing to accept such work. Hence, whether employers can rely on flexible work depends on whether there is a sufficient supply of labour in the respective occupation. In practical terms, this means the

availability of typical 'risk groups', i.e. socio-economic groups available for flexible or badly paid jobs such as the young, women or migrants (Kahn, 2007).

The second factor influencing the replaceability of workers is the prevailing skill profile in an occupation. First and foremost, this refers to the *skill level*, i.e. the marginal productivity of a typical worker in the occupation. The lower this is, the higher the incentives to offer (and the pressure to accept) atypical contracts or low wages. Usually, low-skilled workers are easier to replace than medium- and high-skilled people since no or little training investments are necessary. At the same time, many jobs requiring limited and basic skills can also be replaced by higher capital intensity or offshoring. This limits both employer demand for low-skilled workers and the bargaining power of such workers.

Moreover, the *type of skill* (general vs. firm specific) should matter. The concept of skill specificity has been used in very different ways (Streeck, 2012). Here, specific skills simply refer to qualifications which are more valuable in one firm than in another. Since such qualifications cannot be 'bought' in the market, but have to be developed within the firm, employers cannot easily replace specifically qualified workers (Busemeyer, 2009; Emmenegger, 2009; Goldthorpe, 2000). To the extent that jobs involve specific skills, employers should be interested in stable employment relationships rather than temporary contracts (Autor, 2003). In contrast, generally skilled workers are by definition easier to replace because they do not create the sunk costs of specific training investments. Skill specificity confines the use of temporary workers peripheral tasks within the company as they cannot be integrated effectively into core activities (Lautsch, 2002; Lepak and Snell, 1999). Hence, the role of flexible employment is expected to be smaller in occupations which are strongly characterized by firm-specific skills. It is noteworthy that skill specificity may explain why some academic occupations feature high shares of flexible work as well (e.g. Polavieja, 2005). Arguably, in highly individualized and autonomous service sector jobs, in which personal interaction with the client dominates, firm-specific knowledge is relatively scarce. However, a big chunk of service sector jobs is located in large companies with idiosyncratic organizational procedures, products and technologies. Marx (2011) argues that this leads to rather specific skills in service occupations, for instance in banking, insurance and the public sector. To the extent that service sector employers rely on firm-specific knowledge, employment patterns should converge to those of specifically trained workers in manufacturing. In fact, we can assume that identical service occupations can exist with somewhat different skills and employment structures between and

also within countries depending on the production model of individual employers. This is particularly the case with respect to the combination of quality and price, which in turn also impacts skill requirements and the use of external flexibility options.

As mentioned above, replaceability of workers is not the only relevant factor. As a second step, we turn to employers' *flexibility* and how it is determined by industrial relations and legal requirements.

The diverging patterns of *industrial relations* across occupations are an obvious explanation for heterogeneity in labour market outcomes. High unionization and collective bargaining coverage are the historical foundation of relatively standardized employment models which typically developed around manufacturing and the public sector. While unions are often still strong in this segment, in many countries they have difficulties in gaining ground in parts of the service sector (e.g. Brady, 2007; Ebbinghaus, 2006; Palier and Thelen, 2010; Visser, 2007).

In sum, we expect working conditions to be more standardized (and compressed) in occupations in which workers are organized effectively and even to be more advantageous than expected when only taking into account skill demand and skill supply. *Collective bargaining coverage* (or the lack thereof) should have an effect on wage compression and the scope of low-wage employment. The absence of either collective agreements in certain sectors or statutory minimum wages tends to be associated with higher wage dispersion and larger segments of low pay. Here, only statutory minimum wages or the extension of collective agreements can set a generally applicable wage floor.

Industrial relations are also important in monitoring compliance to labour market regulation. Where unions are weak at the firm level, employers have more leeway to bend existing regulation, e.g. by making use of 'quasi-dependent' self-employment. Such behaviour can manifest in a range of ways from exploiting legal grey areas or bold breach of regulations, e.g. in the case of 'dependent' self-employment. In any case, the strength of unions and the related enforceability of labour market regulation are important to understand employment patterns on the occupational level.

Finally, *labour market regulations* do not only vary in the extent to which they can be enforced. In principle they should apply to the entire economy, which means they are often used to explain cross-national differences in employment outcomes. However, the *de jure* coverage of labour market institutions is often not complete. First, the public and the private sector usually differ with regard to the regulation of individual dismissals, remuneration systems or employer-provided benefits. Second, in the private sector co-determination via works councils and statutory

dismissal protection are often only applicable above a certain threshold in firm size. Strict dismissal protection makes redundancies of workers on open-ended contracts costly and arguably makes employers reluctant to hire on a permanent basis (Bentolila and Bertola, 1990). Fixed-term contracts and other forms of non-standard work such as temporary agency work or project-based contracts offer a cheaper and more flexible alternative to well-protected permanent contracts. Strong plant-level co-determination further strengthens the role of 'insiders'.

In most countries, the coverage of dismissal protection and co-determination is also not universal. If an occupation is characterized by small-batch production, there may, for instance, be no obligation to accept a works council, which could constrain management's prerogative to hire using non-standard contracts. The same is true for dismissal protection, which typically only applies to firms above a size threshold of ten employees (Boeri and Jimeno, 2005). Hence, incentives for the use of fixed-term contracts or agency work should be significantly stronger in occupations characterized by larger firm size.

The interplay of replaceability and flexibility is summarized in Table 1.1. Assuming that both dimensions can be either high or low, we create a  $2 \times 2$  table with different combinations of the two dimensions. What are the consequences for job quality ('good jobs' are loosely defined here as those with wages, contract type and working times that are in line with workers' preferences)? Generally, as explained above low replaceability should be to the advantage of workers. Under this condition, we would expect relatively good jobs irrespective of labour market regulation and industrial relations (i.e. flexibility). Here, working conditions are merely explained by employers' incentive structure as it can be derived from labour market conditions and skill requirements. However, if replaceability is high (i.e. if required skills are either low or high in general, and if there is a sufficient supply of these skills in the external labour market), flexibility matters. In such a case, the employer

*Table 1.1 Replaceability, flexibility and expected job quality (wage and contract type)*

		Replaceability	
		High	Low
Flexibility	High	Precarious jobs	Mostly 'good jobs'
	Low	'Good jobs' (potentially side-effects on labour market performance/public debt)	Very 'good jobs'

faces no incentives to curb his or her desire for a flexible employment arrangement. In order to provide good jobs, external constraints in the form of unions or state regulations have to be imposed. One should note that such constraints are seen as the source of negative externalities which affect job seekers (in the form of lower employment opportunities) or future generations (in the form of higher accumulated debt) (Iversen and Wren, 1998).

The framework presented in Table 1.1 can be applied as a heuristic tool to capture both within-country differences across occupations and changes in specific occupations over time. Skilled manufacturing jobs are typically assumed to feature high levels of skill specificity (Fleckenstein et al., 2011) and remain a stronghold of unions (Palier and Thelen, 2010). Accordingly, they should be stably located in the upper right quadrant of the table. Other jobs have moved over time. Descriptive examples include auxiliary services, such as catering or cleaning, which used to be integrated into large industrial organizations. Outsourcing has significantly limited the possibility for unions to affect working conditions in these services, resulting in a shift from the lower to the upper left quadrant characterized by higher flexibility.

Finally, it should be noted that there is at least one important occupational characteristic determining the use of non-standard and cheap labour which we have not touched upon so far, namely product market conditions. If occupations are exposed to demand fluctuations or pressure for price-competitiveness, incentives for employers to rely on non-standard/cheap jobs should increase. Within our framework, both product market conditions can be conceived of as moderators for the importance of replaceability and flexibility. At the same time, however, one can also expect that the availability of different employment options has repercussions on the dominant production model in certain occupations at least in the medium and long run. When flexible or 'cheap' employment patterns are chosen by a large or increasing number of competitors, individual companies may need to adjust their business model in order to cope with increased price competition.

## THE EVIDENCE COLLECTED IN THIS VOLUME

### Country Chapters

This volume unites a number of country case studies and comparative chapters. The country chapters collected in this volume have a twofold purpose: first, to inductively 'map' the unequal incidence of non-standard

employment across occupations and, second, to assess the analytical framework presented above in different contexts. After giving a general overview of the respective economic and institutional context, each chapter presents descriptive evidence on the share of low pay and atypical employment, using the standard international ISCO-88 occupational classification system (see Appendix A1.1 to this chapter). The chapters also investigate the relationship between non-standard employment shares and job growth over the last approximately 15 years. To take into account different explanatory factors, the chapters present findings from multivariate analyses regarding the probability of being in a non-standard job and, where data are available, of making a transition to standard employment. Finally, qualitative case studies of selected occupations are used to assess the relevance of the analytical categories of replaceability and flexibility.

Focusing on Western Europe and the United States, we have selected national examples representing different country clusters and labour market regimes. As shown by the chapter on Germany by Werner Eichhorst, Paul Marx and Verena Tobsch, and the French case analysed by Baptiste Françon and Paul Marx, the continental European countries exhibit a relatively strict type of labour market regulation, at least for the core segment of the workforce. However, both countries experienced diverging developments regarding non-standard jobs. Whereas in Germany additional service jobs could be created by increasing the share of low paid workers, the more restrictive regulation of the French labour market (including a statutory minimum wage) helped stabilize the pay structure. However, this came at the cost of deep labour market divides in other dimensions. Despite relatively strict regulation in comparison to other countries, fixed-term contracts are the notable feature of the secondary segment in France; and in contrast to Germany, where temporary contracts are mainly used for training and screening purposes, transitions to permanent jobs are less frequent.

The Mediterranean labour market arrangements in Italy (studied by Fabio Berton, Matteo Richiardi and Stefano Sacchi) and Spain (Oscar Molina and Pedro López-Roldán), show a deep segmentation of employment patterns, particularly in service occupations. As with the French case, heavy regulation of the core labour market leads to a strong reliance on flexible forms of work in service occupations at different levels of skills, most notably in the form of fixed-term employment, but increasingly also via various types of freelance work.

The 'flexicurity' cases of the Netherlands and Denmark show different aspects of non-standard employment. As Anne Gielen and Trudie Schils show, the Netherlands is characterized by a flexible segment of temporary workers. Per K. Madsen shows that in Denmark, in contrast, limited

employment protection regulation prevents a heavy use of temporary jobs. In the Dutch case, agency work, fixed-term contracts or part-time work are clearly more important in service sector occupations than in the Danish case where more flexibility is embedded in the general institutional framework of the labour market. What is also remarkable about the Netherlands compared to all other cases is the strong role of collective agreements in regulating non-standard employment options.

The flexible Danish labour market in many aspects resembles the United Kingdom (analysed by Alison Koslowski and Caitlin McLean) and the United States (Moira Nelson). Also in these countries overall labour market flexibility is often seen as a major explanation why non-standard work is less prevalent than in more regulated continental and southern European countries. However, as these two chapters show, non-standard jobs can also play an important role when general labour market flexibility is high. In the flexible labour markets of the UK and the US, standard employment has a slightly different function: there is less emphasis on legal dismissal protection as a dividing line, but on employer-provided benefits, which are often not paid to non-standard workers and therefore have an important segmenting character. As pointed out by Koslowski and McLean for the UK, this motive may be particularly strong for some public-sector occupations characterized by generous employer benefits and extra-statutory redundancy rules.

### **Comparative Chapters**

The second part of the book consists of comparative chapters, which in different ways shed light on how labour market institutions affect occupational diversity in patterns of non-standard employment. Using different samples of countries, some of these chapters deal with socio-economic outcomes attached to non-standard forms of work in a comparative perspective. Others focus on core explanatory factors, mainly institutional features influencing the prevalence of different forms of non-standard employment such as vocational training, trade union strategies and industrial relations, the divide between public and private sector employment, and, last but not least, the crucial role of female labour supply.

In his chapter, Ruud Muffels begins with examining the explanatory power of labour market institutions and occupational membership for employment outcomes. Concerning non-standard workers' transition into standard jobs, he finds meaningful occupational effects but concludes that overall differences in transition rates are larger across countries than across occupations. Analysing the risk of holding a non-standard job in a multi-level analysis, he confirms that institutions (i.e. employment

protection, benefits generosity, active labour market policies and collective bargaining) remain a crucial factor to understand cross-country differences.

In a related analysis, Heejung Chung explains occupational gaps in subjective employment security. This approach is an important complement to the analysis of 'objective' factors of insecurity since individuals possess rich contextual information about their 'true' job prospects. Chung shows, first, substantial within-country variation across occupations and, second, that these occupational gaps systematically vary across countries. This latter variation can be explained by institutional differences, in particular the strictness of employment protection. Hence, Chung confirms the overall premises of the book that occupational and institutional characteristics have to be taken into account in comparative analyses of employment patterns.

Martina Dieckhoff, Vanessa Gash, Antje Mertens and Laura Romeu-Gordo deal with the question of how changing patterns of female labour supply and family policies have affected patterns of non-standard employment in the service sector in Germany and the United Kingdom. They show that family characteristics (such as the number of children and partner income) are important factors affecting women's likelihood to work part-time. Interestingly, the effect of having children becomes weaker over time in Germany (but not in the UK), arguably an effect of the expansion of childcare. Overall, the analysis shows that institutions and household characteristics are important determinants of patterns of female labour supply, which in turn affect the availability of non-standard workers in the service sector.

This topic is also taken up by Janine Leschke in her chapter which provides a broad comparative analysis of how family models and family policy affect the spread of female non-standard employment in three service occupations. She identifies a trade-off in these occupations between the inclusion of women and job quality: the higher the female employment, the more often we observe precarious jobs. This lends support to our argument that female labour supply can be beneficial to the expansion of non-standard jobs. As in Dieckhoff et al., Leschke shows that this trade-off is mitigated in countries with appropriate childcare facilities. In addition, a high share of public employment helps to improve the working conditions of women in service occupations.

Our institutional framework emphasizes the role of trade unions as a potential constraint to the use of non-standard work. While political economists tend to see unions as mere insider agents, Maarten Keune shows that unions all over Europe have been active in containing the trend towards non-standard employment. They do so, he argues, out of

self-interest (e.g. to reduce competitive pressure for insiders) as well as out of concern for the overall employment model. As a consequence, it is key to understand how well unions are positioned in the national and sectoral context to oppose the increasing use of non-standard work. Keune's case study of six European countries shows that differences in industrial relations are important to understand occupational diversity. Unions lacking capacities for inter-sectoral coordination and influence in national policy-making appear rather powerless against developments in service sector occupations.

In the final chapter, Marius Busemeyer and Kathleen Thelen take up and refine the argument that the type of skills predominantly provided by vocational training systems affect the spread of non-standard employment. They argue and show that apprenticeship-based training systems, such as the German one, do reduce replaceability by means of building specific skills that protect young workers against employment precariousness. However, such systems also tend to be exclusive so that substantial shares of any given cohort do not receive training. They also note that even though these training schemes are more and more applied to service sector occupations, their protective function, which is observed in manufacturing, travels less well. They conclude that hybrid training systems with stronger engagement of the state and more school-based training (such as in Denmark) appear better-equipped to reduce the risk of non-standard employment in the service sector.

## **Major Findings**

Despite the many differences of the countries studied in this volume, the contributions reveal some commonalities with regard to the occupational distribution and development of non-standard forms of employment. In general, non-standard employment is more prevalent in service occupations than in manufacturing. A typical finding is that many personal and elementary service occupations exhibit above-average shares of non-standard employment and low pay. This includes in particular cleaners, sales staff and workers in hotels and restaurants. Given the low-skill requirements in these occupations, this finding does not come as a surprise. Less intuitive is the growth of non-standard employment in some high-skill service occupations. A relatively consistent finding across our cases is that (university) teaching and 'creative' occupations are increasingly characterized by flexible forms of employment (but not so much low pay). Various case studies confirm that this pattern can be explained within our framework. These occupations require exceptionally general skills and in many countries 'benefit' from a grown supply of university

graduates. Both aspects increase the replaceability of workers. The fact that many jobs are in the public sector paradoxically increases the problem: the stronger regulation of public jobs further increases incentives to hire only temporarily. Researchers and teachers at public universities are common examples for this problem.

But it would be wrong to portray service occupations as being generally characterized by precarious employment relationships. Office clerks, a sizeable group in many countries, seem to enjoy relatively favourable working conditions. This holds for both, types of employment contract and pay level. This pattern can be explained with the fact that clerks, for instance in large financial organizations, are relatively well organized in many countries. Another reason is that they possess at least to some extent firm-specific knowledge, which in some cases might be difficult to replace. This latter point would also explain why in our case studies, the incidence of low pay and non-standard employment is usually considerably higher among customer service clerks (ISCO group 42) than among office clerks (group 41). Whereas frontline services primarily require replaceable 'soft' skills, office clerks are often more involved in (firm-specific) administrative procedures.

In most countries, finally, manufacturing remains the stronghold of the traditional ('standard') employment relationship. Low pay and non-standard work contracts are limited phenomena here. However, this picture only holds for skilled manufacturing. In most countries, low-skilled industrial jobs have experienced dramatic increases in the share of low pay and non-standard employment. Hence, it appears as if skilled manufacturing workers are less and less able (or willing) to extend their favourable working conditions to the entire sectors.

By and large, we therefore conclude that an occupational perspective on patterns of non-standard and low pay employment adds to our understanding of these phenomena. It should become clear from the evidence presented in this volume that simple dichotomies such as industry vs. services or high vs. low skills do not capture the major dividing lines in contemporary labour markets. Rather, we find these dividing lines within manufacturing as well as between different service occupations. And the level of skills typically required in an occupation alone tells us little about the nature of jobs in that occupation. As banking clerks and skilled manufacturing workers show, company-specific skill formation can provide better protection against precarious employment than forms of university training in abundant supply.

The strong occupational logic in employment patterns notwithstanding, there are of course also important national factors influencing employment patterns. Hence, the occupational factors always interact with insti-

tutional features affecting general labour market flexibility. As we have seen, the difference in regulation between permanent and temporary contracts influences the reliance on flexible jobs. In our sample, more heavily regulated labour markets tend to have higher shares in non-standard employment. However, it should also be noted that this link is not inevitable. Internal flexibility, for instance by the widespread use of working-time accounts, may compensate for lacking external flexibility. Employment practices in several segments of the German labour market illustrate this.

Finally, it should be noted that besides national and occupational determinants of employment patterns, there can also be important sectoral specificities that can make a difference with respect to the institutional flexibility observed. This is most relevant for countries in which collective bargaining at the sectoral level influences the availability and take-up of non-standard forms of employment. The Netherlands is probably the best example for a strong role of collective bargaining in regulating non-standard employment on a sectoral level. More generally, an important difference in this regard can be observed between public and private sector employment. Special dismissal rules for public workers as well as public budgeting arrangements set incentives to rely more on fixed-term contracts there. In such diverse countries as the US and the UK on the one hand and Germany on the other hand, public sectors are characterized by a strong dualism between well-protected permanent staff and temporary workers. Sectoral-level (or company-level) agreements can also contribute to labour market segmentation in terms of social benefits. These are relatively important in countries with less generous public welfare state. In this context, non-standard employment is often seen as a tool to limit eligibility to employer-provided benefits.

## POLICY ISSUES: QUALITY VS. QUANTITY

The comparative analysis of non-standard forms of employment across countries and occupations has policy implications to which we briefly turn below. Generally, research tends to agree that the regulation of labour markets is not directly related to overall (un)employment levels, for instance because institutional restrictions can be compensated for by internal flexibility at the firm level.

However, labour market regulation can actually have negative effects on labour market access for particular groups of society such as young people, women or the low skilled. It can also impact on the employment potential in certain occupations that are particularly sensitive to regulatory interventions or labour costs (as productivity increases may

be limited due to the type of tasks and skills). Hence, a restrictive regulation of the labour market in terms of employment protection, minimum wages or other elements may result in adverse effects on job creation or job quality – especially in the service sector. In other words, more stability and standardization for the core means higher risks of non-standard employment for others. Institutions therefore contribute to what one may want to call labour market segmentation or dualization. We think policy-makers should take into account these asymmetrical effects of labour market regulation.

Therefore it is important to acknowledge that employment dynamism in service occupations has a price in the form of larger heterogeneity in working conditions. Various examples show that if stable employment under relatively compressed working conditions across service occupations is desired, the need to subsidize these jobs in some form emerges. To avoid that, a relatively flexible labour market setting that, at the same time, sets clear minimum standards seems preferable to us. Flexible labour markets that have, for example, lower dismissal protection for open-ended contracts tend to have larger shares of formally permanent contracts (e.g. Anglo-Saxon countries and Denmark). Reforms lowering dismissal protection are difficult for politico-economic reasons, as the experiences of Spain, Italy and France show, but still we think in some cases they could contribute to a less severe segmentation of the labour market.

Such reforms should aim primarily at closing the regulatory gap between different forms of employment, which emerged in many countries. Hence, in many cases deregulation of the core should be complemented with reregulation at the margin. At the same time, deregulation should be accompanied with efforts to improve social protection of the unemployed, particularly in cases where unemployment benefits are tied to previous employment. This is important to prevent labour market dualism to spill over into welfare state dualism. The Danish case is a good example for how employment flexibility and generous benefits can be combined.

We also think that skill investments through general education and vocational training can limit the pressure for low pay and ‘precarious’ jobs. It means that productivity of workers will be higher and labour supply for cheap jobs more limited. At the same time, it allows countries to develop or sustain more ‘ambitious’ production models. Although our analysis shows that high skills are not a perfect insurance against second-tier jobs, at least these skills come with higher employability and therefore improved general labour market prospects. Fostering skill investment via vocational training is a particularly promising way to enhance the probability for young people to move from temporary contracts to permanent employment.

## OUTLOOK

The contributions to this volume show that taking an occupational perspective facilitates our understanding of important developments in today's labour markets. Taking the occupational dimension of employment change seriously allows us to better explain how and to what extent labour market reforms affect employment patterns, what the crucial trade-offs between regulation and deregulation are and why the effects of institutional changes are different across the economy. Of course, occupational employment practices are heavily influenced by the larger institutional environment and skill formation regimes. Our volume is only a first step towards understanding how occupational characteristics interact with these institutions. We hope that it will inspire more comparative research on employment practices below the level of national labour markets.

## NOTE

1. Growing labour market inequality and occupational divergence is also identified in the literature on the polarization of the job structure (Autor et al., 2003; Autor and Dorn, 2013; Goos and Manning, 2007). Driven by technological progress and globalization, routine tasks are increasingly under pressure by automatization, outsourcing or deteriorating working conditions. However, polarization is mainly attributed to global economic integration and technological innovations and the debate has been focused on rather flexible labour market environments in English-speaking countries (where jobs generally tend to be more 'temporary' than in Europe). As a consequence, this literature has paid more attention to pay differentials across jobs and occupations than to the incidence of non-standard employment.

## REFERENCES

- Auer, P. and S. Cazes (2003): 'The resilience of the long-term employment relationship'. In: P. Auer and S. Cazes (eds), *Employment Stability in an Age of Flexibility. Evidence from Industrialized Countries*. Geneva: International Labour Office, pp. 22–58.
- Autor, D.H. (2003): 'Outsourcing at will: the contributions of unjust dismissal doctrine to the growth of employment outsourcing', *Journal of Labor Economics*, 21 (1), 1–42.
- Autor, D.H. and D. Dorn (2013): 'The growth of low-skill service jobs and the polarization of the US labor market', *American Economic Review*, 103 (5), 1553–1597.
- Autor, D., F. Levy and R. Murnane (2003): 'The skill content of recent technological change: an empirical exploration', Proceedings, Federal Reserve Bank of San Francisco, November.

- Barbieri, P. (2009): 'Flexible employment and inequality in Europe', *European Sociological Review*, 25 (6), 621–628.
- Bentolila, S. and G. Bertola (1990): 'Firing costs and labour demand: how bad is eurosclerosis?', *Review of Economic Studies*, 57 (3), 381–402.
- Boeri, T. (2011): 'Institutional reforms and dualism in European labor markets'. In: O. Ashenfelter and D. Card (eds), *Handbook of Labor Economics*, vol. 4, part B. Amsterdam: Elsevier, pp. 1173–1236.
- Boeri, T. and P. Garibaldi (2009): 'Beyond eurosclerosis', *Economic Policy*, 24 (59), 409–461.
- Boeri, T. and J.F. Jimeno (2005): 'The effects of employment protection: learning from variable enforcement', *European Economic Review*, 49 (8), 2057–2077.
- Bosch, G. and S. Lehndorff (2005): 'Introduction: service economies – high road or low road?'. In: G. Bosch and S. Lehndorff (eds), *Working in the Service Sector. A Tale From Different Worlds*. London and New York: Routledge, pp. 1–52.
- Bosch, G., S. Lehndorff and J. Rubery (2009): 'European employment models in flux: pressures for change and prospects for survival and revitalization'. In: G. Bosch, S. Lehndorff and J. Rubery (eds), *European Employment Models in Flux. A Comparison of Institutional Change in Nine European Countries*. Basingstoke and New York: Palgrave Macmillan, pp. 1–56.
- Brady, D. (2007): 'Institutional, economic or solidaristic?: Assessing explanations for unionization across affluent democracies', *Work and Occupations*, 34 (1), 67–101.
- Broschak, J.P. and A. Davis-Blake (2006): 'Mixing standard work and nonstandard deals: the consequences of heterogeneity in employment arrangements', *Academy of Management Journal*, 49 (2), 371–393.
- Busemeyer, M.R. (2009): 'Asset specificity, institutional complementarities and the variety of skill regimes in coordinated market economies', *Socio-Economic Review*, 7, 375–406.
- Cahuc, P. and F. Postel-Vinay (2002): 'Temporary jobs, employment protection and labor market performance', *Labour Economics*, 9 (1), 63–91.
- De Cuyper, N., J. de Jong, H. de Witte, K. Isaksson, T. Rigotti and R. Schalk (2008): 'Literature review of theory and research on the psychological impact of temporary employment: towards a conceptual model', *International Journal of Management Reviews*, 10 (1), 25–51.
- De Cuyper, N., H. de Witte, M. Krausz, G. Mohr and T. Rigotti (2010): 'Individual and organizational outcomes of employment contracts'. In: D. Guest, K. Isaksson and H. de Witte (eds), *Employment Contracts, Psychological Contracts, and Employee Well-Being: An International Study*. Oxford: Oxford University Press, pp. 65–88.
- DiPrete, T.A., D. Goux, E. Maurin and A. Quesnel-Vallee (2006): 'Work and pay in flexible and regulated labor markets: a generalized perspective on institutional evolution in inequality trends in Europe and the US', *Research in Social Stratification and Mobility*, 24, 311–333.
- Ebbinghaus, B. (2006): *Reforming Early Retirement in Europe, Japan and the USA*. Oxford: Oxford University Press.
- Eichhorst, W. and P. Marx (2012): 'Whatever works: dualisation and the service economy in Bismarckian welfare states'. In: P. Emmenegger, S. Häusermann, P. Bruno and M. Seeleib-Kaiser (eds), *The Age of Dualization*. Oxford: Oxford University Press, pp. 73–99.

- Eichhorst, W., R. Konle-Seidl, A. Koslowski and P. Marx (2011): 'Quantity over quality? A European comparison of the changing nature of transitions between non-employment and employment'. In: J. Clasen and D. Clegg (eds), *Regulating the Risk of Unemployment: National Adaptations to Post-Industrial Labour Markets in Europe*. Oxford: Oxford University Press, pp. 281–296.
- Emmenegger, P. (2009): 'Specificity versus replaceability: the relationship between skills and preferences for job security regulations', *Socio-Economic Review*, 7, 407–430.
- Esping-Andersen, G. (1993): 'Post-industrial class structures: an analytical framework'. In: G. Esping-Andersen (ed.), *Changing Classes. Stratification and Mobility in Postindustrial Societies*. London: Sage, pp. 7–31.
- Esping-Anderson (ed) (1996): *Welfare States in Transition – National Adaptations in Global Economies*. London: Sage.
- Esping-Andersen, G. (1999): *Social Foundations of Postindustrial Economies*. Oxford: Oxford University Press.
- Fleckenstein, T., A. Saunders and M. Seeleib-Kaiser (2011): 'The dual transformation of social protection and human capital: comparing Britain and Germany', *Comparative Political Studies*, 44 (12), 1622–1650.
- Freeman, R. (2007): 'Labor market institutions around the world'. In: P. Blyton, E. Heery, N. Bacon and J. Fiorito (eds), *The Sage Handbook of Industrial Relations*. Sage: London, pp. 640–658.
- Gautié, J. and J. Schmitt (2010): *Low Wage Work in the Wealthy World*. New York: Russell Sage Foundation.
- Goldthorpe, J.H. (2000): *On Sociology: Numbers, Narratives, and the Integration of Research and Theory*. Oxford: Oxford University Press.
- Goos, M. and A. Manning (2007): 'Lousy and lovely jobs: the rising polarization of work in Britain', *The Review of Economics and Statistics*, 89 (1), 118–133.
- Guest, D. and M. Clinton (2010): 'Causes and consequences of the psychological contract'. In: D. Guest, K. Isaksson and H. de Witte (eds), *Employment Contracts, Psychological Contracts, and Employee Well-Being: An International Study*. Oxford: Oxford University Press, pp. 121–160.
- Häusermann, S. and H. Schwander (2012): 'Varieties of dualization. Labor market segmentation and insider-outsider divides across regimes'. In: P. Emmenegger, S. Häusermann, B. Palier and M. Seeleib-Kaiser (eds), *The Age of Dualization. The Changing Face of Inequality in Deindustrializing Societies*. Oxford and New York: Oxford University Press, pp. 27–51.
- Hinrichs, K. and M. Jessoula (2012): 'Labour market flexibility and pension reforms: what prospects for security in old age?' In: K. Hinrichs and M. Jessoula (eds), *Labour Market Flexibility and Pension Reforms: Flexible Today, Secure Tomorrow?* Basingstoke; New York: Palgrave Macmillan, pp. 1–28.
- Iversen, T. and A. Wren (1998): 'Equality, employment, and budgetary restraint: the trilemma of the service economy', *World Politics*, 50, 507–546.
- Kahn, L.M. (2007): 'The impact of employment protection mandates on demographic temporary employment patterns: International microeconomic evidence', *Economic Journal*, 117, 333–356.
- King, D. and D. Rueda (2008): 'Cheap labor: the new politics of "bread and roses" in industrial democracies', *Perspectives on Politics*, 6, 279–297.
- Lautsch, B.A. (2002): 'Uncovering and explaining variance in the features of contingent work', *Industrial and Labor Relations Review*, 56 (1), 23–43.
- Lepak, D.P. and S.A. Snell (1999): 'The human resource architecture: toward a

- theory of human capital allocation and development', *Academy of Management Review*, 24 (1), 31–48.
- Lucifora, C. (2000): 'Wage inequalities and low pay: the role of labour market institutions'. In: M. Gregory, W. Salverda and S. Bazen (eds), *Labour Market Inequalities: Problems and Policies Of Low-Wage Employment In International Perspective*. Oxford: Oxford University Press, pp.9–34.
- Marx, P. (2011): 'The Unequal Incidence of Non-Standard Employment across Occupational Groups: An Empirical Analysis of Post-Industrial Labour Markets in Germany and Europe', APSA 2011 Annual Meeting Paper.
- Maurin, E. and F. Postel-Vinay (2005): 'The European job security gap', *Work and Occupations*, 32 (2), 229–252.
- Nunziata, L. and S. Staffolani (2007): 'Short-term contracts regulations and dynamic labour demand: theory and evidence', *Scottish Journal of Political Economy*, 54 (1), 72–104.
- Osterman, P. (1987): 'Choice of employment systems in internal labor markets', *Industrial Relations*, 26 (1), 46–67.
- Palier, B. and K. Thelen (2010): 'Institutionalizing dualism: complementarities and change in France and Germany', *Politics and Society*, 38 (1), 119–148.
- Polavieja, J.G. (2005): 'Flexibility or polarisation? Temporary employment and job tasks in Spain', *Socio-Economic Review*, 3 (2), 233–258.
- Rousseau, D.M. (1995): *Psychological Contracts in Organizations: Understanding Written And Unwritten Agreements*. Thousand Oaks, CA and London: Sage.
- Schalk, R., J. de Jong, T. Rigotti, G. Mohr, J.M. Peiro and A. Cabeller (2010): 'The psychological contracts of temporary and permanent workers'. In: D. Guest, K. Isaksson and H. de Witte (eds), *Employment Contracts, Psychological Contracts, and Employee Well-Being: An International Study*. Oxford: Oxford University Press, pp. 89–120.
- Scharpf, F.W. (1997): 'Employment and the Welfare State. A Continental Dilemma'. In: Bonn (ed.), German American Academic Council Foundation, *Labor Markets in the USA and Germany. Third Public GAAC Symposium, Bonn 10–11 June*. Baden-Baden: Nomos, pp. 387–416.
- Scharpf, F.W. (2000): 'Economic Changes, Vulnerabilities, and Institutional Capabilities'. In: F.W. Scharpf and V.A. Schmidt (eds), *Welfare and Work in the Open Economy. Vol. 1: From Vulnerability to Competitiveness*. Oxford: Oxford University Press, pp.21–124.
- Schein, E.A. (1978): *Career Dynamics: Matching Individual and Organizational Needs*. Reading: Addison-Wesley.
- Schmid, G. (2010): 'Non-standard employment and labour force participation: a comparative view of the recent development in Europe', *IZA Discussion Paper*, 5087.
- Streeck, W. (2012): 'Skills and politics: general and specific'. In: M.R. Busemeyer and C. Trampusch (eds), *The Political Economy of Collective Skill Formation*. Oxford and New York: Oxford University Press, pp.317–352.
- Van Dyne, L. and S. Ang (1998): 'Organizational citizenship behavior of contingent workers in Singapore', *Academy of Management Journal*, 41, 692–703.
- Visser, J. (2007): 'Trade union decline and what next. Is Germany a special case?', *Industrielle Beziehungen*, 14 (2), 97–117.

**APPENDIX A1.1: INTERNATIONAL STANDARD  
CLASSIFICATION OF  
OCCUPATIONS (ISCO-88) (TWO-  
AND THREE-DIGITS)**

**MAJOR GROUP 1: LEGISLATORS, SENIOR OFFICIALS AND  
MANAGERS**

- 11 Legislators and senior officials
- 111 Legislators and senior government officials
- 114 Senior officials of special-interest organizations
  
- 12 Corporate managers
- 121 Directors and chief executives
- 122 Production and operations managers
- 123 Other specialist managers
  
- 13 Managers of small enterprises
- 131 Managers of small enterprises

**MAJOR GROUP 2: PROFESSIONALS**

- 21 Physical, mathematical and engineering science professionals
- 211 Physicists, chemists and related professionals
- 212 Mathematicians, statisticians and related professionals
- 213 Computing professionals
- 214 Architects, engineers and related professionals
  
- 22 Life science and health professionals
- 221 Life science professionals
- 222 Health professionals (except nursing)
- 223 Nursing and midwifery professionals
  
- 23 Teaching professionals
- 231 College, university and higher education teaching professionals
- 232 Secondary education teaching professionals
- 233 Primary and pre-primary education teaching professionals
- 234 Special education teaching professionals
- 235 Other teaching professionals
  
- 24 Other professionals
- 241 Business professionals

- 242 Legal professionals
- 243 Archivists, librarians and related information professionals
- 244 Social science and related professionals
- 245 Writers and creative or performing artists
- 246 Religious professionals
- 247 Public service administrative professionals

### MAJOR GROUP 3: TECHNICIANS AND ASSOCIATE PROFESSIONALS

- 31 Physical and engineering science associate professionals
- 311 Physical and engineering science technicians
- 312 Computer associate professionals
- 313 Optical and electronic equipment operators
- 314 Ship and aircraft controllers and technicians
- 315 Safety and quality inspectors
  
- 32 Life science and health associate professionals
- 321 Life science technicians and related associate professionals
- 322 Health associate professionals (except nursing)
- 323 Nursing and midwifery associate professionals
  
- 33 Teaching associate professionals
- 331 Primary education teaching associate professionals
- 332 Pre-primary education teaching associate professionals
- 333 Special education teaching associate professionals
- 334 Other teaching associate professionals
  
- 34 Other associate professionals
- 341 Finance and sales associate professionals
- 342 Business services agents and trade brokers
- 343 Administrative associate professionals
- 344 Customs, tax and related government associate professionals
- 345 Police inspectors and detectives
- 346 Social work associate professionals
- 347 Artistic, entertainment and sports associate professionals
- 348 Religious associate professionals

### MAJOR GROUP 4: CLERKS

- 41 Office clerks
- 411 Secretaries and keyboard-operating clerks

- 412 Numerical clerks
- 413 Material-recording and transport clerks
- 414 Library, mail and related clerks
- 419 Other office clerks

- 42 Customer services clerks
- 421 Cashiers, tellers and related clerks
- 422 Client information clerks

#### **MAJOR GROUP 5: SERVICE WORKERS AND SHOP AND MARKET SALES WORKERS**

- 51 Personal and protective services workers
- 511 Travel attendants and related workers
- 512 Housekeeping and restaurant services workers
- 513 Personal care and related workers
- 514 Other personal services workers
- 516 Protective services workers
  
- 52 Models, salespersons and demonstrators
- 521 Fashion and other models
- 522 Shop, stall and market salespersons and demonstrators

#### **MAJOR GROUP 6: SKILLED AGRICULTURAL AND FISHERY WORKERS**

- 61 Skilled agricultural and fishery workers
- 611 Market gardeners and crop growers
- 612 Animal producers and related workers
- 613 Crop and animal producers
- 614 Forestry and related workers
- 615 Fishery workers, hunters and trappers

#### **MAJOR GROUP 7: CRAFT AND RELATED TRADES WORKERS**

- 71 Extraction and building trades workers
- 711 Miners, shotfirers, stone cutters and carvers
- 712 Building frame and related trades workers
- 713 Building finishers and related trades workers
- 714 Painters, building structure cleaners and related trades workers
  
- 72 Metal, machinery and related trades workers
- 721 Metal moulders, welders, sheet-metal workers, structural-metal preparers and related trades workers

- 722 Blacksmiths, tool-makers and related trades workers
- 723 Machinery mechanics and fitters
- 724 Electrical and electronic equipment mechanics and fitters
  
- 73 Precision, handicraft, craft printing and related trades workers
- 731 Precision workers in metal and related materials
- 732 Potters, glass-makers and related trades workers
- 733 Handicraft workers in wood, textile, leather and related materials
- 734 Craft printing and related trades workers
  
- 74 Other craft and related trades workers
- 741 Food processing and related trades workers
- 742 Wood treaters, cabinet-makers and related trades workers
- 743 Textile, garment and related trades workers
- 744 Pelt, leather and shoemaking trades workers

#### MAJOR GROUP 8: PLANT AND MACHINE OPERATORS AND ASSEMBLERS

- 81 Stationary plant and related operators
- 811 Mining and mineral-processing-plant operators
- 812 Metal-processing-plant operators
- 813 Glass, ceramics and related plant operators
- 814 Wood-processing- and papermaking-plant operators
- 815 Chemical-processing-plant operators
- 816 Power-production and related plant operators
- 817 Industrial robot operators
  
- 82 Machine operators and assemblers
- 821 Metal- and mineral-products machine operators
- 822 Chemical-products machine operators
- 823 Rubber- and plastic-products machine operators
- 824 Wood-products machine operators
- 825 Printing-, binding- and paper-products machine operators
- 826 Textile-, fur- and leather-products machine operators
- 827 Food and related products machine operators
- 828 Assemblers
- 829 Other machine operators not elsewhere classified
  
- 83 Drivers and mobile plant operators
- 831 Locomotive engine drivers and related workers
- 832 Motor vehicle drivers

- 833 Agricultural and other mobile plant operators
- 834 Ships' deck crews and related workers

**MAJOR GROUP 9: ELEMENTARY OCCUPATIONS**

- 91 Sales and services elementary occupations
- 911 Street vendors and related workers
- 912 Shoe cleaning and other street services elementary occupations
- 913 Domestic and related helpers, cleaners and launderers
- 914 Building caretakers, window and related cleaners
- 915 Messengers, porters, doorkeepers and related workers
- 916 Garbage collectors and related labourers
  
- 92 Agricultural, fishery and related labourers
- 921 Agricultural, fishery and related labourers
  
- 93 Labourers in mining, construction, manufacturing and transport
- 931 Mining and construction labourers
- 932 Manufacturing labourers
- 933 Transport labourers and freight handlers

**MAJOR GROUP 0: ARMED FORCES**

- 01 Armed forces
- 010 Armed forces

