

Social Protection
of
Atypical Employees
and
the Transition
to a Service Economy

CHRISTOPHER GATZ

TÜBINGEN
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<http://hdl.handle.net/10900/99409>

<http://nbn-resolving.de/urn:nbn:de:bsz:21-dspace-994090>

<http://dx.doi.org/10.15496/publikation-40790>

Tübingen University Press 2020
Universitätsbibliothek Tübingen
Wilhelmstr. 32
72074 Tübingen
tup@ub.uni-tuebingen.de
www.tuebingen-university-press.de

ISBN (Hardcover): 978-3-947251-13-1

ISBN (PDF): 978-3-947251-16-2

Umschlaggestaltung: Sandra Binder, Universität Tübingen

Foto Cover: Bild von Barbara A Lane auf Pixabay

Satz und Layout: Sandra Binder, Universität Tübingen

Druck und Bindung: readbox unipress in der readbox publishing GmbH

Printed in Germany

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1. INTRODUCTION

1.1 THE SHIFTING STRUCTURE OF THE LABOUR MARKET

For more than thirty years, labour markets in all developed economies have been subject to a trend of profound change, which so far shows no sign of abating or slowing: namely, industry employment is in a process of steady decline. Averaged over 18 industrialised countries, manufacturing accounted for 28% of all jobs in 1971; by the year 2005, the share had dropped to 16%. Services, by contrast, were undergoing the exact opposite trend: growing from 52% to 72% of total jobs in the same period (for more details see chapter 3). Yet this shift has not been unfolding in a uniform way in each affected country. Services are a rather heterogeneous category, comprising a whole range of various activities with very diverse skill requirements. While some are solely market-based, others are to a large extent provided by public actors. Contingent on the institutional environment and the role of the state, the composition of the service sector differs widely across countries. In 2008, for instance, it was ‘food and fun services’—Esping-Andersen’s (1990) terminology for restaurants, hotels, trade, and other personal services—that accounted for more than 30% of total service employment in Australia, New Zealand, Britain, Japan, and Spain, whereas in Norway, Finland, Belgium, and Denmark the correspondent share was about ten percentage points lower. If, however, welfare services are observed, a mirror pattern emerges, in that those countries with a smaller proportion of ‘food and fun services’ exhibit a roughly ten percentage points higher fraction of welfare services. Likewise, the pace by which the rise of services has been proceeding is not always the same. In Britain, Australia, the Netherlands, and Norway merely 10% of all jobs were in manufacturing in 2008, compared to still almost 20% in Germany and Italy. From this we can see that, despite a general trend towards an increasingly service-based economy common to all industri-

alised countries, there is significant variation in detail and scale of how this change impacts labour markets, stirring particular interest in the underlying reasons for differing trajectories.

The current shift towards more service employment is not the only upheaval on the labour market, as it concurs with a steep rise in the number of part-time and temporary contracts, often referred to as ‘atypical employment’ or ‘non-standard employment’.¹ Between 1996 and 2007, the share of part-time jobs rose from 16% to 21% in the EU15, the share of temporary jobs from 10% to 12%. In the Netherlands, the country with most part-time jobs, no less than 47% of all employees worked shorter hours in 2008, up from 21% in 1983. Even those countries with the least part-time employment, Spain and Portugal, witnessed an increase from 6% to 12% over the same period. Temporary employment is less widespread, but marked by significant growth, too. In Spain, its fraction of total jobs rose from 10% to 24% between 1987 and 2008, in Portugal from 11% to 17%. The simultaneous increase in atypical work and the growing importance of services is no mere coincidence; as a matter of fact, the service sector relies much more on such flexible work arrangements than all other sectors, manufacturing in particular. This is clearly reflected in employment structures: in manufacturing, only 10% of employees were non-standard in the EU15 in 2007, whereas part-timers accounted for 25% and fixed term workers for 13% of all employees in services.

There are specific reasons for the higher dependency of service providers on atypical work. Because major parts of the tertiary sector are still fundamentally based on face to face interaction, firms have to configure their

1 Both terms are used synonymously.

staffing policies in a way that most closely matches consumer demand. Atypical workers play a key role in this strategy by functioning as necessary buffers, providing flexibility to cope with temporary demand peaks. But not just for employers, also for employees non-standard work arrangements may turn out to be beneficial since they may facilitate to combine employment with family obligations or act as stepping stones into work for groups with little attachment to the labour market such as the low-skilled, the young or immigrants (see chapter 2).

Irrespective of these potential advantages, atypical work also undoubtedly involves a whole range of specific risks to employees, grave enough to dominate major parts of the debate on non-standard employment. It is widely accepted that part-time and fixed term workers on average earn less, face shorter tenures and receive lower benefits (see chapter 3). It thus comes as no surprise that atypical employees are frequently described as a generally troubled and disadvantaged group, while standard workers enjoy extensive privileges in that they are paid more generously, have open-ended contracts, easy access to fringe benefits and social security coverage. One of the most famous and earliest works taking this perspective stems from Doeringer and Piore (1971), who, as part of segmentation theory, conceived of atypical workers as forming an underprivileged second tier of the labour market. Recently, this line of thought has re-emerged under the label of dualism. At the heart of this concept is the very general notion that one specific group (the insiders) enjoys significantly higher advantages than another (the outsiders). What these advantages are specifically, and which group is thought to be the insiders (and which one the outsiders), depends on the objective a researcher pursues and can be defined in numerous ways. When discussing dualism, it is thus not necessarily non-standard workers that must be thought of as outsiders. Other operationalisations would be possible, as applied, for example, by Iversen and Soskice (2009), who draw the line between skilled and semi-skilled workers rather than between standard and non-standard. It nonetheless seems more common

to explicitly identify atypical employees as labour market outsiders as is done, for instance, by Häusermann / Schwander (2013) and King / Rueda (2008), the latter of whom even go so far to equate atypical employment with 'cheap labour'. Both studies share the assumption that dualism on the labour market is—among other things—a cleavage between standard and atypical workers.

Even if one accepts the idea that dualism is the unequal treatment of standard and atypical employees to the detriment of the latter, it remains unclear in which way this discrimination will manifest itself. Emmenegger et al. (2012) rightly note that dualism is a multi-faceted phenomenon which affects a wide range of different societal, economic and political dimensions. Therefore, if dualism is to be used as a scientific concept, its meaning and scope must be carefully delineated. For their own research, Emmenegger et al. distinguish three dimensions of dualism: labour market dualism means that outsiders face disadvantages regarding wages, employment stability and mobility, as well as opportunities for further training. Social protection dualism refers to patchy coverage of social security systems and unequal benefits. Political integration dualism refers to the under-representation of outsider interests in the democratic system as outsiders increasingly refrain from active participation in established ways. It is the former two dimensions which are at the heart of this thesis, while the latter one is not further discussed here. Most research interest so far has been attracted by labour market dualism, which is apparent in the huge number of studies examining the downside of atypical employment in terms of job tenure and remuneration (see chapter 3). Social protection dualism, in comparison, has commanded relatively less attention, although it seems most likely that atypical employees more often fail to meet qualification criteria and receive less generous benefits.

As to the underlying causes that have brought about labour market and welfare dualism, i.e. why exactly some groups receive a better treatment than others, there is a lively debate. Emmenegger et al. (2012)

emphasise that dualism is no necessary outcome of the employment shift towards the tertiary sector and the rise in atypical employment associated with it, but rather a result of institutions failing to protect the rights of outsiders. Dualism is thus a consequence of political decisions on the design of rules that govern labour markets and welfare schemes. One critical concept in this context is flexibilisation at the margin, referring to a reform strategy that leaves the rights of standard workers largely intact while cutting back on the rights of atypical employees (Barbieri / Scherer 2009, Eichhorst / Marx 2011, Eichhorst / Tobsch 2015). This strategy has been applied with particular success in the realm of employment protection legislation where temporary work contracts have seen significant liberalisation, when at the same time the protection of standard workers has remained virtually unchanged. This way, policy makers have hoped to allow for more labour market flexibility without incurring disaffection of voters on standard jobs with entrenched interests (Palier / Martin 2007, Palier / Thelen 2010, Saint-Paul 2002). Yet the application of flexibilisation at the margin as a reform strategy is not restricted to the field of employment protection; it stretches further to areas such as wage determination and social policy. The coverage of wage agreements, for example, has become more fragmented, especially in Continental European countries, which leaves outsiders with lower earnings than insiders who remain fully covered. The same logic holds for insurance based welfare schemes which become more and more focused on employees with a sufficient contribution record, effectively barring those with a fractured employment history—often atypical workers—or offering less generous benefits to this group (Hassel 2011, Kvist / Greve 2011, Palier / Thelen 2010, Rueda 2005, Seelaib-Kaiser / Saunders / Naczyk 2011).

Flexibilisation at the margin helps to explain the emergence of dualism from a politics point of view; the reason why a strategy of partly de-regulation often seems to be more successful than efforts for wholesale liberalisation lie in actors' specific preferences. First of all, employers, who are keen to contain staffing expens-

es, wish to target any benefits and entitlements of those employees whose skills are indispensable for the firm's success in order to retain them as long as possible. Flexible, i.e. usually atypical, workers who may be nonetheless crucial for a firm's success, especially in services, but who are also fairly easy to replace should thus receive a less generous treatment (Seelaib-Kaiser / Saunders / Naczyk 2011). Unions, too, may under certain circumstances view dualism as the lesser evil. If unions are in a weakened position, e.g. due to high unemployment or declining membership, they may not be able to strike deals on national or industry level, but have to resort to firm level bargaining which is likely to result in better settlements for a limited group of privileged workers, most of them in manufacturing. Unions may also have better incentives to protect social benefits of standard industrial workers because these form their core constituency and can exert greater political influence than less organised atypical workers (Palier / Thelen 2010). Another suspect to foster dualism is social democratic parties. Since their main electorate is skilled workers, i.e. labour market insiders holding standard jobs, these parties face incentives to meet calls for flexibilisation and cost containment by concentrating the costs of such reforms on outsiders, barely touching upon the rights of insiders (Rueda 2005). The same logic is argued to apply to Christian democratic parties in systems of proportional representation. These parties basically act as platforms to collect votes across large parts of the middle class, including both white-collar, high-income earners as well as skilled blue-collar workers with modest wages supportive of a certain degree of social protection and redistribution. If Christian democratic parties then set about forming centre-right coalition governments, they must find ways to accommodate contradictory demands of their constituencies, namely to provide social security without too much redistribution, which can be accomplished by limiting benefits mostly to the latter group of skilled workers, barring unskilled low-income earners (Iversen / Soskice 2009).

What remains open to question is whether or not dualism is a lasting reform strategy that will permanent-

ly segment employees in one privileged and one underprivileged tier. While the theories mentioned above imply that dualism has the potential to last, others argue it might rather be a transitory state, eventually leading to erosion of insider privileges, as outsiders increasingly put competitive pressure on them (Eichhorst / Marx 2011). In this view, dualism is just a gateway to wholesale flexibilisation.

While a considerable number of case studies exists on welfare dualism, informing us in detail about the design of rules that cause specific forms of dualism and the political processes that have brought them about (see e.g. Eichhorst / Marx 2011, Palier / Thelen 2010, Seelaib-Kaiser / Saunders / Naczyk 2012), they do not provide a comprehensive view across a bigger number of countries. As a result, evidence on dualism based on internationally comparable time-series data is scarce. The main reason for this may be the inherent complexity of the term dualism: the magnitude of ways to define insiders and outsiders may impede on the comparability of studies. If a researcher aims for a cross section analysis of welfare dualism, it is therefore critical to, first of all, outline in an internationally applicable and consistent way who the population groups are to be studied. Following major parts of the literature, this thesis is restricted to deal only with inequalities between standard and atypical employees. The former work on full-time, permanent contracts, whereas the latter work either part-time, on a fixed term basis or both. This division seems appropriate since the studies on welfare dualism cited above suggest that it is primarily atypical employees who are likely to be disadvantaged in social security schemes due to their more fragmented employment histories and lower earnings. Standard workers, by contrast, will in most cases meet all employment requirements and receive full benefits. Welfare dualism is consequently defined as the unequal treatment of standard and atypical employees in the system of social provision.

One must not confuse, however, atypical employment with precarious employment. Originating from Italy, Spain, and France, the notion of precarity has gained currency in almost all developed economies over

the past few years. Precarity in its broadest sense does not only encompass conditions and terms of work, but also a general state of being deprived of opportunities in life and of participation in society. With regard to employment it hence refers to a kind of work that is uncertain, poorly remunerated, and resulting in low (or none at all) social protection entitlements (Arnold / Bongiovi 2013). All of these characteristics will mostly affect non-standard workers; precarity is thus chiefly an issue of part-time and fixed term workers. Yet this relation does not hold in the reversed way: many atypical employees may simply be working parents with higher education in well paid jobs whose socio-economic state is far from being precarious despite reduced working time or limited tenure. Atypical employees surely face a higher risk of precarity but they need not be precarious. One more problem connected to the term of precarity lies in its inherent normativity. Precarity and atypical jobs are by definition undesirable states politics should take measures to contain. This, however, is not a claim this thesis wants to make. Atypical employment may be useful for groups as it helps to reconcile work with family life, acts as a stepping stone back in employment, or simply because employees wish to have more leisure time; it might not be a mere makeshift for job seekers in order to bridge the time until they find standard work. For these reasons it would be wrong to mark all atypical work as inferior. Instead, this thesis seeks to analyse non-standard employment in a non-normative way, deliberately avoiding the term precarity.

1.1 RESEARCH QUESTIONS

The aims of this study are twofold. The first is to develop quantitative indices by which social protection of standard and atypical employees in case of unemployment and sickness can be gauged in a cross-time, cross-section manner, informing us about existence, scale and evolution of welfare dualism over various countries and years, as such a measure is so far practically non-exis-

tent.² Then, the descriptive results are to be interpreted and made sense of in the context of Esping-Andersen's famous three worlds typology. Since Esping-Andersen is primarily concerned with standard workers and social protection for them, in a first step hypotheses must be developed as to how atypical workers may be treated in his typology and then, in a second step, it is scrutinised whether or not reality fits the hypothesised patterns. The focus of this study is exclusively on the rules governing the entitlements of benefits. It is not an attempt to assess how these rules translate into aggregated empirical outcomes such as number of recipients or average duration of receipt in each country and year. It is thus a comparative study on institutional rules of welfare entitlements and their evolution, irrespective of country and time-specific labour market conditions.

The second aim is to apply these quantitative indices in order to analyse in more detail the extent to which social welfare entitlements, particularly for atypical employees, as part of the institutional environment in an economy, give incentives that help or hinder various economic branches to build up employment. As the expansion of atypical employment is closely linked to the process of tertiarisation, it seems reasonable to assume that the integration of atypical employees into the systems of social security plays a non-negligible role in shaping the sectoral composition of employment. If, for example, high unemployment benefits lift up reservations wages, employers in service sectors with a low wage floor may struggle to find workers. On the other hand, in manufacturing there is a high reliance on standard workers with firm-specific skills demanding generous levels of protection. Welfare retrenchment in this case may lead to a shortage of firm-specific skills, hurting employment in manufacturing.

There has been plenty of theorising on these relationships, often intricate and contradictory, yet there is no study so far testing these theories in direct comparison with each other. Nor has it so far been possible

to make statements whether welfare dualism affects employment in different industries in various ways. This study wants to shed more light on the employment effects of social security schemes by examining which kinds of specific welfare arrangements, including dualism, are conducive to employment in specific economic sectors.

To reach this aim, it is necessary to define more precisely what is meant by the terms social security, social protection, and welfare which are used interchangeably. This study covers only welfare schemes providing financial support in case of job loss and illness. There are many more situations in which people may be in need of support (e.g. maternity and old-age), yet due to limitations of space and because they feature prominently in comparative welfare state research, I will deal only with unemployment and sickness protection. Both are frequently two-tiered: initially, there is a contribution-based, non-means-tested scheme whose benefits are usually limited in time, requiring a contribution record in order to become eligible. If such a scheme does not exist, or if the claimant fails to meet the qualification requirements, or if the maximum duration of receipt has been reached, the second-tier benefit ensues, which typically is state-funded and means-tested, but open-ended and not based on contributions prior to benefit receipt. It serves the purpose of providing a minimum income to those who have no other sources of income left.

Within this framework of two-tiered social protection schemes, dualism can materialise in three distinct forms: first, atypical employees are excluded altogether from first-tier benefits through high work and contribution requirements, while standard employees meet these requirements in almost all cases. Second, atypical employees who are eligible to first-tier benefits receive payments whose amount and duration is less than what standard employees receive. Third, benefits of the second tier—the main source of social security for many atypical employees—are significantly less generous than first-tier benefits.

In order to estimate the extent by which each of

² Or afflicted by serious measurement and interpretation problems, see section 1.2.

these forms is present in a welfare scheme, four different aspects need to be observed and compared: (1) accessibility (i.e. the qualifying conditions for the first tier), (2) generosity of first-tier benefits for standard workers, (3) generosity of first-tier benefits for atypical workers, and (4) generosity of second-tier benefits. The distinct ways in which countries combine these four aspects is called social protection arrangement³. A country, for example, could tie high first-tier benefits for standard and non-standard employees to strict qualifying conditions while the second-tier benefit remains low. In this case it would be possible to state that dualism arises from harsh eligibility criteria to first-tier benefits and the low level of second-tier support, but within the domain of first-tier schemes standard and non-standard employees are treated almost equally. The description and analysis of such kinds of potential dualising relationships constitutes the first empirical part of this study.

As for the research strategy, in a first step quantitative indices are developed to measure the four aspects mentioned above. Since countries are likely to vary in the designs of their social protection arrangements, it is interesting to see if patterns emerge of countries with similar arrangements, and thus similar forms of dualism, particularly with respect to Esping-Andersen's three worlds typology. From this, we would be able to learn if specific types of dualism are more common than others. The method at hand to check for common patterns is cluster analysis, of which, as a second step, I perform four in this thesis. The first two analyses are concerned with unemployment benefits and use as variables the indices measuring the four aspects described above. One analysis deals with the year 1991 and the other one with the year 2006, to check how benefits evolved over time. The same is subsequently repeated for sickness benefits. Because clustering is a merely descriptive tool, a third step multivariate regression is applied to see whether there are general trends in how social protection arrangements are structured. For that purpose, each of the indices are regressed on one another, resulting in a

total of four distinct regressions for each scheme. The second empirical part of this study then turns towards the consequences of social protection arrangements on a country's employment structure. Once again, a series of panel regressions is conducted with employment shares of different industries as dependent variable and the indices (together with some controls) as the regressors.

The study proceeds as follows. In the remainder of the introduction, I give an overview of previous efforts to measure welfare entitlements and why they are not suited to capture the situation of non-standard workers. Presenting detailed figures, Chapter 2 traces exactly by how much part-time and fixed term employment has been growing over the past few decades and demonstrates that this process is primarily concentrated on the expanding service sector. It further gives reasons why both trends, i.e. growth in services and in atypical employment, are so closely linked to each other. Chapter 3 elaborates on the underlying causes driving service growth as identified in economics literature. Chapter 4 delves into the economic consequences of atypical work on employees by providing an overview of literature analysing micro data of non-standard workers' earnings and tenures. There is consent that atypical employees face lower wages and employment stability in most countries, effectively lowering their chances to acquire the same welfare entitlements as standard employees. Chapter 5 explains the purpose, basic principles and general institutional designs of social protection schemes discussed in this study—i.e. unemployment protection, sickness protection, and second-tier minimum income protection—as they are typically in place in most developed countries. It also gives a brief overview of Esping-Andersen's three worlds of welfare capitalism. Chapter 6 is the beginning of the analytical part of this study. It first sets out in greater detail, based on the discussions in preceding chapters, which specific aspects of welfare entitlements are decisive if their generosity, especially for atypical employees, is to be measured by indices. Then it introduces the method by which the indices are constructed, the data used, and presents first descriptive results. The next sub-chapter

3 This term is also used by Seelaib-Kaiser et al. (2012).

derives hypotheses from Esping-Andersen's three world theory on the social protection of atypical employees in each world and the resulting types of dualisation. This is followed by cluster analyses and regressions to see to what extent the hypotheses hold. Chapter 7 deals with the second research question of this study. First, it sums up existing theories and derives specific hypotheses to be tested. The second part then subjects these hypotheses to close scrutiny by deploying multivariate panel regressions. Chapter 8 summarises the main results and concludes.

1.2 LITERATURE OVERVIEW

The debate on welfare state retrenchment and reform is characterised by what Pierson (1996, 2001) calls the 'dependent variable problem'. It refers to the striking ambiguity of the term 'welfare state' which can be used to label a whole range of different policies and institutional arrangements. The provision of social services, for instance, can be viewed as one defining characteristic of welfare states, just as transfers and redistribution to the underprivileged, although both things are essentially not the same. The meaning of 'welfare state' is thus often blurry and so are scholars' attempts to operationalise it.

If generosity and retrenchment are to be examined, two approaches can be distinguished, both of which have been widely applied. One is to use aggregate social spending on various schemes as the dependent variable (e.g. Castles 2004, Gornick / Meyers 2001, Siegel 2002). This has been criticised because it does not allow to draw any conclusions whether a change in spending is caused by altered regulations or a change in the economic environment (an economic downturn, for example, is likely to drive up the number of welfare claimants). Proponents of the aggregate measure try to fix this problem by using 'adjusted' spending instead, i.e. aggregate spending divided by the number of recipients. Even this procedure, however, leaves some issues unresolved; most prominently, it remains indistinguishable

if changes to entitlements or changes to institutional governance are accountable for fluctuations in spending. Moreover, aggregate spending often reacts with a time lag, making its real determinants hard to discern (Green-Pedersen 2004, Kühner 2007, Scruggs / Allan 2004).

Another approach was chosen by Esping-Andersen (1990). Rather than focusing on aggregate spending figures, he suggests paying more attention to individual benefit entitlements as these have the advantage of being robust against changes in the economic environment, do not have a time lag, and reflect more adequately what a welfare state offers its citizens in terms of financial support. The drawback in this approach—despite its intuitive logical appeal—is that it is difficult to implement in research practice. The challenge is methodologically: while spending data are easy to come by and exploit, individual entitlements are contingent on a multitude of factors such as eligibility rules, replacement rates, taxation and so on. Esping-Andersen's solution to this problem is the construction of a single index merging all these factors into one single number that can be conveniently processed. He calls this index *decommodification index*, referring to the extent by which social security is removed from market dependency, applicable to all types of protection schemes that offer earnings replacements. The study at hand follows this approach since aggregate spending data are essentially incapable of informing us as to the disparities in protection between standard and non-standard workers. Understanding welfare dualism thus seems impossible unless individual entitlements are made the object of investigation.

The basic idea of the decommodification index was later taken up by Scruggs (2004) who extended the database to encompass several decades starting in the 1960s, revised the computation method, and renamed it *generosity index*. Recently, the database has been further expanded and the methodology refined (Scruggs / Jahn / Kuitto 2013). It comprises indices on unemployment and sickness benefits as well as on pensions; each index (except for pensions which are not included in

this study) is composed of four variables: replacement rates, benefit duration, required weeks in employment previous to benefits, and waiting days before the disbursement of the benefit starts. All variables are computed for a worker 40 years old with 20 years of employment history. The aggregation of the variables is done by the addition of the Z-scores of all variables, calculated on basis of the log-values of the raw variables across all countries and years, with replacement rates given a double weight. The resulting score is finally weighted by the coverage rate of the respective benefit.

This seminal approach allows one to compare the generosity of individual welfare entitlements across a wide variety of countries on a time series basis, therewith opening up an entirely new perspective in comparative welfare state research. Yet with regards to the goal of this study, namely to analyse welfare entitlements of atypical workers, the generosity index is not well suited because its focus is solely on standard entitlements. Replacement rates in the generosity index, for instance, are calculated for workers with a full-time work week, while corresponding figures for workers with lower earnings are not yet available. Furthermore, the only variable to measure the strictness of qualifying conditions, which is of foremost importance to atypical workers, is the number of employment weeks required to become eligible, even though there are other factors, such as the number of minimum hours of work per week, certainly posing no less an obstacle. Given that qualifying conditions are much harder to meet for atypical employees, they should likewise carry a higher weight in an index designed to gauge entitlements of non-standard workers. The generosity index is hence an excellent point of departure, but needs refinement to be applicable to part-time and fixed term workers.

A more explicit focus on atypical employment is placed by Tangian (2011). Originally designed to assess the scale of flexicurity, i.e. the balance between employment flexibility and social security, in international comparison, Tangian invented a new method by which social protection of both standard and atypical employees can be measured simultaneously. His ap-

proach deviates from Scruggs' and Esping-Andersen's in one fundamental point: rather than expressing the generosity of entitlements by a numeric value directly derived from predefined empirical indicators (e.g. replacement rates, duration of receipt etc.), he suggests to simply rank international welfare schemes according to their generosity. By doing so, he avoids the contentious issue of assigning exact numerical values and weights to each of the numerous aspects constitutive for benefit generosity; instead, it suffices to be able to state that one benefit scheme is more generous than another. The resulting ranks can be easily transformed into quantitative scores. What is appealing about Tangian's original procedure is that protection of both standard and non-standard employees is ranked on the same scale and in direct comparison with each other. It is therefore possible to calculate the precise difference in generosity between standard and atypical employees' entitlements, which could be interpreted as a quantitative measure of welfare dualism. Just like the generosity index, Tangian's method is ready to be applied to a variety of provisions such as unemployment, sickness, maternity, pensions, and paid holidays.

In spite of all these virtues, there are some severe caveats. One is that Tangian does not specify in greater detail which criteria were consulted in order to rank the schemes. This would not be too serious, if his primary goal were to present and demonstrate the basic functioning of his new method. Yet in this case it obscures that there is one principal objection against ranking welfare benefits of standard employees relative to those of atypical employees on the same scale. The critical point is that both cannot be evaluated by the same criteria and hence cannot be ranked in direct comparison to each other. An easy illustration of this problem is given by the role of qualifying conditions which play a profoundly different role in atypical and standard workers' chances of receiving benefits. For standard employees with long contribution records and high income qualifying conditions might not matter much; to atypical employees they most likely do. Likewise, a given replacement rate can mean different things to different kinds of em-

employees depending on their income level. One group with high earnings may view a given percentage rate as generous while another one with lower earnings may not. In face of these differences between standard and non-standard employees in the criteria defining whether a benefit is generous or not, it seems as no good idea to measure both on the same scale, as this would wrongly imply that benefits for both types of employees can be evaluated by the same criteria. The better way thus seems to assess both things by separate standards.

There are some other indices that do not deal with overall generosity, but focus only on the eligibility part. This includes contribution conditions as contained in the generosity index, yet extends further to comprise also behavioural requirements claimants are required to comply with. Making benefit receipt conditional on a certain behaviour is an attempt to stifle incentives to become long-term dependent on public financial support. Since the state of joblessness can only be escaped by an individual's own job search efforts, the monitoring of recipients' behaviour is of special concern for the handout of unemployment benefits, which is why the support for the unemployed in almost all countries is linked to obligations to actively seek work. With regards to sick pay, such obligations are usually less rigorous as recovery from illness is less contingent on personal efforts. Attempts to measure the strictness of behavioural obligations, which are differing largely across countries, are thus focused on unemployment benefits. And to the best of my knowledge, no such attempt has so far been undertaken for sickness benefits.

The most comprehensive approach to eligibility criteria measurement stems from Venn (2012) which is

based on EARLIER studies by Hasselpflug (2005) and the Danish Ministry of Finance (1998). In addition to familiar criteria taking into account contribution history, she presents novel indicators of claimants' obligations to be occupationally and geographically mobile, to be available during active labour market policy participation, and to proof serious job search efforts. These are further complemented by variables capturing the strictness of sanctions authorities can impose should a claimant fail to meet her obligations. The variables are coded on a scale from 1 to 5, weighted and added. Although this approach is certainly innovative and contributes a new perspective to the discussion of benefit generosity, it does not bear special importance for the debate on dualism, since obligations do not differ for standard and non-standard workers. Therefore, I decided not to include behavioural obligations in this study.

In short, I have adopted a method in the tradition of Esping-Andersen (1990) who assesses generosity of welfare states by analysing individual entitlements. This approach seems particularly well-suited for the aim of this study, which is to examine to what extent one group of employees faces conditions of social protection less favourable than others and how this impacts the structure of employment. Since no index so far has defined indicators explicitly concerned with the specific situation of atypical employees in comparison to standard ones, I have constructed three new indices: one is to gauge the strictness of qualifying conditions, while the remaining two measure amount and duration of benefits for standard and atypical employees. Finally, I have left aside behavioural obligations because these are unlikely to cause welfare dualism.

2. THE INCIDENCE OF ATYPICAL EMPLOYMENT

2.1 DEFINITIONS

Notions of atypical and standard employment are so closely intertwined that no definition of one can be given without a definition of the other. One approach frequently adopted by researchers is to delineate the concept of atypical employment *ex negativo*, i.e. as any kind of work arrangement that is not standard. The term atypical employment then is conceptually a blurry one, whose meaning is fully contingent on the definition of standard employment. In order to arrive at a more narrowed definition of atypical employment that is not a mere residual category, it is necessary to dwell more on the notion of standard as opposed to atypical employment.

First, it is important to note that the use of the term standard employment varies significantly among scholars depending on the research topic. There are nonetheless several core elements central to most, if not all, definitions which can thus be considered to constitute the essence of the term. These are (i) the full time character of a job, (ii) its persistence (i.e. the work contract is not temporally limited), and (iii) the dependency on an employer. Among other crucial features frequently listed by researchers are a pre-defined career path within a company, the concentration on only one employer, work being done outside the home, as well as access to social insurance schemes, which is most important in Continental Europe. The latter features, however, are not essentially defining the concept because they are drawn on very selectively only when a given research project calls for it; if not, they are disregarded altogether (for an overview see Kress 1998). To keep the definition as parsimonious as possible and to avoid confusion, I restrict the meaning of standard employment to comprise only the core parts described above: standard employment is hence a work arrangement that is full time,

continuous (i.e. without a fixed termination date), and dependent on one employer. I will turn to empirical operationalisations later.

Atypical employment then can be defined as any deviation from the aforementioned standard. What militates against such a definition *ex negativo* is that it lumps together a whole range of various work arrangement, such as part-time work, temporary work, agency work, casual work, and self-employment, some of which differ widely in their basic traits. This becomes most striking with self-employment, implying by definition that a person does not have an employer and thus, under certain circumstances, could be considered an entrepreneur rather than an employee. Furthermore, and most crucial to this work which is about the social protection of atypical employees, self-employed persons are prohibited from entering social insurance schemes in many countries so that social safety for the self-employed is organised in a profoundly different way than for employees, rendering a direct comparison difficult. The inclusion of agency work proves a problem too, as there is a huge variety of collective agreements and governmental rulings specific to this kind of work and often diverging from the general rules for employees. This complexity is further exacerbated by the relatively low number of agency workers making it harder to determine the exact norms governing agency workers' benefit entitlements in each country. Therefore, to keep the definition as simple as possible and to avoid bundling overly heterogeneous types of employment relationships into one single category, I restrict the term atypical employment only to cover part-time and fixed term work. This restriction bears two more advantages: besides the fact that these sorts of employment are the most frequent forms of non-standard employment, thus

likely having the largest empirical impact, they also have in common their dependence on an employer, which facilitates the comparison.

Initially, when the concept was developed parallel to the expansion of the welfare state in the years following the second world war, the notion of the standard employment relationship involved an explicitly normative slant. Perceived as a means to protect employees from the contingencies of the labour market, it was supposed to ensure the stability of the job, to guarantee a fixed and reliable compensation on a regular base, and to stipulate the rights and obligations of employers and employees (Countouris 2007: 15–55, Mückenberger 1985b, Schömann et al. 1998: 10). Against this backdrop, work arrangements differing from the standard were easily suspected to constitute a less desirable lower tier of the labour market, withholding most of the privileges standard employees enjoy (e.g. Osterland 1989). However, this normativity did not go without serious criticism; for example, critique was placed on the implicit assumption of a male breadwinner model inherent to the standard employment relationship. In absence of sufficient child care facilities, the working hours in a full time job would not allow the sharing of household chores equally and thus force one parent to act mainly as a homemaker. In this context, atypical employment increasingly emerged as a new and alternative way to reconcile family and work obligations by allowing for more flexibility in working time (Bosch 1986). Another reason for the change in attitude towards atypical employment was rising unemployment. By means of atypical employment it was hoped to redistribute an economy's total workload to more people and to thereby create additional opportunities to job entry, especially for those with low attachment to the labour market (Keller / Seifert 2002). Research as well as the public debate have thus come to increasingly appreciate both types of employment for their respective advantages (i.e. stability and security as opposed to flexibility), without losing sight, however, of the specific downsides associated with either. In fact, chances and risks of atypical work have become subject to a

wide variety of empirical studies whose outcomes I discuss in detail in chapter 3. It is important to note here that I do not imply any normative judgement either by the term atypical or standard employment. I nonetheless adhere to these names since they are established and frequently used, reflecting a reality in the labour market where dependent, full time, and permanent employment is still much more widespread than any more flexible type (at least in a large majority of developed countries). Social safety nets, too, are often assumed to be more closely knit for standard employees, risking that part-time and fixed term workers might more easily slip through.

2.2 PART-TIME WORK

This section gives an overview of the empirical evolution of part-time employment in those OECD countries included in the data set. First, I present data on how part-time has changed as a share of total employees, and then further break down how the proportions of part-time differ between various branches of the economy being at the heart of this study. Since the approach to the identification of part-time work adopted by Eurostat is very different from the OECD's and from statistical offices' outside Europe, it is somewhat troublesome to compare shares of part-timers across many countries. Whereas the EU Labour Force Survey leaves it entirely to the respondents of the questionnaires to classify themselves, the statistical bureaus of Australia, Canada, Japan, New Zealand and the OECD choose a clear cut-off point at 30 hours of work per week below which a job is considered part-time. One possible way around this problem would be to solely rely on OECD sources, covering all countries in the data set, but unfortunately the OECD data do not provide information in sufficient detail down to the level of single economic sectors, leaving no other alternative than to draw on each country bureau's data, even when these are not always directly comparable. I begin with figures on Europe because these originate from a single, common source and hence are

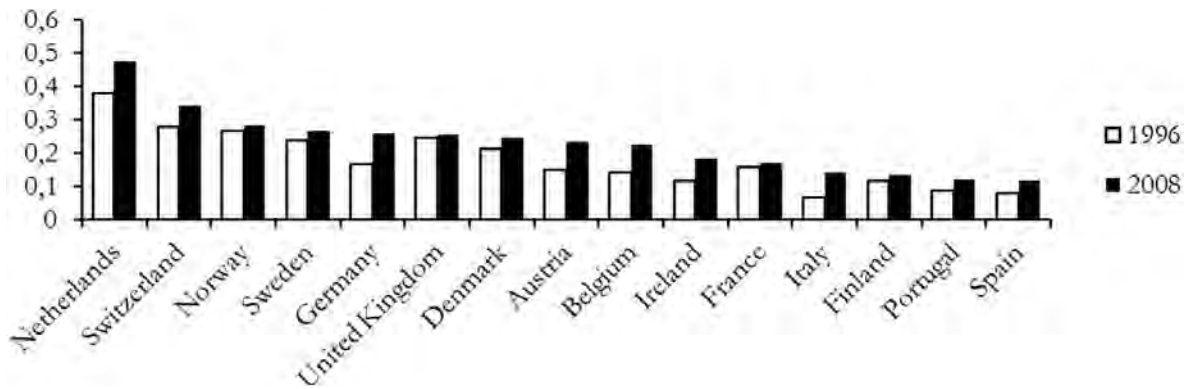


Table 2.1: Shares of Part-time Workers in Total Employment. Source: Eurostat

based on the same definition, before I subsequently add further data on non-European countries.

A first glance at the total proportion of part-time in Europe reveals that it has been growing over the past two decades and accounts for a significant fraction of all jobs (see table 2.1). In 2008, the frontrunner with the highest share was undoubtedly the Netherlands with 47% of total employment, all other countries trailing far behind. Switzerland, the country with the second highest rate, had a corresponding share of merely 34%, still higher than the rates of Sweden (27%), Germany (26%), and UK (25%). By contrast, Italy (14%), Finland (13%), Portugal, and Spain (both 12%) showed the lowest shares. Latter countries (with the exception of Finland), however, also saw the highest growth in part-time work between 1996 and 2008, no less than doubling their shares. Even the Netherlands with their

already very high rate further increased it by 15 percentage points during the same time span. Only in the Scandinavian countries of Denmark, Sweden, and Norway did part-time employment stagnate, albeit on a high level. On average, there was an obvious, increasing trend towards part-time work whose fraction of total employment exceeded 25% in most European countries in 2008.

After this brief overview of part-time incidence in total employment, I will turn to single distinct branches of the economy and their respective part-time rates. I begin with manufacturing which is traditionally closely associated with standard employment (for reasons I discuss in the latter part of this chapter) and therefore is expected to rely least on part-timers. Indeed, contrasted with the economy in total, part-time rates in manufacturing are conspicuously lower (see table 2.2). The Netherlands

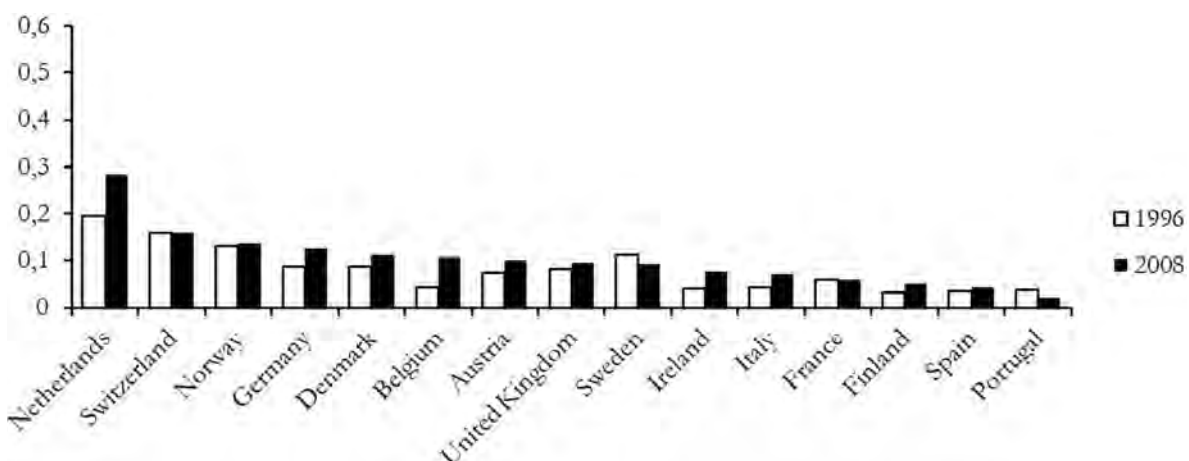


Table 2.2: Share of Part-time Workers in Manufacturing. Source: Eurostat, Data on Sweden from 2007

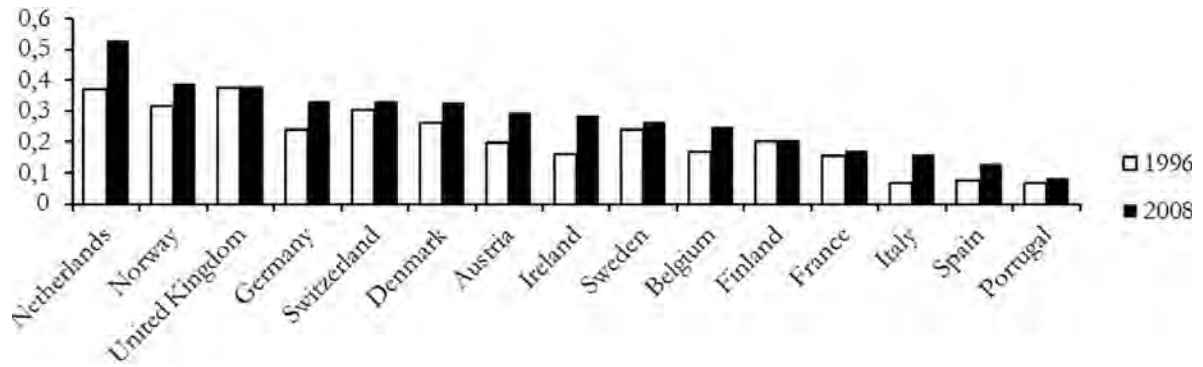


Table 2.3: Shares of Part-time Workers in Trade and Repair. Source: Eurostat. Data on Sweden from 2007

are once more the frontrunner and outlier with a share of 28%, followed by Switzerland with 16%. Even though there is a rising trend in most countries, part-time shares barely climb over a threshold of 10%, which is less than half as much as in the economy in total.

In stark contrast to these figures are the part-time shares in services. Starting with trade and repair, it is eye-catching that part-time rates were at least twice as high as in manufacturing and even up to four times larger (Finland and Portugal, see table 2.3). Compared to the share in total employment, in four countries (UK, Denmark, Germany, Norway) part-time fractions in trade and repair were more than 10 percentage points higher, whereas in only two countries (Switzerland, Portugal) part-time was less common. Also the long-term trend points to an upward direction: the proportion of part-time in trade and repair grew almost everywhere,

even when the same countries saw no increase of total part-time shares.

The same trend is even more pronounced in the data on hotels and restaurants (see table 2.4). The Netherlands, Denmark, UK, and Norway had part-time shares that at least came close and sometimes even strongly exceeded the mark of 50%, thereby implying that part-time work may have become the rule rather than the exception already. Only Spain, Italy, France, Austria, Portugal, and Finland fell below a rate of 30%, which on average is still three times as much as in manufacturing. As could be seen in trade and repair, these figures do not appear to be the final climax of a prolonged evolution unfolding over the past decades, but as an intermediate step on a continuous growth path that is set to continue.

When more sophisticated, high-skill services are re-

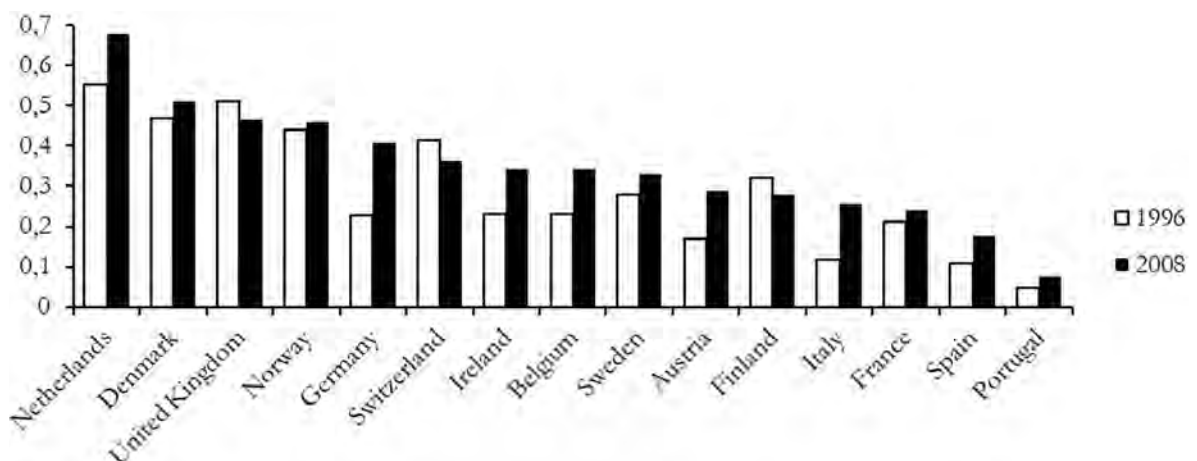


Table 2.4: Shares of Part-time Workers in Hotels and Restaurants. Source: Eurostat, Data on Sweden from 2007.

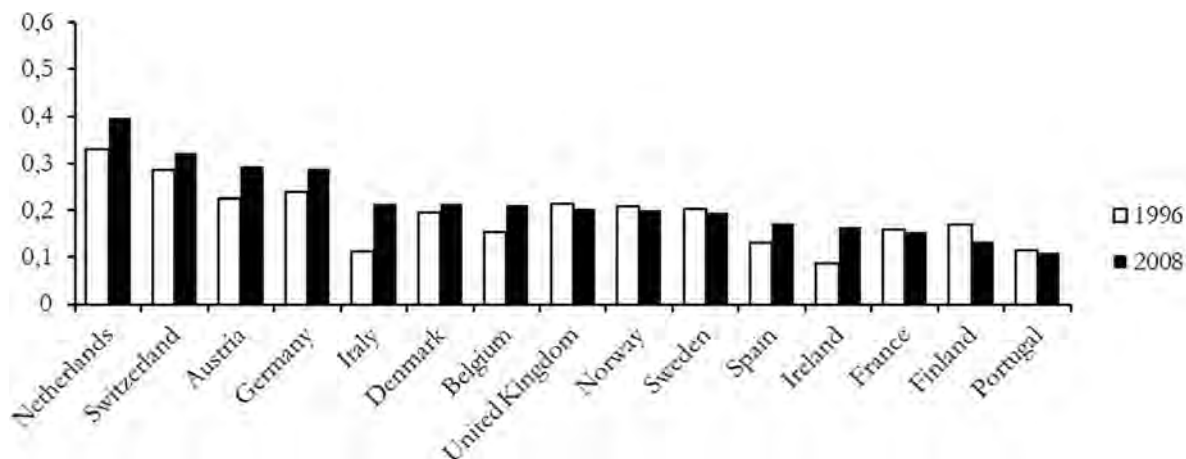


Table 2.5: Shares of Part-time Workers in Real Estate and Business Services. Source: Eurostat, Data on Sweden from 2007

garded, their part-time shares turn out to be highly dependent on whether these are largely supplied by private or public providers. In real estate and business, a service sector dominated by private firms, part-time was twice as common as in manufacturing with an increasing tendency, yet considerably less widespread than in hotels and restaurants (see table 2.5). By and large, the pattern of part-time employment in real estate and business services closely resembles that in trade and repair.

The sector of education and health, however, which is high-skill and, in contrary to real estate and business services, to a much higher degree part of the public domain, is in its employment structure much more similar to hotels and restaurants, featuring the highest part-time rates of all sectors (see table 2.6). 70% of all Dutch

employees in education and health did their job on a part-time basis; in Germany, UK, and Switzerland the corresponding share amounts to some 40%. Only four countries—Italy, Spain, Finland, and Sweden—exhibit rates of less than 30%.

The trend of growing part-time employment, especially in services, is further confirmed by data from outside Europe. As said before, the data from inside and outside Europe are not directly comparable because both the definition of part-time employment and the classification of business sectors differ; but even if a detailed comparison is impossible, the data nonetheless allow us to trace the same broad developments. In Canada, the fraction of part-timers in manufacturing stays roughly the same on a low level throughout the peri-

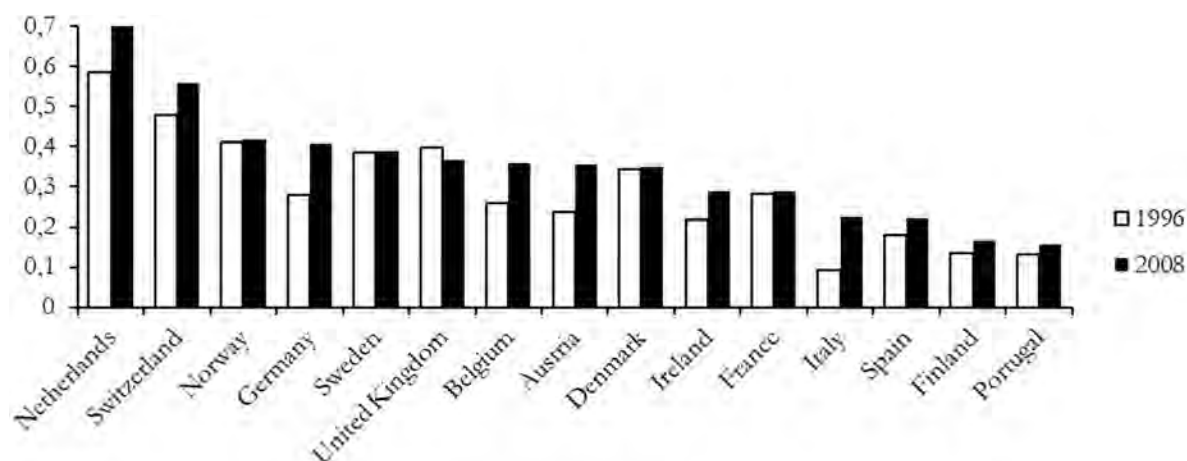


Table 2.6: Shares of Part-time Workers in Education and Health. Source: Eurostat, Data on Sweden from 2007

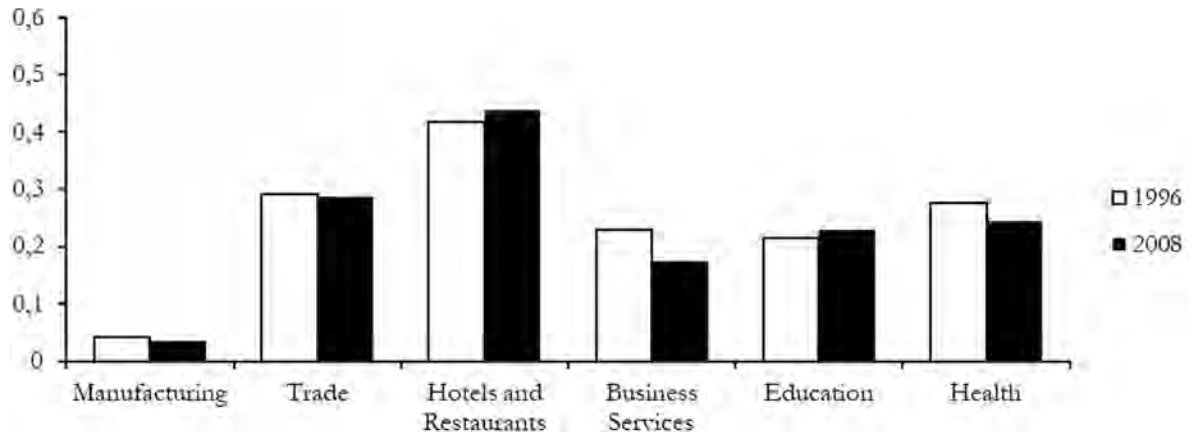


Table 2.7: Shares of Part-time Workers in Canada. Source: Statistics Canada

od on which there is data (see table 2.7). Contrasting these figures with the proportion of part-timers in other sectors yields that in business and building services the corresponding share was four times larger, in education and health six times larger, in retail seven times larger, and in accommodation and food services even ten times larger. New Zealand's figures roughly match Canada's (see table 2.8). For Australia and Japan there are no detailed time series available, yet based on specific publications of each country's statistical agency, it is possible to derive some general conclusions from these countries. In Australia, part-timers accounted for 20% of employment in property services, 45% in health, 52% in retail, and 62% in accommodation and food services, whereas their share was only 12% in manufacturing in 2008 (Australian Bureau of Statistics 2008). Japan is the only country to deviate slightly from that familiar pattern:

in 2007, the retail sector employed 24.6% part-timers, manufacturing 15.4%, while health care (14.6%) and other services (13.6%) surprisingly fell below the level of manufacturing (Asao 2011).

Summing up, services in general seem to be much more predisposed to part-time work than manufacturing throughout virtually all countries covered by this study. This holds particularly for hotels and restaurants as well as for social services, whereas the propensity to hire part-timers is slightly less pronounced in retail, repair, real estate, and business services. Moreover, most countries saw considerable increases in reduced hours work between 1996 and 2008, suggesting that part-time is increasingly becoming a regular and necessary form of employment, primarily in services. Manufacturing, by contrast, remains largely unaffected by this trend.

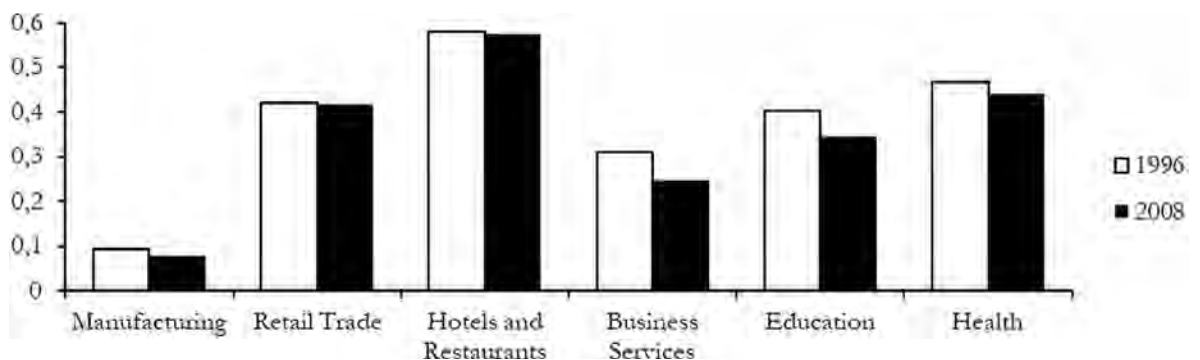


Table 2.8: Shares of Part-time Workers in New Zealand. Source: Statistics New Zealand

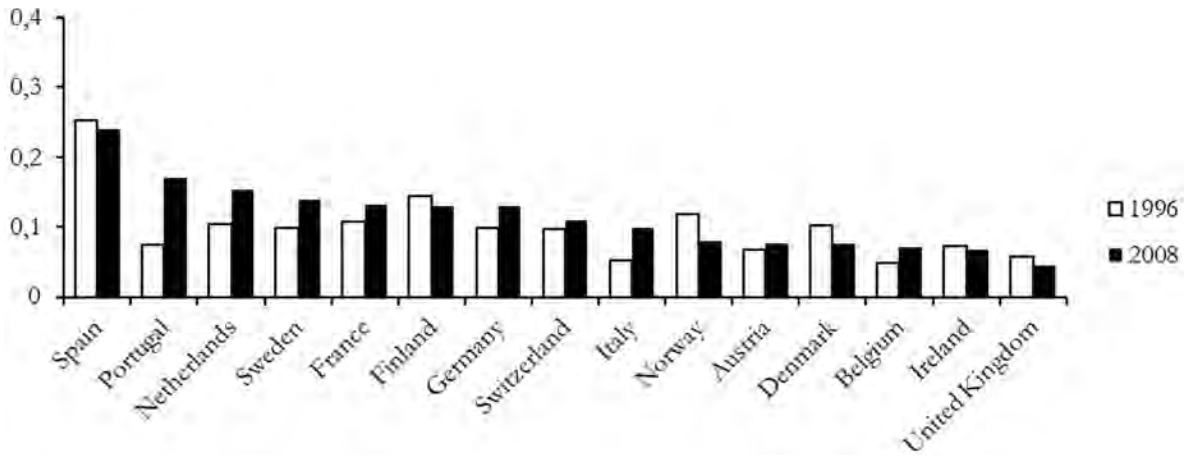


Table 2.9: Shares of Temporary Workers in Total Employment. Source: Eurostat

2.3 FIXED TERM WORK

Analogous to the previous section, this part gives an overview of the development of fixed term employment as a fraction of total employment in various sectors of the economy. There are no problems with alternating definitions between different statistical authorities in

this case, allowing us to readily compare all figures. Since OECD data are not broken down by sectors in sufficient detail, I draw on national and Eurostat sources instead. It is necessary to stress that neither data on part-time nor on fixed term employment have been corrected for overlaps so that the total proportion of atypical employment in an economy cannot be worked

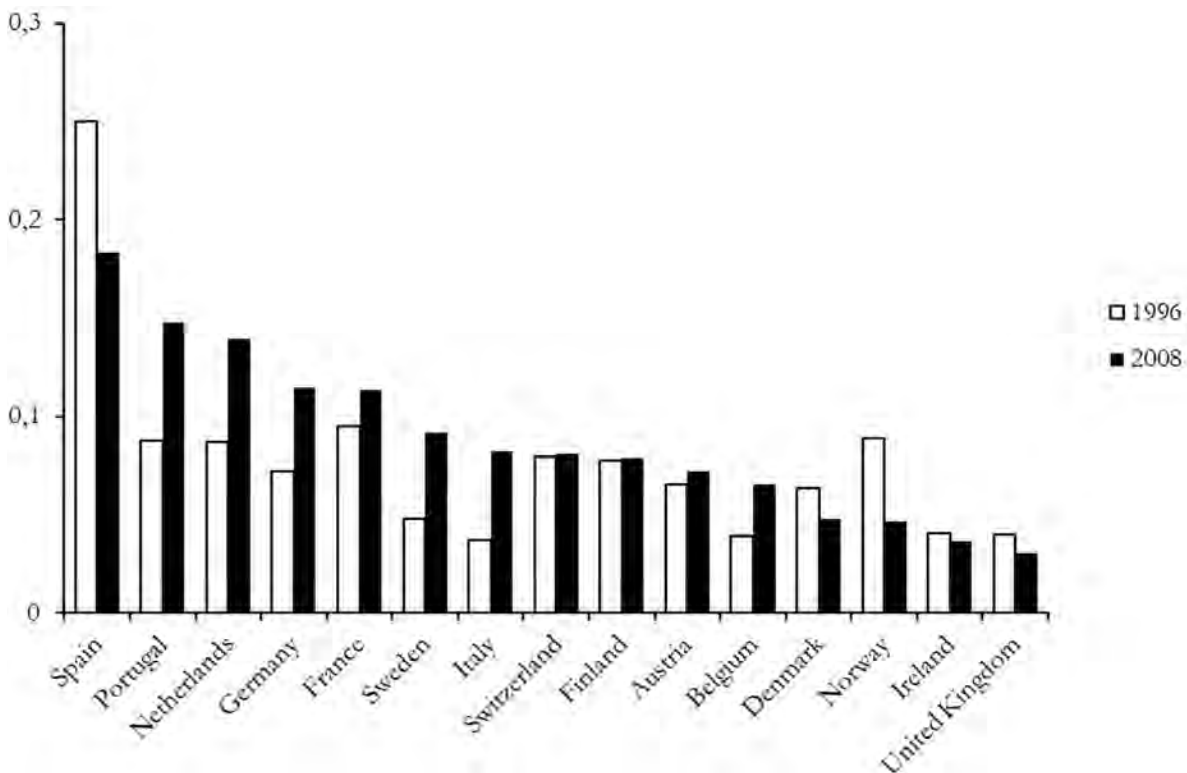


Table 2.10: Shares of Temporary Workers in Manufacturing. Source: Eurostat, Data on Sweden from 2007

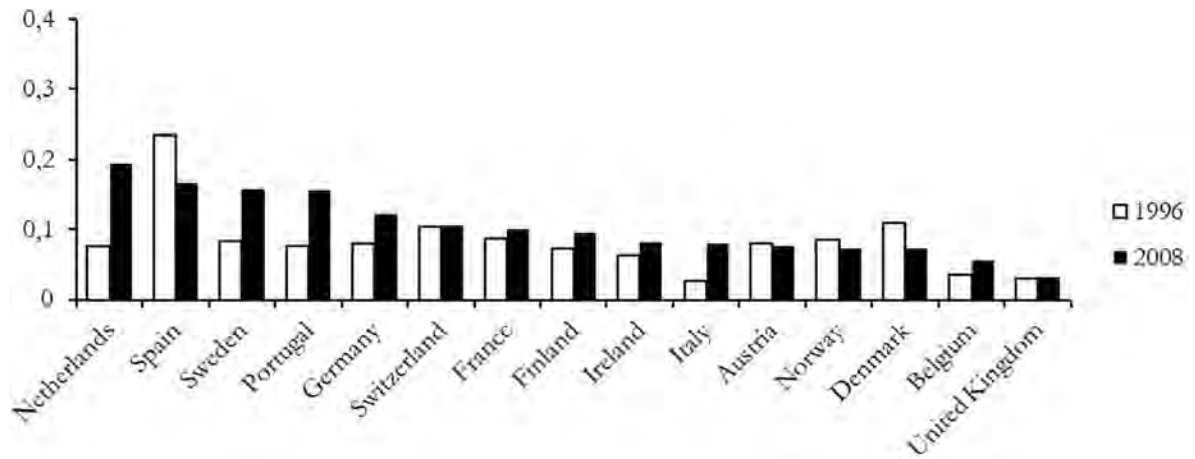


Table 2.11: Shares of Temporary Workers in Trade and Repair. Source: Eurostat, Data on Sweden from 2007

out by simply adding up the percentage shares given in this and the previous section. Determining such a total share is not substantial for the purpose of this study, however, as the measurement tools introduced later are able to cope with such overlaps by design. I start with presenting data on temporary contracts as a share of total employment and take a closer look at distinct branches, first in European and then in non-European countries.

From 1996, the first year for which comprehensive data are available, to 2008, the European mean share of fixed term work in total employment rose by two percentage points from 10% to 12% (see table 2.9). That is, temporary work was only half as widespread as part-time work and its growth was also considerably weaker. The more sluggish overall growth is explicable

by the lack of a shared international trend towards more fixed term jobs: after all, there were six countries, i.e. a little bit less than half of all European countries included, where percentage shares decreased rather than rose. Unlike the evolution of part-time, temporary work shows no uniform growth pattern; common to both forms of atypical employment is only that their basic levels strongly vary across countries. In 2008, fractions of temporary employment ranged from 24% and 17% in Spain and Portugal to 4% in the UK.

In manufacturing, fixed term work is as widely used as part-time and in most cases slightly below the total economy average (see table 2.10). Taking a more detailed look at single countries, there is hardly any difference recognisable between the share of temporary employment in the total economy and in manufacturing,

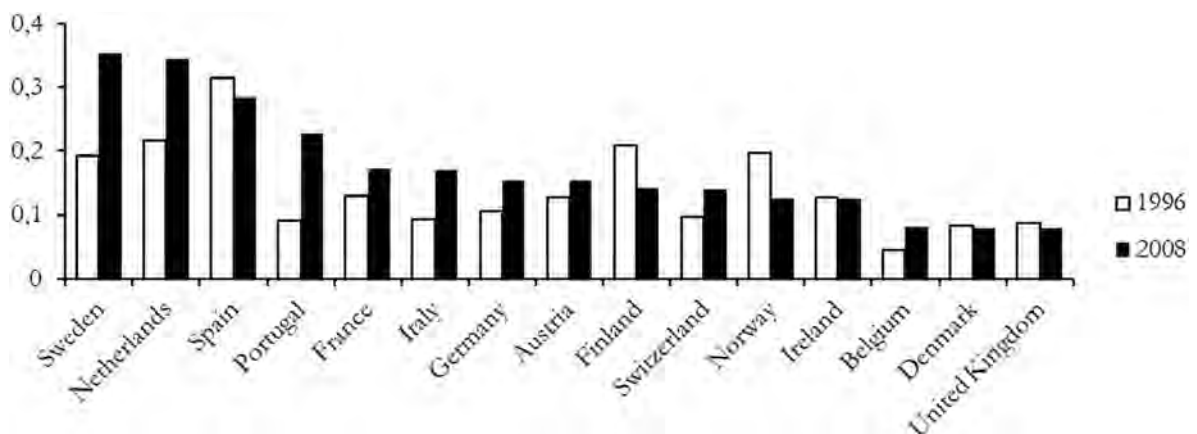


Table 2.12: Shares of Temporary Workers in Hotels and Restaurants. Source: Eurostat, Data on Sweden from 2007

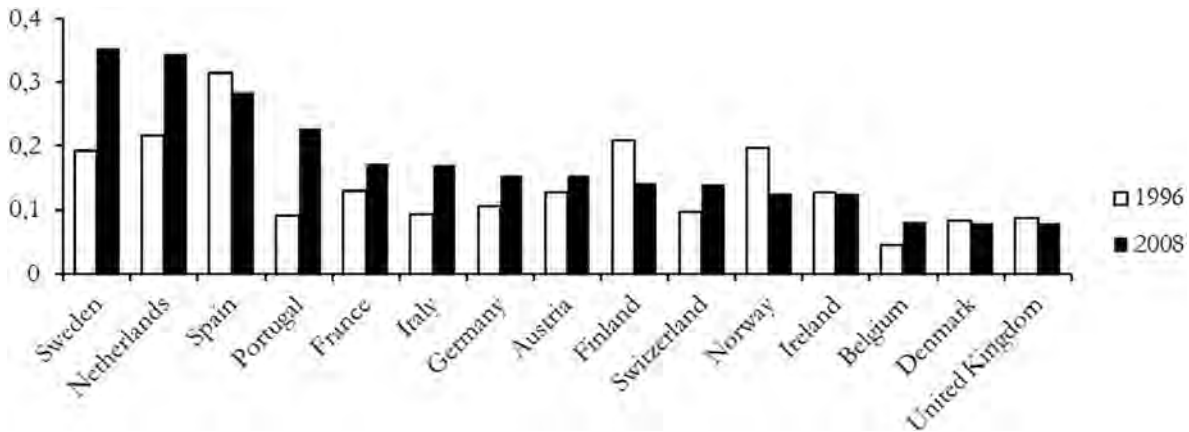


Table 2.13: Shares of Temporary Workers in Real Estate and Business Services. Source: Eurostat, Data on Sweden from 2007

the exception being Spain which has a far lower rate in manufacturing.

Fixed-term shares in trade and repair strongly resemble those in manufacturing (see table 2.11), thereby deviating from the pattern observed for part-time employment which had a markedly higher share in this segment of services. One common feature of fixed term and part-time employment is that the Netherlands once again take the position of the frontrunner with the highest percentage.

Considerably higher are the shares of fixed term jobs in hotels and restaurants (see table 2.12). Here, in most countries, the percentage is about twice as high as in manufacturing and rose by about five percentage points within the years between 1996 and 2008. Sweden, Ireland, UK, and Norway display shares even three times greater than in manufacturing. Only in Belgium is almost no difference observable. Exceptions to the upward trend are Spain, Finland, UK, and Norway which were the only ones to decrease their figures.

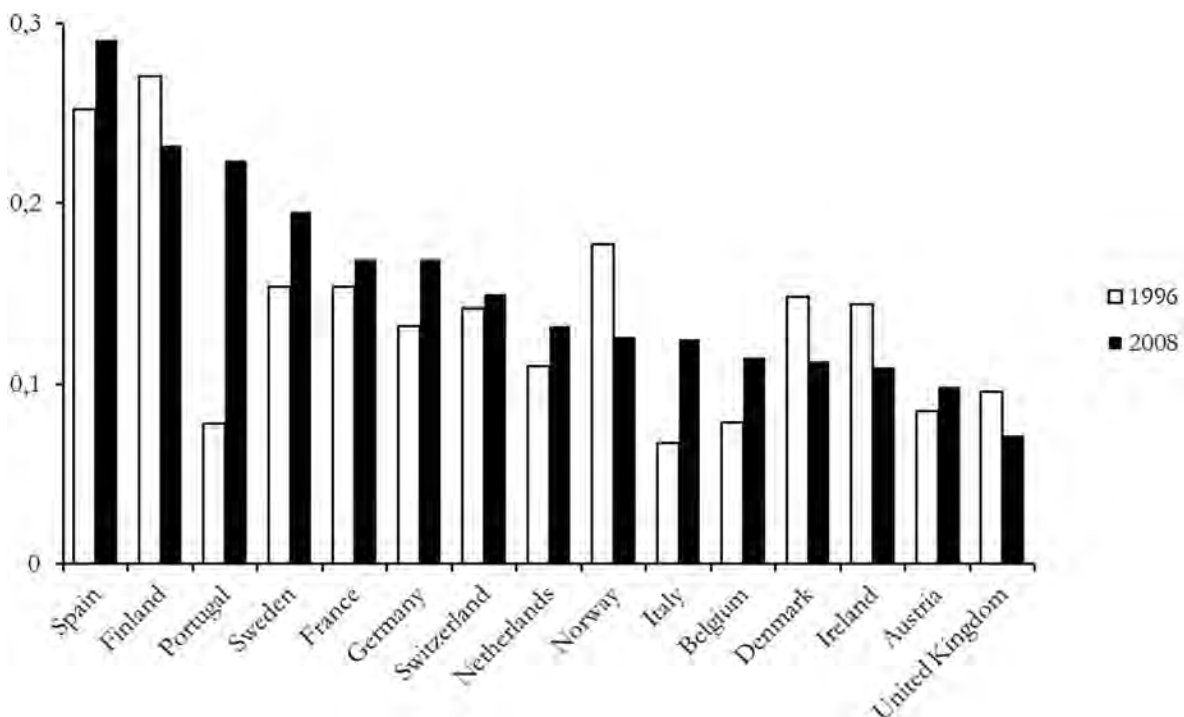


Table 2.14: Shares of Temporary Workers in Education and Health. Source: Eurostat, Data on Sweden from 2007

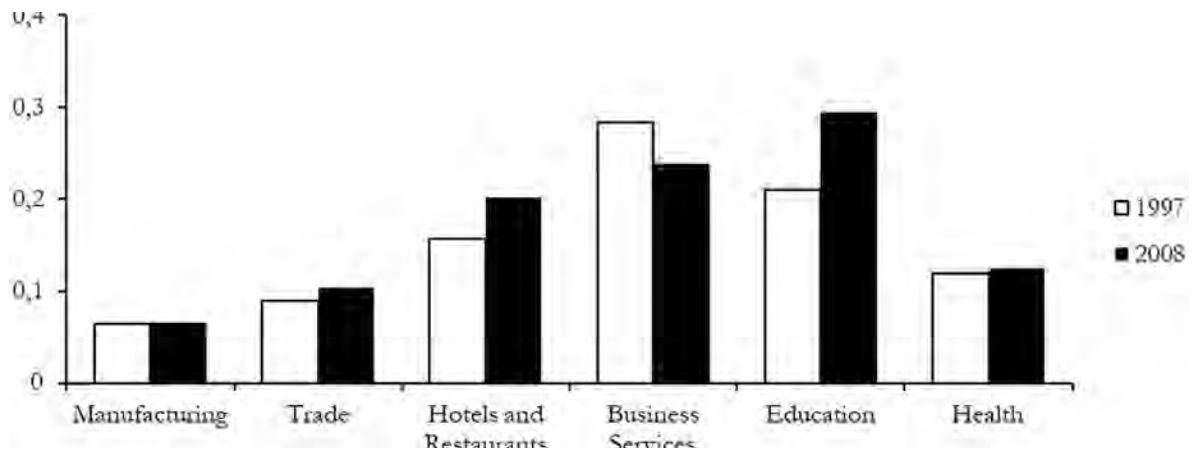


Table 2.15: Shares of Temporary Employment in Canada. Source: Statistics Canada

The pattern of temporary employment in high skill services is ambiguous. While proportions of fixed term work in real estate and business services are close to manufacturing (see table 2.13), the education and health sector resembles more the hotels and restaurants sector (see table 2.14). In 2008, the average share in the latter was five percentage points larger than in manufacturing and had been growing by two percentages points since 1996. Turning to single countries, fixed term shares in education and health were no less than twice as big as in manufacturing in seven countries, and almost no country showed percentages lower than in manufacturing. Shrinking shares occurred only in a small number of Scandinavian and Anglo-Saxon countries, yet still remaining above the level of manufacturing. In real estate and business services, by contrast, shares of temporary workers mostly did not exceed the single-digit threshold.

For non-European countries it is much more difficult to determine precisely the shares of temporary employment because many statistical offices do not publish reliable data on that topic. One exception is Canada which provides detailed time series on trends in fixed term work. The figures for Canada appear to be greater than in Europe and demonstrate a strikingly higher incidence of temporary workers in services than in manufacturing (see table 2.15). While in the latter sector the share was constantly at about 7% of total jobs between 1997 and 2008, the respective figures on trade

were ranging between 9% and 12%, in accommodation services between 16% to 20%, in business services, real estate, and education between 20% and 30%. Only in health care shares were somewhat lower between 12% and 14%, thus below the corresponding European figures. Australia, Japan, and New Zealand unfortunately do not release data on temporary employment in a comprehensive time series format suitable for use here.

Summarising, fixed term employment is only about half as widespread as part-time work and hence not about to become a new form of standard employment. Moreover, it is in general not as highly concentrated on services as part-time work, but in some service sectors – particularly in accommodation, restaurants, education, and health – we can nonetheless find a notably higher incidence of temporary employment. Therefore, and because fixed term jobs have been on the rise in a great number of countries, they should not be neglected when services and their reliance on atypical employment is to be scrutinised.

2.4 CAUSES OF ATYPICAL EMPLOYMENT GROWTH

In the preceding section we have seen that atypical employment is expanding and concentrated primarily in the tertiary sector. This section gives a summary of existing theories and empirical evidence explaining the un-

derlying reasons of the growth in atypical employment and its linkage to the simultaneous expansion of services. At the heart of each such theory is a modelling of the incentives employers face when they decide whether to offer an atypical job.

One of the earliest contributions stems from Doeringer and Piore (1971) who interpreted atypical employment in a context of labour market dualism. In what they term 'segmentation theory' they distinguish between two types of employees. The first type is the 'core workers' who are effectively sheltered from pure market forces as they enjoy an extensive set of privileges awarded to them by their employers. Among the most crucial are the guarantee not be dismissed unless the firm is in existential distress, access to various fringe benefits and social protection. Core workers therefore usually do not compete with job seekers from outside the firm according to market rules, but rather act on internal labour markets governed by hierarchies and administration. 'Peripheral workers' on the other hand, as opposed to core workers, lack most of these privileges and hence find themselves heavily exposed to external labour markets, forcing them to settle with smaller wages, poor working conditions, no social protection, and less employment stability. Doeringer and Piore conclude that peripheral work is closely tied to atypical work which is particularly prevalent among low skill, labour intensive activities (such as many services), allowing for a high turn-over of staff in accordance to market fluctuations, given that workers on this skill level are easy to replace. Core employees, in turn, often are more well trained, fulfilling tasks most crucial to the firm, and therefore generally covered by standard contracts. In this view, atypical jobs are perceived as deprived forms of work only used by employers to fill vacancies with low skill requirements in the most flexible, cost saving way.

Atkinson (1984) has further elaborated on this approach by pointing out with greater precision the mechanism by which standard and atypical workers can benefit a firm. For this purpose he introduced the notion of the flexible firm: a firm which by its organisational features and its management of human resources

is well equipped to adapt to rapidly changing market conditions in a fast and efficient way. Atkinson highlights, among others, two specific forms of flexibility most important for this study. First, a company must be capable of *functional flexibility*, i.e. employees can be easily shifted from one field of work to another. This requires firms to invest permanently in their employees' skills in order to qualify them for a variety of different tasks. To make sure that employees for which employers have undertaken considerable training investments do not leave before these investments have paid off, firms will try to bind them closely by offering them high pay, long working time, fringe benefits, and employment stability. Second, Atkinson calls it *numerical flexibility* if a company is also able to quickly reduce or increase the number of employees, or their respective working time, in order to better match current workload with the level of the firm's labour resources. A common tool to achieve numerical flexibility is the use of atypical work contracts, stating only a reduced volume of work or a predefined expiration date. These contracts can be precisely customised to satisfy firms' need for labour without incurring the costs of overemployment. Atypical work then is a means to increase numerical flexibility, whereas standard employment serves the purpose to endow a firm with functional flexibility. Both kinds of flexibility can occur at the same time and at the same firm. Segmentation, referring to Doeringer and Piore's terminology, within the theory of the flexible firm is thus a deliberate strategy to enhance employers' flexibility and competitive edge.

Another famous distinction is based on work by Lindbeck and Snower (1988). In their model, the workforce is divided into insiders and outsiders, the former being well trained and holding secure jobs, the latter looking for jobs and willing to accept work even if it is unstable and poorly paid. Despite their considerably higher compensation, insiders cannot be readily replaced by outsiders because this would entail heavy turnover costs. Employers thus have to find ways by which they can deploy insiders and outsiders to the maximum benefit of the firm. For insiders, this is com-

monly achieved through *internal flexibility*, i.e. companies can adjust both working time and tasks of their core workers as swiftly as possible. Outsiders' utility to the firm, by contrast, is maximised when they are put on positions where they perform either very simple, low skill or non-recurring, non-standard operations strongly affected by business fluctuations. It is thus employers' ability to quick numerical adjustment, called *external flexibility*, that is constitutive for outsiders' benefits to firms.

Since the flexibility concepts of Atkinson and Lindbeck and Snower show extensive overlaps, both can be combined to a single scheme as is done by the OECD (1990) and Keller and Seifert (2002):

- Internal-numerical flexibility: when capacity utilisation is fluctuating, the volume of work can be adjusted. The primary means of doing so are reductions and increases of working time. In contrast to external-numerical stability, the total number of employees remains constant.
- Internal-functional flexibility: when production requires it, organisational structures of work can be adjusted and employees can be rapidly shifted from one task to another. This is based on broad qualifications of the employees and the absence of overly strict work rules.
- External-numerical flexibility: when capacity is not fully utilised, labour can be easily shed. Likewise, workers can be hired without great efforts once the business situation improves. This requires the needed skills to be in sufficient supply among the workforce and not to be too firm-specific.
- External-functional flexibility: when demand in the labour market changes, the workforce is able to adapt by acquiring new skills. This is the foremost requirement to avoid problems of mismatch.

Leschke (2008) lists various practical measures by which firms can achieve the mentioned forms of flexibility.

- Internal-numerical flexibility: working hours can be adapted by part-time work, overtime, working time accounts, employment-securing reduction of working hours, and week-end working.
- Internal-functional flexibility: restructuring of work organisation can be facilitated by continuing education, on-the-job training, life-long learning, and job rotation.
- External-numerical flexibility: for the most part, this category comprises measures of hire and fire. If comprehensive dismissal protection makes easy layoffs impossible, the most widespread tools are fixed term employment, temporary work agencies, and on call work.
- External-functional flexibility: To prevent mismatch and to enhance productive flexibility, active labour market policies, subcontracting, and freelance labour can be used.

According to the models described above, atypical employment serves to provide employers with numerical flexibility by facilitating the adjustment working time (part-time employment) or the number of employees (fixed term employment) to match the workload. This raises the question as to the existence of the standard employment relationship which, at least on the face of it, does not seem to offer any of these flexibilities. One answer is that the stability the standard employment relationship ensures is a prerequisite for internal-functional flexibility which is based on employers' and employees' training investments, which only pays off if the employment relationship is long-term.

The hypotheses on firms' rationales to employ atypical workers have so far been quite general and did not offer any details on the specific circumstances under which employers may be particularly inclined to call for part-time and fixed term workers. A variety of studies deals with this issue in greater detail. One argument frequently presented in favour of part-time work is optimal staffing: if firms have operating hours longer than regular working time or if firms face rush hours during

the day or the week (e.g. in supermarkets), the additional labour demand can most efficiently be met by part-time employees whose working hours are precisely synchronised with business peak times (Allaart / Bellmann 2007, Euwals / Hogerbrugge 2006). The same logic also applies on a macro level if firms are strongly affected by fluctuations of the business cycle and therefore have to cut down on excess labour regularly (Buddelmeyer / Mourre / Ward 2004, Friese 1997). Although flexibility arguments seem to play the major role regarding the creation of part-time jobs, several studies also point to wage saving aspects. Since part-timers usually do not bear as much responsibility and occupy lower positions in their firms, they do not earn the same wage as standard employees. Furthermore, in some countries part-timers can legally be excluded from fringe benefits (Allaart / Bellmann 2007, Ehrenberg / Smith 2000). Not least, employees themselves may want to work shorter hours to have more leisure time or, more importantly, to be able to reconcile work with family life. As this is an issue still concerning mostly women, Euwals and Hogerbrugge (2006) can show that the proportion of women is a strong predictor of a firm's number of part-time jobs.

As has been said, the advantage of fixed term work is that it adds to external flexibility by stipulating an exact date by which the employment contract will be automatically terminated. It is thus a convenient tool for companies coping with seasonal demands or large, unsolicited orders. Moreover, if firms need to realise special short-term projects requiring particular skills they cannot provide themselves, fixed term work may be a way to acquire the sought-after skills only for the given project without permanently inflating the pay roll (Burgess / Connell 2006). Another reason pertains to firms with high technology profiles, frequently focused on niche products, facing the challenge that they have to familiarise any new employee with intricate, non-standard technologies and procedures. Because this takes time and may not necessarily succeed, firms may want to prolong the probation period by initially

making a work contract fixed term (Kalleberg 2000). Besides increased flexibility, the extent to which there is an incentive to hire on a temporary basis hinges on the strictness of employment protection legislation penalising the dismissal of standard employees. If firing costs are generally high, attempts to contain costs also motivate the use of fixed term contracts (Laird / Williams 1996). Finally, employees too may sometimes wish to work in temporary arrangements, especially when they have been jobless and therefore see fixed term jobs as an opportunity to regain work experience or when family responsibilities do not allow them to take on work on a permanent basis (Morris / Vekker 2001, Schömann / Rogowski / Kruppe 1998).

These incentives for atypical work generally apply to all economic sectors, but carry more weight for services, which is reflected in the higher incidence of non-standard jobs in most tertiary branches of the economy. There are several reasons for this. First, most services, unlike industrial goods, cannot be stored and hence need to be produced in the very moment the consumer is present. Fluctuations in demand then translate immediately to fluctuations in production, requiring any service company to organise their staffing accordingly (Smith 2005). Second, services are less capital intensive in production than manufactured goods so that wages and salaries account for a bigger share of overall costs. The pressure to bring down labour expenses is therefore higher for service producers than for manufacturers (Bosch 1995). A number of studies tests this interrelationship empirically for various service sectors. Particularly for trade and hotels, where shares of atypically employed turned out to be high, Davidson / Guilding / Timo (2006), Kauhanen (2008), Künn-Nelen / de Grip / Fouarge (2013) and Specchia / Vandenberghe (2013) show that keeping costs low and matching staffing as closely as possible to customer fluctuations are key to operate successfully in these markets. A strategy often pursued by employers in these segments is to retain some standard employees in charge of all vital operational procedures, while all additional demand for la-

bour on less responsible positions is covered by atypical employees. Sighler / Adams (1999) and Baret (2005) carried out similar studies about the personnel policies of hospitals, concluding that the need to keep health facilities continuously staffed in combination with strong cost pressure result in increased usage of atypical employees. In high-skill and high pay services, however, the usage of atypical employment is less beneficial as Plantenga / Remery (2005) and Haipeter / Pernod-Lemattre (2005) show for software development and banking. As these sectors depend less on passing customers and their products do not necessitate the presence of the supplier of the service, numerical flexibility contributes less to cost saving efforts, even though especially in software development fixed term work is frequently used to implement short-term projects.

As a conclusion, we can state that atypical employment is indeed primarily used for the numerical flexibility it lends to firms in adjusting labour to workload, whereas wage saving reasons play a more subordinate role. On side of the employees, it is the wish to re-enter the labour market after a period of absence or to reconcile family and work that make (mainly female) employees want to work on non-standard terms. These incentives play an overwhelming role especially in large parts of the service sector which is most reliant on precise staffing policies in order to match customer fluctuations as closely as possible. This general rule, however, applies particularly to social and low-skill services rather than to high-skill business services which consequently exhibit lower rates of atypical employees.

3. TERTIARISATION

«Deindustrialisation» is frequently, and in my view falsely, used as a label for the trend of declining shares of manufacturing in total employment and total value added. Although there is no doubt that manufacturing now employs fewer people and adds less to GDP than in the 1970s, it is highly debated whether there is a real loss of industry production in developed countries. Savona and Lorentz (2006), for example, argue that if the real output is observed rather than the fraction of GDP or the number of jobs, the industrial sector has not diminished, but in fact has increased in all but two countries (UK and US). Manufacturing is hence still at the core of most countries' economies, making the term «deindustrialisation» fairly misleading. In my view, «tertiarisation» better grasps the changes that all developed countries are currently undergoing, namely a steady shift of employment towards services and, conse-

quently, an increasing production therein, yet without necessarily entailing a loss of industrial substance. In this study, I will only deal with the employment aspect of tertiarisation (i.e. the rising share of service employment) and leave the value added aspect aside. The next section presents descriptive data illustrating the extent of tertiarisation, followed by another section providing theoretical insights and empirical results of its economic causes.

3.1 DESCRIPTIVE DATA

Since comprehensive data on most countries only became available in the course of the 1960s, it is impossible to trace the evolution of services on a comparative basis further back in time. Until the beginning of the

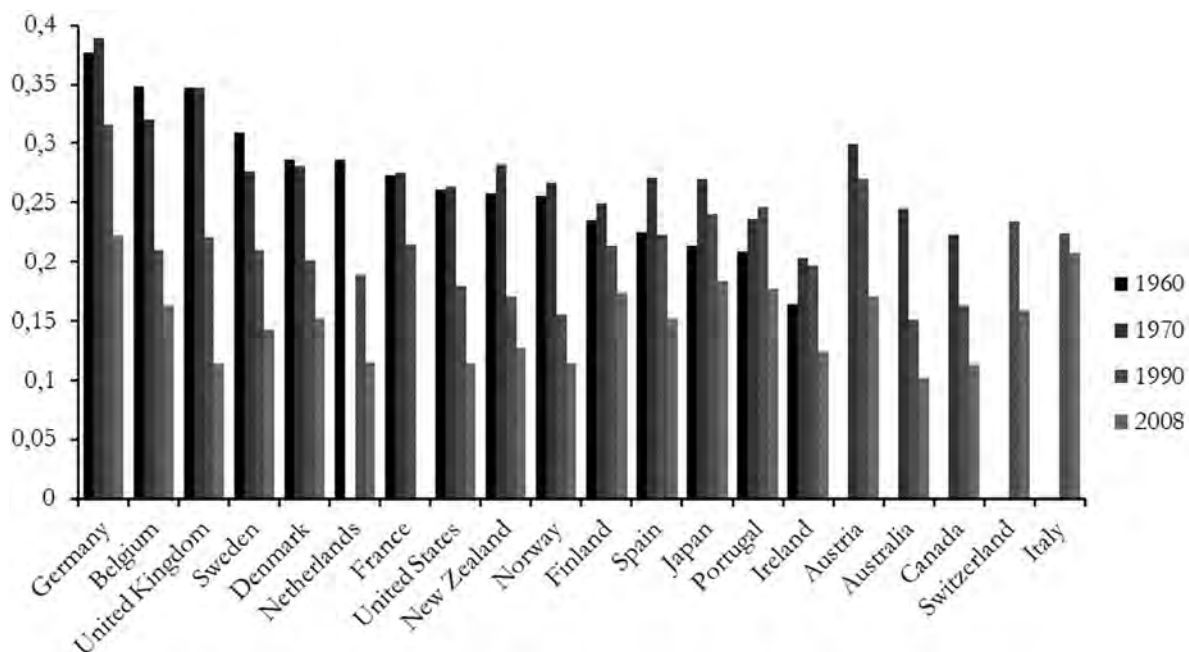


Table 3.1: Share of Manufacturing in Total Employment. Source: OECD, Data on Germany from 1961 and 1969, on the UK from 1963, on the US from 1962

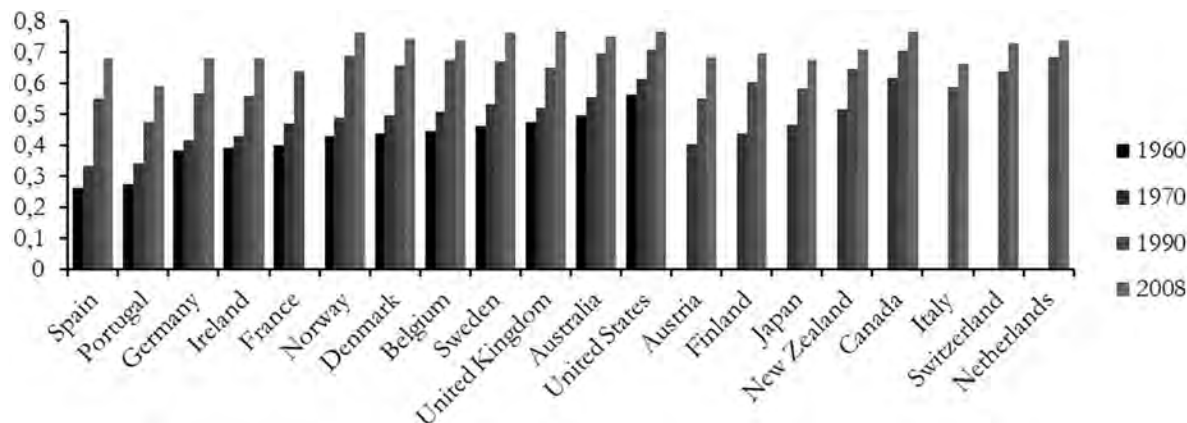


Table 3.2: Share of Total Services in Total Employment. Source: OECD, Data on Australia from 1964, on Finland from 1971, on Ireland from 1971, on New Zealand from 1971

1970s, employment in manufacturing is either characterised by relative stability in countries where the shares had already achieved a high level of more than 25% of total employment, or by significant growth in countries engaged in catch-up processes, starting from a level significantly below 25% (see table 3.1). A result of this development was that, by the onset of the 1970s, a strong international convergence in the economic importance of manufacturing had taken place as almost all observed countries had reached proportions of industrial employment exceeding the mark of 25%. This, however, has also been the moment where the trend has passed a tipping point after which it has reversed on a universal scale; during the 1970s, employment shares of manufacturing started to shrink in all countries, yet with different paces. By 2008, the Anglo-Saxon countries and Norway had the lowest shares of all countries (slightly more than 10%), while Germany maintained the highest position with a share of more than 20%. Italy, Austria, Japan, and Portugal, too, still had relatively high shares in 2008. Overall, with fractions of employment in manufacturing being down to 10%–20% in 2008, all observed countries recorded substantial losses of industrial employment as compared to the year 1975, when the corresponding shares had been mostly between 20% and 30%.

With respect to total services, all countries have seen a rather uniform, continuous growth of employment shares from the 1960s onward, leading to a high

convergence between countries (see table 3.2). In 1960, all countries had employment shares between 30% and 50%, the only exceptions being Spain and Portugal with less than 30% and the US with more than 50%. By 2008, all countries (other than Portugal) had moved closer and reached portions of service employment between 65% and 75%. Therefore, each country has increased its share by no less than 20 percentage points. It is striking that, unlike in manufacturing, most countries retained their relative positions compared to other countries over the decades. US, UK, Canada, Belgium, and Australia, for instance, exhibit the highest shares throughout the entire period, while Portugal, Spain, Germany, Italy, and Austria always rank lowest. As an interim conclusion, we can therefore state that, from 1960 to 2008, all observed countries decreased employment shares in manufacturing by about 10 percentage points on average, which is in stark contrast to the evolution of total service employment whose corresponding share rose by up to 30 percentage points over the same time span.

Total services are a very heterogeneous category, however, comprising lots of distinct activities with widely differing features. It thus appears useful to further break down the category ‘total services’ into more basic components. Broadly following Wren (2013: 117), I distinguish four different types of services (for details on these classifications see chapter 7.2.):

1. Non-dynamic services (hotels, restaurants, retail

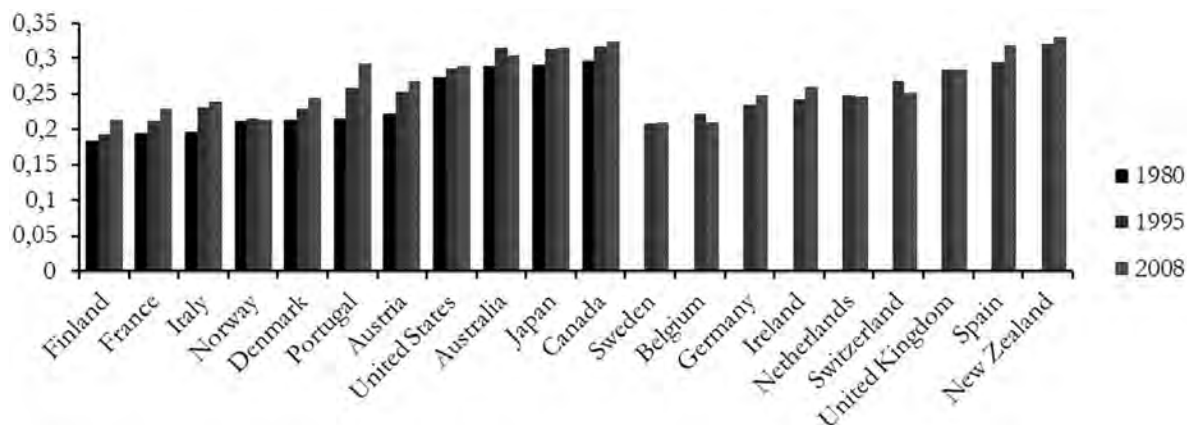


Table 3.3: Share of Non-Dynamic Services in Total Employment. Source: OECD, Data on Australia from 2006, on Canada from 1981, on France from 2007, on Portugal from 2006/1971

- and wholesale trade, other community, social, and personal services)
- 2. Storage, transport, and communications
- 3. Dynamic-services (finance and insurance, real estate, business services)
- 4. Welfare services (education, health and social work, public administration)

For non-dynamic services, time series on employment are available for all countries only with the beginning of the 1980s (see table 3.3). Despite the more restricted observation period, there is a clear increase in employment shares in all countries except Belgium, Switzerland, and the UK; in most cases the increases amount to three or four percentage points, which is somewhat less than the growth in total services. The absolute shares

vary strongly. The highest fractions can be found in the Anglo-Saxon countries and Japan (about 30% to 35%), the lowest in Finland, Belgium, Sweden, and Norway (about 20%).

Hardly any growth can be noticed in transport, storage, and communications (see table 3.4). In 2008, all countries' shares oscillate between 5% and 7% of total employment, just like they did in 1970, with only minor shifts among countries. It might be the peculiarly close conjunction with manufacturing that, contrary to the general trend, hindered employment shares in this sector from rising.

A much more striking upward movement is observed in dynamic services (see table 3.5). Starting from an initial level no higher than 10% in any observed country in 1970, dynamic services rose by more than 10

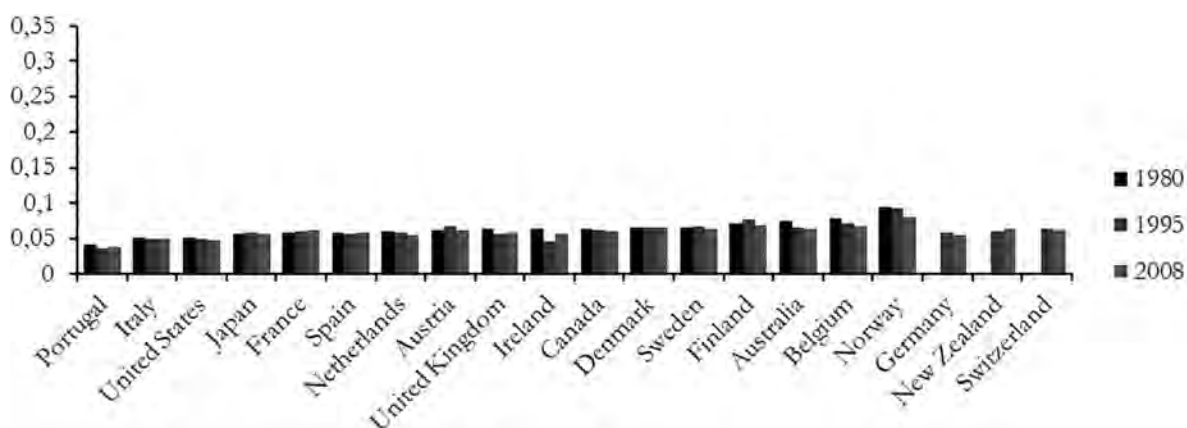


Table 3.4: Share of Storage, Transport, and Communication in Total Employment. Source: OECD, Data on Australia and Portugal from 2006

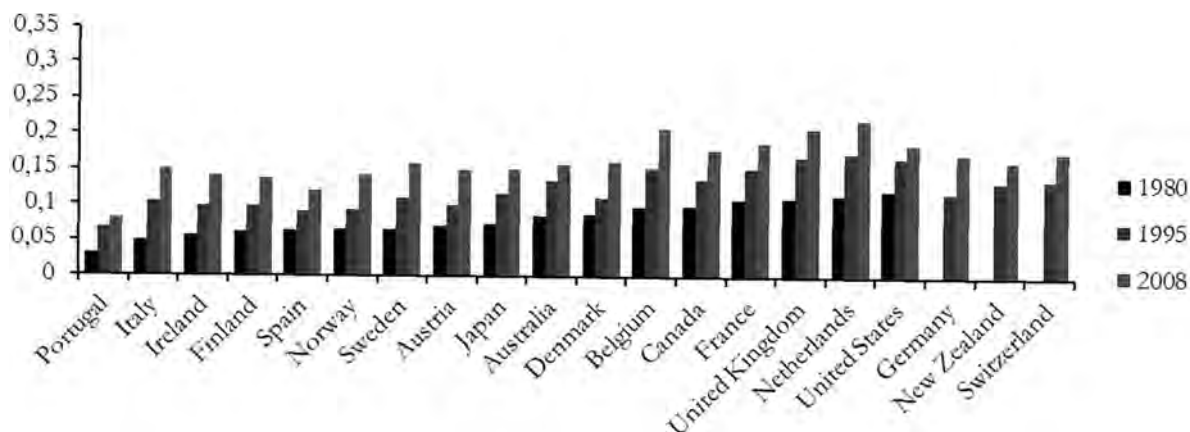


Table 3.5: Share of Dynamic Services in Total Employment. Source: OECD, Data on Australia and Portugal from 2006

percentage points in most cases, sometimes even more, so that in 2008, apart from Portugal, employment shares in this sector ranged from 12% in Spain to 22% in the Netherlands. Interestingly, there are only few catch-up effects. Countries with higher shares in the beginning of the time series mostly upheld their lead until the end of observation, sometimes even widening the distance to the relative laggards whose speed of growth does not match the frontrunners’.

Much more varied is the development of employment shares in welfare services (see table 3.6). As with non-dynamic services, time-series on this topic are short, making a comparison over the entire period impossible. What clearly emerges from the data, however, is that no uniform growth trend is inherent to all countries. While some experienced an extraordinary expansion

of welfare employment from 20% to 30% or more (e.g. Denmark, Norway, France, and Finland), others stagnated (e.g. Canada, at about 20%) or grew only moderately (e.g. Spain, from 15% to 20%, or Austria from 17% to 22%). Portugal and Japan were outliers in 1970 with shares of about 10%, but caught up to a certain extent over time. Yet even in cases where a substantial expansion occurred, major parts of it took place before 1990; later increases a far less substantial (with the exception of Switzerland).

As a summary, it is mostly dynamic services which, from the 1970s on, are accountable for service employment growth, as they have steadily and significantly increased in all countries over the whole period. Also non-dynamic services added to higher service employment shares everywhere, even though their contribution

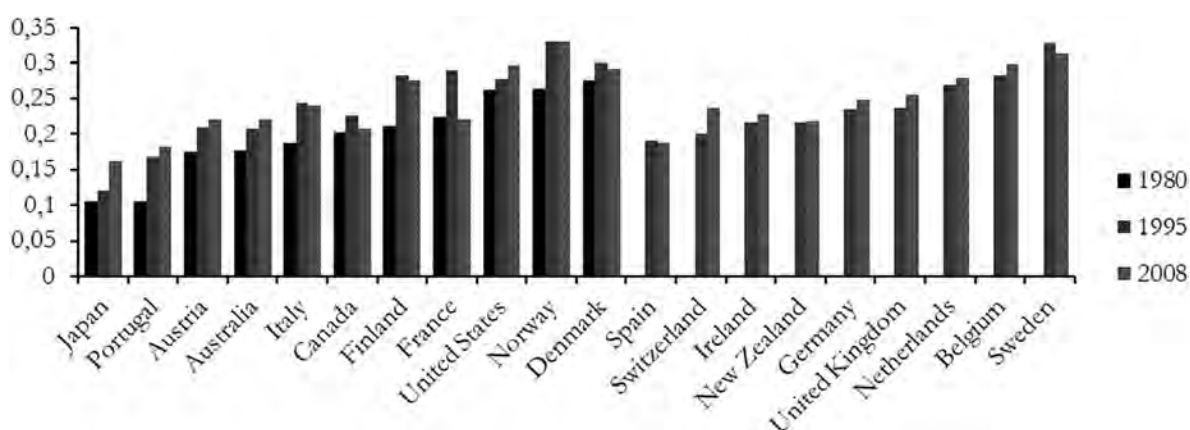


Table 3.6: Share of Welfare Services in Total Employment. Source: OECD, Data on Australia and Portugal from 2006, on Canada from 1981, on France from 2007

is roughly only half as large as that of dynamic services. Welfare services, too, play a crucial role in service employment expansion in some countries, especially in the years up to 1990, but a minor one thereafter. Transport, storage, and communications, finally, do not make up for higher employment shares in 2008 as they did 30 years earlier and therefore are negligible as a cause of increasing service employment.

3.2 THEORIES ON TERTIARISATION

There is a magnitude of competing theories on the principal causes of tertiarisation most of which can be discerned by whether they choose the supply or demand side as a point of departure.¹

1. On the supply side, it is the unequal pace of *productivity growth*, which is significantly higher in manufacturing than in services that is accountable for the secular shift to more service employment. If demand for manufactured goods is assumed to be constant, rising productivity means that ever fewer workers are needed to produce the same amount of output, resulting in less labour-intensive production and fewer people employed therein. The service sector then will have to absorb the redundant share of the workforce since tertiary production is still very dependent on labour inputs. Dating back to the 1940s, this strand of reasoning was most influentially put forth by Clark (1940), Fourastié (1949), and Bell (1976).

Initially, technological progress was identified as the main source of productivity growth which is likely to benefit manufacturing markedly more than services. Because services often rely on face-to-face interaction of providers and customers, which can hardly be enhanced by technical improvements alone, they do not hold the

same potential for productivity hikes as industrial production. Other attempts to rack up service productivity, besides technological innovations, are equally bound to fail as they, as a concomitant, necessarily will deteriorate service quality, thus neutralising the productivity boosting effort. If, for instance, waiters in a restaurant are required to service a higher number of tables, the quality of the service is likely to decline. There may be some innovations that help to increase productivity in services (the introduction of electronic cash registers may shorten the time span the waiter needs to add up each customers' bills), but the improvements are marginal compared with those reached in manufacturing.

Since the time of Clark, Fourastié, and Bell, two more causes have gained currency in explaining why productivity rises faster in manufacturing (Palma 2008). First, international trade, particularly with non-industrialised countries in the south, has helped to bring down the costs of manufactured goods by allowing for cheap imports, thereby expediting the relocation of low-skill manufacturing jobs to countries with a lower wage floor. As a consequence, jobs in manufacturing become increasingly scarce in highly developed countries, requiring former industry workers to seek jobs in the service sector. The theory underpinning this argumentation is more formally described by the Heckscher-Ohlin-Model and the Stolper-Samuelson-Model, providing some insights into the motivations and outcomes of trade among countries in different states of development. The Heckscher-Ohlin-Model assumes that economies produce and trade only two goods, one is labour-intensive and the other one capital-intensive. Once the two economies start to engage in a trading relationship, each is going to export the one sort of goods for which it holds a comparative advantage and to import the product for which it has a relative disadvantage. In case of trade between a highly industrialised, capital-abundant country and a less industrialised, labour-abundant country, this means that the more highly developed country will sell capital-intensive goods to the less developed country and, in turn, buy more labour-intensive ones. The Stolper-Samuelson-Model then predicts what is likely

¹ Some theories may not neatly fit this categorisation. Palma (2008), for instance, argues that Dutch disease may induce tertiarisation by weakening a country's local industry. Causes like these, however, apply only under very specific circumstances and do not account for the general trend observable in all advanced economies. This study focuses only on theories aiming to explain the general trend.

to happen within the economies of the trading partners. In the more capital-abundant country, the share of income that goes to the production of labour-intensive goods will decline as these are increasingly purchased from abroad; the sector will consequently shrink and reduce its share of employment. The capital-intensive sector, by contrast, steps up its revenues through exports and therefore can expand. Both trends may not be employment-neutral, however. Since more capital-intensive production entails that demand for labour inputs is getting relatively smaller, it is implausible that the expansion of the capital-intensive sector can outweigh the loss of employment in the declining labour-intensive segment. The result of trade then is less total employment in the production of goods in the more advanced country (even though overall economic efficiency may have risen). In the economically less advanced country, the same applies in a reversed way.

These conclusions have been questioned by Nordhaus (2005) who is more sanguine about the aggregate gains of trade industrialised countries will be able to reap. If through higher imports price levels of labour-intensive manufactured goods go down, it allows customers to buy more and thus generates additional demand for capital-intensive products. Likewise, firms get the chance to purchase cheaper, labour-intensive intermediates on global markets which give them an extra competitive edge, leading to higher sales and a more accelerated expansion of business than predicted by the Stolper-Samuelson-Model. As such, international trade may cause a downsizing of labour-intensive production in developed countries, but these losses could be offset by overall gains in wealth, helping the capital-intensive sector to grow disproportionately on a scale sufficient to absorb all labour that had become redundant.

Second, outsourcing has become a new strategy of manufacturing firms, aiming to cut costs by purchasing services from external providers rather than performing them by themselves. This concerns low-skill services like facility cleaning as well as high-end services such as consulting, software applications, or advertising. The trend towards outsourcing is reinforced by products be-

coming more sophisticated both in terms of their technological components and their marketing as consumers' wishes have grown more demanding, raising firms' needs for highly specialised services as inputs. In an ever more competitive environment where firms are coerced to keep their costs under tight control, many will have no other option than to outsource some of the required services since providing them by themselves would not be affordable. However, any service outsourced by a manufacturer is not counted as part of the manufacturing sector any more, but as pertaining to the service sector. On paper, this drives up employment and value added in services although, in fact, production and consumption patterns have not been altered. Tertiarisation then may be, partly, nothing more than a mere statistical artefact.

2. On the demand side, *affluence* has been growing in tandem with productivity in industrialised countries. With rising productivity, manufactured goods become ever cheaper and abundant. Once a certain level of supply in material goods has been reached, consumers may be saturated and turn their demand more towards services. Therefore, with growing consumer affluence a larger proportion of income might be spent on services, increasing the share of employment in this sector.

The level of wealth by which consumption patterns change was presumably reached in the 1970s. Earlier gains in manufacturing productivity and affluence used to have the opposite effect of further boosting industry employment as described in the model by Meidner and Rehn (1951). They show that rising productivity in manufacturing can even increase the corresponding employment share if the gains of greater productivity are shared with employees in the form of higher wages. These will further stimulate demand for material goods and consequently allow for continuous expansion of the industrial sector. In this scenario, potential job loss due to productivity growth is fended off by stronger consumer demand.

In the 1970s, this win-win-situation came to an end as consumers' demand for manufactured goods was largely satisfied, inducing them to direct more of their

consumption towards services. And services can thus be considered a kind of luxury item for which demand grows disproportionately once more basic needs have been met (Kongsrud / Wanner 2005, Kalwij / Machin et al. 2007). This results in services taking an ever larger share of output and employment as incomes grow.

How far this effect of saturation goes is highly debated, however. Rowthorn and Coutts (2004) find that actual demand in manufactured goods does continue to increase with higher affluence rather than to abate, but that productivity growth in manufacturing outpaces demand growth. As a result, a bigger part of income can be spent on services while consumption of manufactured goods still keeps on rising. In this view, saturation does not mean that demand for secondary products is stagnant in absolute terms, but that it merely grows more slowly than demand in tertiaries.

3.3 EVIDENCE ON THE CAUSES OF TERTIARISATION

These points have been subject to detailed scrutiny in the literature which, unfortunately, is afflicted by the common problem that suitable proxies for productivity growth and affluence are not readily available. Most researchers employ a country's GDP instead, using it mostly as a substitute for exact productivity data. GDP, in fact, is far from being a perfect proxy for productivity as GDP can also grow, for instance, through higher commodity exports that do not affect productivity. Moreover, it is likely to simultaneously gauge a country's affluence which is often endogenous to its productivity. Hence, by using GDP as a proxy, the effects of productivity and affluence cannot be separated. Despite these limitations, these studies are helpful in that the vast majority of them agree on the same conclusion that international trade is not the primal cause of tertiarisation, but that productivity or affluence (as measured by GDP) have played a much bigger role.

One recent study stems from by Kollmeyer (2009) who analyses 18 OECD countries between 1970 and

2003, taking into account the indirect effects of trade as suggested by Nordhaus. Kollmeyer uses both GDP and differential productivity growth in his calculations, with the former acting, rather uncommonly, as a proxy for national wealth. He finds that the GDP has the biggest impact on tertiarisation with a share of 34% of the overall effect whereas, surprisingly, productivity accounts for only 15%. Trade takes on a middle position with a share of 24% of the aggregate effect. It is very likely that GDP inadvertently picks up part of productivity's real effect so that 15% seems to be underestimated; given the multicollinearity of both variables, productivity appears not to have a smaller effect than trade. Still, trade is accountable for about a quarter of aggregate tertiarisation, implying that any demand stimulation by trade does not outweigh its labour shedding effect in manufacturing.

Rowthorn and Coutts (2004) yield the same result for the role of international trade in their analysis of 23 industrialised countries during 1963 and 2002. Deviating from Kollmeyer's approach, they do not add to their estimation a separate measure of productivity to stand besides the GDP as explanatory variable. They assess the effect of GDP to account for roughly 50% of the decline in manufacturing employment which is equal to the value in Kollmeyer's study if the parameters of GDP and productivity were added together. Two older studies by Alderson (1999) and Saeger (1997), using data from the late 1960s to the early 1990s in 18 and 14 OECD countries, essentially confirm these results. Trade is responsible for about 20% to 30% of tertiarisation, while GDP growth is the cause of about 50% of job share loss in manufacturing. Rowthorn and Ramaswamy (1997) are among the first to use productivity data while dropping GDP completely from the regression. In their results for the EU 15, US, and Japan (1970–1994) differentials in productivity growth brought about two thirds of tertiarisation, whereas the impact of trade is next to none. As this deviates markedly from results of other studies, it may be instructive to have more studies that do not include GDP as a variable, but try to proxy productivity and wealth in a more straightforward way.

Kucera and Milberg (2003) choose a different research strategy by abandoning regression altogether and conducting a factor-content-analysis instead, by which they are able to determine the labour content embodied in changes in manufacturing output and the extent to which manufacturing trade impacts this labour content. Their analysis comprises ten OECD countries from 1978 to 1995. The conclusion the authors arrive at is strikingly similar to the majority of results of the aforementioned studies: 21.5% of tertiarisation is due to international trade. Therefore, today's state of knowledge about the underlying causes of tertiarisation can be concisely summed up: roughly 50% of service employment growth has been triggered by growth of either productivity or affluence (which is hard or even impossible to keep apart), only 20%–30% stem from the impact of international trade.

Outsourcing as a final reason for tertiarisation has been met with much less interest because it is measurable only through very detailed input-output-analyses

for which data availability is quite limited. Montresor, Vittucci, and Marzetti (2011) performed one such analysis for seven OECD countries over 20 years (1980–2000) and concluded that integration of manufacturing and services indeed has increased, but that the effect is too small to account for a significant share of tertiarisation. One drawback of their study is, however, that they are unable to estimate the exact size of the overall effect outsourcing takes on manufacturing and service employment.

McCarthy and Anagnostou (2004) tried to estimate the extent of outsourcing in British manufacturing between 1979 and 1998. According to their estimations, manufacturing might look smaller than it really is: over the years outsourcing has increased and is accountable for about 10% underestimation of real manufacturing output at the end of the observation period. This is considerable, but certainly carries less weight than the effects of productivity and trade.

4. THE IMPACT OF ATYPICAL EMPLOYMENT ON WAGES AND TENURE

This chapter deals with the question of which individual consequences it has to be employed on atypical terms. There are two factors central to the acquisition of social security entitlements: the continuity of the employment relationship and the wage earned. In order to understand how atypical workers may be disadvantaged by welfare schemes, it is therefore necessary to be informed about the extent to which non-standard jobs differ from standard ones in remuneration and tenure. Over the past few years, a large number of micro-level studies on various OECD countries have been published, that analyse the disparities in wage and continuity between standard and non-standard work, which I summarise in this chapter. First, however, I begin with an overview of theoretical expectations about the individual effects of part-time and temporary jobs.

4.1 THEORIES ON THE EFFECTS OF ATYPICAL EMPLOYMENT

The previous chapter has shown that firms' foremost reason to hire atypical workers is the flexibility they provide in synchronising staffing levels more precisely with fluctuating demand and extensive operating hours. Yet this flexibility comes with a downside for employees' productivity, repressing substantially the potential for wage growth: since atypical jobs are mostly concentrated in the labour-intensive service sector rather than in capital-intensive manufacturing, their mean labour productivity is below the average of the total economy. Beyond this sectoral effect, there are certain other features inherent to atypical employment that are likely to curb labour productivity growth and hence depress compensation.

Classical human capital theory states that, due to

the reduced number of hours they are present at the workplace, part-time employees do not acquire the same work experience as full-time workers. The same applies to temporary workers who have to change employers regularly and thus do not gain the same seniority as workers with long tenures. Moreover, firms are unlikely to invest as much in training measures for atypical as for standard employees. A significant fraction of atypical employees is therefore likely to end up as parts of a supplementary workforce, hired merely for the purpose of preventing temporary staff shortages, while the main work, involving the most productive and reliable tasks, is still the remit of standard employees. For these reasons, workers on atypical jobs face a high risk to get stuck in positions requiring less sophistication, offering smaller chances to be promoted and, consequently, lower pay.

Another cause of diminished productivity, closely associated with the use of atypical employees as an ancillary workforce, may be the putative negative selection of workers into this kind of employment. If, for the most part, employers recruit part-time and temporary workers to fill staffing gaps, it seems reasonable to assume that these positions will attract less educated or less motivated applicants who were denied a standard job (Hu / Tjeldens 2003). This, in turn, would result in lower productivity of atypical workers and justify smaller pay. In accordance with Doeringer and Piore's theory of segmented labour markets, atypical work in general may be stigmatised as a sort of second-rank employment suitable only for less qualified and less committed job seekers, leading employers to assume reduced productivity *a priori*, although in many cases this may be false.

Apart from productivity differentials, pay penalties can also originate from employers' fix costs, which are approximately the same for standard and non-standard

workers, but with atypical employees working fewer hours or shorter tenures to recover them. Firms may therefore try to split the costs by offering lower wages.

On the other hand, there is also a counter-argument to the previous hypotheses, predicting an extra pay in atypical jobs, rather than a penalty. Since working hours in atypical jobs are less attractive than in standard jobs and the associated risk is higher due to lower employment stability, workers have to be compensated by higher wages if firms are to satisfy their need for flexible work arrangements (Schömann / Rogowski / Kruppe 1998). This rationale generally holds for part-time and fixed term workers alike, but might play a bigger role for the latter group who sometimes is specifically hired to fulfil special, temporary assignments the employer lacks the knowledge to complete by himself. Given their particular value to the firm, fixed term employees might therefore have a greater leverage to extract from employers an extra compensation for their insecure status.

Besides a wage penalty, we can also expect that atypical jobs are marked by less stability than regular ones, i.e. the average tenure of an atypical employment relationship will be shorter and more frequently be followed by periods of unemployment. It is only natural to assume lower stability for temporary contracts, because it is the very purpose of such contracts to allow for external flexibility without incurring firing costs. Fixed term workers are thus continuously faced with the risk of recurring unemployment. The effects of part-time work on employment stability, by contrast, are not as evident. In principle, part-time contracts (unless they are also temporary) are subject to the same employment protection legislation as full-time ones,¹ so that tenures need not be shorter based on the type of the contract. There are nonetheless some factors that could make part-time workers more vulnerable to losing their jobs than standard employees. Part-timers are often hired to cope with fluctuations and peaks in demand, which makes them more likely to be the first to become re-

dundant when demand is changing or declining (Budelmeyer / Mourres / Ward 2004, Holmlund / Storrie 2002). As many of them have less experience and lack seniority as well as employer provided training, their functional flexibility may not be as strongly developed as full-timers'. Moreover, if the employer has invested less in training of part-timers, the financial loss when dismissing them is also smaller. Should, on top of these reasons, the assumption of negative selection of unqualified workers into atypical employment turn out to hold, thereby rendering productivity of part-timers generally weaker than full-timers', then the risk of part-time employees to be among the first to lose their jobs will be particularly high.

Literature on this topic often suggests the opposite, however. Rather than focusing on growing instability, many authors highlight the increasing opportunities atypical contracts provide for job seekers with little labour market attachment to restart an employment career (Barbieri / Sestito 2008, Booth / Francesconi / Frank 2002, Picchio 2008). A limited duration of service and a reduced number of working hours decrease the risk the employer is exposed to when hiring someone whose skills and motivation may be at question. This, in turn, could prove as a stepping stone back into work for unemployed persons who otherwise would not have been given the chance due to insufficient skills or long absence from the labour market. In this context, atypical employment could even have the counterintuitive effect of initiating stable, long-term employment relationships.

At this point, two competing strands of theories about the stability of atypical work have been identified: the first conceives of atypical jobs as dead ends, inadequate to induce lasting employment, as they are highly sensitive to demand fluctuations and afflicted by small labour productivity. The second perceives non-standard contracts as stepping stones back into work, eventually leading to permanent jobs, primarily for those whose labour market assets are small. Since it is impossible to determine solely through theoretical considerations whether the stability enhancing effect outweighs the

1 There are some exceptions for part-time contracts including only very few hours (e.g. in Germany), which then are not covered by the same employment protection legislation.

stability undermining effect or vice versa, in the next section I give a summary of the empirical evidence on wages and tenures of atypical employees, while paying special attention to the direct comparison with standard employees.

4.2 EMPIRICAL EVIDENCE ON WAGE PENALTIES

The scale of wage penalties and its determinants are among the most popular research topics in the field of atypical work. Because the number of studies on this issue is large, each highlighting different countries, time periods, and methods, it is possible here to derive a clear picture of the extent of wage gaps and their underlying causes across most countries and years covered. In order to reduce the number of reported studies to a feasible level, I have restricted this overview to studies at least partially concerned with the countries and time periods included in my dataset.

The most recent comparative work on part-time employees is Colella (2014). He focused on women's hourly wages in France, Germany, Italy, Netherlands, Spain, Switzerland, and UK in the period from 2004 to 2011. When controlling for age, educational attainment, and job type, he is able to detect a significant gap between part-time and full-time wages in all countries except Sweden. The penalty is largest in Spain (19%), somewhat lower in Germany, Italy, and Switzerland (approximately 15%), and lowest in the UK and the Netherlands where women with reduced working time earn only about 10% less. In Sweden, by contrast, there is even a premium to part-time employment of 25%. The parameters used do not suffice to explain the entire penalty in any of the observed countries and their explanatory power varies considerably across the observed countries. In the UK and the Netherlands, for example, more than 50% of the gap remain unexplained, whereas in France and Spain the corresponding figure is less than 10%. Therefore, as a second step, Colella tried to account for negative selection in his regressions by includ-

ing more variables connected to household type, health status, and work history. If the wage gap and the unexplained fraction thereof widen in spite of the additional controls, this is an indication that negative selection based on barely measurable, personal factors is present. In Italy, Spain, and Germany the results indeed suggest that this is the case. The results for UK and France do not change, while in the Netherlands the penalty even turns into a small premium. The same applies to Sweden where the effect was even more pronounced. In the latter two countries, rather than negative selection, it was positive selection of women into part-time jobs, causing their hourly wages to rise above the level of standard jobs. Colella concludes that female part-time work has become the new normal in the Netherlands and Sweden, associated with neither negative selection nor wage discrimination. The opposite holds for Germany, Spain, and Italy (less so in France and UK), where jobs with reduced hours appear inferior in terms of remuneration. Yet it remains open to question whether this inferiority is caused by adverse selection based on personal features or by genuine wage discrimination on part of the firms.

Other studies do not support Colella's result of no wage gap—apart from the controlled factors—in the Netherlands. Hu and Tjiddens (2003) compared British and Dutch data from 1994 to 1998 and do find wage discounts in both countries for part-time employees with short working time (between 12 and 21 hours): in the Netherlands, they earned on average 11% less than their full-time counterparts, with the usual control parameters unable to explain all of the gap. Part-time employees with long regular working time (between 22 and 29 hours), by contrast, earned only 3% less, which is completely accounted for by the controls. Hence, Dutch part-time employees were affected by a pay penalty that grows larger the fewer hours they work. Another study by Russo and Hassink (2005) provides one possible reason for this specificity of part-time wages in the Netherlands. By examining Dutch firm data of the years 1997 to 2000, they show that no wage gap exists for 20 years old job entrants, but that pay gradually diverges over the course of a career due to the fact that full-time

employees are promoted more often, whereas part-time employees rarely advance to more prestigious positions.

This is still favourable compared to the situation in the UK. There, according to Hu and Tijdens, part-timers earned about 30% less, no matter what their exact working time was. Control variables cannot explain the total size of the gap. Moreover, the unexplained fraction is almost three times larger in the UK than in the Netherlands, implying that wage discrimination may be more pronounced in the UK. Less pessimistic are Manning and Petrongolo (2008) who analysed the situation of working women in the UK in 2003. They describe a gross wage gap of only 22% for part-timers, which is considerably smaller than in other studies. About half of this gap is caused by educational variables, firm location and size, seniority, and economic sector, the other half by the current occupation. Only 2.5–3.4 percentage points remain unaccounted for.

Another comparative study on women's part-time penalty was conducted by Bardasi and Gornick (2008) who used older data from 1994 and 1995. The examined countries are Canada, Germany, Italy, Sweden, UK, and the US. They exclude, however, women in marginal part-time (i.e. weekly working time of less than ten hours). Despite this shift in focus, their results resemble Colella's. Without controlling for any intervening factors, they found a gross wage gap between part-time and full-time of 22% in the US and Italy, 12–15% in Canada and the UK, 8% in Germany, and a marginal premium of 1% in Sweden. When control variables enter the estimation, these gaps narrow to 15–18% in Italy and the US, and 9% in Canada and Germany. In the UK, the gap almost disappears. Bardasi and Gornick's results therefore are consistent with Colella's findings that in Germany and Italy a part-time pay penalty exists which cannot be explained by observed variables, and so is likely to be caused by discrimination or negative selection beyond characteristics such as health, household type, or work history. The same obviously holds for Canada and the US. Only the UK seems to deviate from Colella's, as well as Hu and Tijdens's, estimates by displaying only small signs of a pay penalty once the

controls are added. Bardasi and Gornick further stress that differences in occupation bear far more explanatory power for pay gaps in liberal countries such as Canada and the UK than in Continental Europe. This may be an immediate consequence of greater labour market segmentation in liberal economies where part-time work in low-skill jobs seems more pervasive.

O'Dorchai, Plasman, and Rycx (2007) carried out a similar analysis of men's part-time wages. They use data from Belgium, Denmark, Ireland, Italy, Spain, and the UK in the year 1995. Like Bardasi and Gornick, they exclude marginal part-time by defining part-time as a regular weekly working time between 15 and 30 hours. In a descriptive account of the data without controls they identify gross wage gaps between part-time and full-time jobs of 14% in Spain, 19.5–22% in Belgium, Denmark, and Italy, 40% in the UK, and up to 75% in Ireland. The enormous size of the Irish gap is explained by the authors with a heavy clustering of part-time employment among young people, often students, holding auxiliary positions in the service sector. Human capital endowment, occupation, and the economic sector are found to be responsible for the complete size of the gap in Denmark, 80% in Spain, 72% in the UK and Belgium, 66% in Ireland, and 50% in Italy. Common to all countries is that education contributes the largest share of explanatory power. Therefore, in all countries included, except Denmark, a considerable portion of the pay penalty cannot be attributed to the observed variables, but must have other reasons. Contrasted with the results for women, men obviously suffer a larger part-time pay penalty, resulting for the most part from differences in human capital, whereas for women the occupation held goes the longest way in explaining the penalty.

Evidence of a possible part-time pay penalty is also mixed in the study of Fernandez-Kranz and Rodriguez-Planas (2011) for Spain during the years 1996–2006. They estimate a wage difference between full-time and part-time workers of about 38 log points which shrinks to 23 log points when the usual controls are included. Once unobserved heterogeneity is controlled for, the gap further decreases to 11 log points.

These unexplained points are then attributed to changes in employer, often associated with switches to part-time. Only for part-timers with temporary contracts an inexplicable fraction remains. The authors thus confirm a negative selection into part-time jobs for Spain, but do not find evidence for downright discrimination unless the employee is also on a temporary contract.

A large wage penalty is identified by Wolf (2014) for Germany during the period of 1984–2010. The gross wage gap averaged over the entire time span is 41% for men in West Germany (30% in East Germany) and 21% for women (9% in East Germany). Adding work history, human capital, firm characteristics and household type to the wage equation reduces the gap down to 21% for men in West Germany (15% East Germany) and 6% for women (4% in East Germany). A relatively large portion of the disparity remains unexplained and implies that neither negative selection nor discrimination can be ruled out as possible causes. He further notes that work history has the strongest impact on the scale of the wage gap, lending support to the assumption that part-time work may have prolonged scarring effects.

So far, once controls have been added to the analysis, the only countries where no unexplained part-time pay penalty can be found are Sweden and Denmark, which gives rise to the assumption that the wage gap between full-time and part-time may be smaller in Northern European countries. Hardoy and Schøne (2006) have corroborated this hypothesis with an examination of Norwegian data from 1997 and 1998, encompassing both women and men. Since people with minor skills and little work experience are overrepresented among part-time employees, there is a wage gap in absolute terms, yet once personal characteristics of the employee, education, work experience, location of the firm, and economic sector are controlled for, the wage penalty vanishes entirely. This relative equality in remuneration is traced back by the authors to a highly compressed wage structure and strict equal treatment laws, prohibiting effectively discrimination based on working time. Without controls, however, Hardoy and Schøne esti-

mate that twenty years of professional experience result in a 30% pay rise for full-timers, but only in a 23% increase for part-timers. Likewise, each additional year of schooling pushes up full-time wages by 5.1%, while the corresponding number for part-timers is only 4.6%. It follows that working fewer hours may not be object to specific discrimination in Norway, but that, as a matter of fact, its incidence is largely concentrated on less skill intensive activities, offering only limited prospects of wage rises.

Looking beyond Europe, Australia too is among the countries where no part-time pay penalty can be found. Booth and Woods (2008) analysed data from Australian employees between 2001 and 2004 and conclude that, despite a generally lower educational attainment among part-timers, women on reduced hours earn about 9% more (men even 14% more) compared to full-time, if other factors are controlled for. Rodgers (2004) consults Australian data from the year 2001 and confirms these numbers on a somewhat lower level. After correcting for the same variables, she arrives at pay premiums of 9% for women and 3% for men. Before any control variables are included, however, the gross part-time wage gap amounts to 21% for men and 9% for women.

Informed by the joined evidence of the cited studies, it is safe to state that part-time employees earn a lower hourly wage than their full-time colleagues in almost all industrialised countries. Since most studies differ strongly in methods, definitions, time periods and control variables, estimated gross wage gaps oscillate within a range of 10–40%, with some contradictory results for single countries, not allowing to carve out clear-cut country clusters. Most studies concur, however, that part-time employment is more common among low-skilled workers with fractured work histories on less prestigious and less paying positions in the service sector. Having small children also raises the probability of working reduced hours. Still unclear is whether there is discrimination or a negative selection into part-time employment beyond the mentioned factors. In Scandinavian countries and Australia no such evidence has been found, yet results are at least mixed for all oth-

er countries, hence not refuting the presumption that part-time work may be stigmatised. As a conclusion, our previous hypotheses predicting lower hourly wages for part-timers are largely confirmed by empirical evidence, whereas a pay premium seems to exist only in a minority of countries and only when all confounding factors are controlled for.

The question whether there is also a wage penalty for temporary workers has not yet received as much attention. Most researchers' foremost interest when dealing with fixed term work is the stability of such employment relationships, while they turn only briefly to wages; still these quite cursory studies hold some interesting information about the general trend in remuneration of temporary workers. The most recent work stems from Gebel (2010) who compares earnings of German and British job entrants during 1991 and 2007. He finds a gross wage gap of 21% in Germany and 10% in the UK between job starters with an open-ended contract and those with a fixed-term one. Over the course of five years, however, this initial disparity completely disappears, leaving no scarring effects.

The only international overview is provided by the OECD (2002). Analysing employee data from 13 EU countries in 1997, the authors identified the largest gross wage differences in Southern European countries such as Spain (47%), Portugal (35%), and Italy (28%), but also in the Netherlands (37%) and Ireland (33%). Germany and Austria have the smallest gaps (11%). The study emphasises, however, that these gaps only affect the 75% of temporary employees with lower earnings, whereas those in the top earnings quartile receive at least as much as their colleagues with permanent contracts, sometimes even significantly more. Controlling for age, education, tenure, firm-size, and job characteristics, wage gaps narrow in all countries, but never vanish entirely. Men suffer the highest penalties in the Netherlands (24%), Spain, and Finland (both 16%), women in France, Ireland, and the Netherlands (all 22%). The smallest gaps for men are found in Portugal (7%), Denmark, and Austria (both 6%), for women in Denmark (5%) and Belgium (0%). Belgium is the only country

in the analysis where the included variables suffice to explain the entire wage discrepancy. In all other countries, a substantial portion of the initial gap, often more than half, is not accounted for, thereby implying that reasons other than the easy observable must play a crucial role here.

Booth, Francesconi and Frank (2002) arrive at a similar conclusion in their analysis of UK data between the years 1991–1997. Using controls comparable to the OECD's, their calculations yield a wage gap of 16–17% for men and 13–14% for women. The inclusion of fixed effects to correct for unobservable employee characteristics diminishes the gap to 7–11%, but does not close it. This must be interpreted as an indication that wage discrimination or negative selection into temporary employment does occur, at least at the lower end of the earnings spectrum.

For Germany, Mertens and McGinnity (2003) carried out a detailed study about the compensation of male temporary employees in the period of 1995–2000. Based on purely descriptive data, they find that low-skilled men are overrepresented in low-pay temporary jobs, leading to an average wage gap of about 32%. Once more, looking only at the mean size of the disparity would be misleading because, in accordance with the results of the OECD study, the top quartile of temporary employees earns more than corresponding workers on permanent contracts. The authors augment the OECD's set of control variables by further considering various household characteristics, yet nonetheless arrive at an estimated wage gap whose scale is even larger than in the OECD study (15% as compared to 10%). Analysing the quartiles reveals some important details: in the top quartile, the initial wage premium disappears and turns into a 5–10% penalty, while in the bottom quartile the gap shrinks slightly to 15–25%. This clearly shows that, even though temporary employees are a quite heterogeneous group which, at least, in the upper parts of the earnings spectrum, comprises also well qualified persons in high-productivity sectors, they are all affected by a pay penalty, most likely caused by their status as atypical employees. Hagen (2002) performs

comparable estimations for Germany using 1999 data, yet without breaking them down by quartiles. Supplementing the OECD's controls with fixed effects, his calculations return a wage disparity of even bigger size (23%) than previously estimated by the OECD, bolstering the hypothesis of wage discrimination among fixed-term workers.

A wage penalty of similar size is detected by Blanchard and Landier (2002) in French data on 20 to 24 year old job starters between 1983 and 2000. Taking into account differences in education and age, temporary employees earned 29% less than permanent ones in 1993 and 22.5% less in 2000. The wage gap was thus narrowing with more years on a job, which the authors explain by an improved economic environment and by firms' increasing familiarisation to temporary contracts, making employers and employees abandon negative preconceptions about atypical work that had the effect of skewing wages downward.

Holmlund and Storrie (2002) complement this overview with results for Sweden between 1987 and 2000, where they find a considerably smaller wage gap of about 10% once job and personal features are controlled for.

Despite empirical evidence on the compensation of temporary workers being sparse, we can nonetheless draw some conclusions. If intervening factors like type of job, economic sector, education, and work history are not controlled for, gross wage gaps of about 20–40% emerge between fixed-term and permanent workers, which is somewhat more than between full-time and part-time employees. When control variables are added, wage gaps shrink to a range of 10–20%, but never fully disappear, thereby suggesting that negative selection or discrimination may play a significant role in the determination of temporary employees' wages. Contrary to the case of part-time work, Scandinavian countries are no exception in this regard, as they too penalise temporary contracts by smaller remuneration. Corresponding to previous conclusions on part-time work, the hypotheses are therefore confirmed that (i) employees characterised by low productivity cluster in temporary

jobs, and (ii) these jobs are largely situated in less prestigious, low paying service sectors, determining a more depressed wage level of fixed-term work. Only in the top earnings quartile do fixed term contracts seem to be a labour market tool that is vastly used on the most productive employees, thus supporting the theory that firms employ specialists for specific, temporary projects on fixed term basis. Nevertheless, this initial wage edge must be put into perspective as it is completely neutralised by the inclusion of control variables, revealing that even the most qualified temporary employees are worse off than their standard peers.

4.3 EMPIRICAL EVIDENCE ON EMPLOYMENT STABILITY

Political measures to further liberalise and promote temporary employment contracts were propelled by hopes to stimulate labour market flexibility and job growth, especially to the benefit of those facing the highest obstacles to employment due to low skill profiles or fragmented work biographies. Large parts of research on temporary jobs therefore scrutinise the stepping stone hypothesis, which posits that the probability to find a new job or even be offered an open-end job will be significantly increased subsequent to a temporary one and that, consequently, a fixed term worker's individual risk to fall back into unemployment is likely to be reduced.

Gash (2008) provides the most recent comparative study of this topic including France, Germany, Denmark, and the UK between 1995 and 2001. He finds that after four years about two thirds of the observed employees on temporary contracts in Denmark and Germany advanced to an open-ended job, whereas in France and UK only 50–60% did so. 30–40% (UK: 20%) were unemployed four years later. Chances of gaining a standard job were particularly small for holders of manual jobs and if the worker's educational level is low. Likewise, being unemployed prior to accepting a temporary job lowers the chances of attaining an open-ended job. Temporary employment is hence not

an unambiguous access point opening a steady road leading to the eventual award of a standard contract, but rather serves as a means to endow employers with external flexibility, leaving many employees moving continuously from one fixed term job to another.

Gebel (2010) focuses on UK and Germany, comparing data from job entrants between 1991 and 2007, and comes to mixed conclusions regarding the stepping stone hypothesis. In the UK, 22% of job starters were employed on a fixed term basis, only 18% of which (4% in total percentage points) remaining fixed term within a five years period. In Germany, the corresponding figures are 37% and 41% (15% in total percentage points). The transition into regular jobs thus seems to be more successful in the UK than in Germany. If the risk of becoming unemployed is examined, the picture looks different; in Germany, 87% of the observed persons in standard jobs were still employed after one year, but only 78% of the temporary ones. After five years, both groups had converged to the same employment rate of 83%. In the UK, the numbers are approximately the same as in Germany after one year, yet the process of convergence within a five years range does not occur. The gap between fixed term and open-ended jobs is therefore persistent in the UK, rendering fixed-term work constantly more volatile. Scherer (2004), just as Gebel, observes job entrants in UK, Germany, and Italy from 1983 to 1998, coming to similar conclusions. She identifies a stepping-stone effect in all countries (especially in Italy), but also a higher risk of temporary employees to become unemployed. Particularly in the UK, numerous temporary jobs will often closely follow each other, usually in less prestigious occupations than open-ended jobs.

Pooled data from the whole EU between 1994 and 1998 were analysed by D'Addio and Rosholm (2005), shedding more light on how much time fixed term workers spend on temporary contracts and their respective chances to eventually enter permanent employment. Controlling for personal and job characteristics, the authors estimate the average likelihood of a worker making the transition from a fixed term to an open-end-

ed job over a period of more than three years. Both sexes have equally low chances of being offered a standard job within the first two years of a fixed term job. The third year, however, is the point in time when most successful transitions happen, for men and women alike, possibly because a major fraction of fixed-term contracts expires after two years, forcing employers to make a decision whether or not to keep an employee on a permanent basis. For men, this favourable moment seems to have passed by the beginning of the fourth year, as the chances of a permanent job start to decrease from then on. Women's chances of transition, by contrast, remain on a relatively high level, even after more than three years. Generally, individual transition rates of both sexes rise when there was no previous unemployment and the educational level is high. Central to the research interest of the study at hand are D'Addio and Rosholm's results that show temporary jobs in the majority of cases do not last longer than two years and indeed provide a stepping stone into long-term employment, particularly for women. Men's prospects to enter a permanent job are somewhat dimmer than women's, as they run into danger of getting trapped in fixed-term jobs if they do not abandon them within two or three years.

These findings are in accordance with earlier results from the OECD (2002) which analysed micro data from its member states from 1997 until 1999. In all observed countries, the majority of fixed-term employees had been working shorter than two years in their current job. In Finland and the Netherlands, more than 70% of temporary workers indicated they had been on the job for less than twelve months; in Denmark, France, Ireland, and Spain the respective share was more than 60%. In the OECD on average, merely 25% of all temporary contracts lasted longer than 24 months. Compared to this relative conformity, the odds of proceeding to a standard job vary considerably across countries. Within two years, 71% of fixed-term employees in Austria, 67% in UK, 65% in the Netherlands, and 63% in Denmark made the transition to an open-ended position, but only 42% in Belgium, 38% in France, and 34% in Spain. These figures do not provide a complete

answer, however, whether or not the stepping-stone hypothesis holds because it remains unclear what happens to fixed-term employees once their contract is terminated: do they fall into unemployment or do they easily move on to a new job? In Germany and France, more than 20% of fixed term employees became unemployed within the two years period, in Spain and Italy 10–20%. For other countries the numbers are about 10% or not available. These figures are twice as high as for standard workers, but only half (or even less) as much as for the initially unemployed. Temporary jobs are thus clearly less stable than standard ones, but do raise the chances of the unemployed to get back into any kind of work (also permanent work) if compared to the alternative of staying jobless.

The effects of temporary work appear less favourable in the study of Contini, Pacelli, and Villogio (1999). In Italy and Germany, 50% of fixed-term workers with a contract period of less than 12 months were unemployed again after three years, while only 35% managed to find an open-ended job. In the UK, by contrast, these figures turn out to be reversed, indicating that the stepping-stone effect is much larger there. As expected by theory, a low status of the job, small pay and being part of the service sector impair the probability of transition into standard jobs in all analysed countries.

Turning to single country studies, the state that has attracted the most research interest is Italy, where the evidence on the stepping-stone hypothesis is rather inconclusive. The least favourable assessment comes from Barbieri and Scherer (2009) who, covering a period ranging from 1969 until 2005, focused not only on fixed-term work but on atypical employment in a broader sense, including for instance also self-employment. According to the authors, atypical employment is not preferable to unemployment regarding the odds of finding a standard job. Rather, atypical jobs are likely to entail further atypical jobs. More positive on the effects of fixed-term employment are Barbieri and Sestito (2008), scrutinising temporary workers' chances between 1993 and 2003 to reach a satisfying job position, i.e. a position out of which one does not seek another,

more favourable one. The essential result of the study is that accepting a fixed term job increases the chances by about 30%, as compared to staying unemployed. This is in congruence with Ichino, Mealli and Nannicini (2008) who quantified the probability of gaining a standard job from a temporary contract in the years 2001 and 2002. After one year, the chance to hold an open-ended job is about 31%, twice as much as if the employee had stayed unemployed. Picchio (2008) estimates markedly lower transition rates of about 13.5%–16% from 2000 until 2004. Each of these figures is smaller than the transition rate stated by the OECD in 2002 (41%). Transitions may thus have become more difficult over time. All Italian studies across all time periods agree that temporary jobs are clustering in services and among workers with low educational attainment.

Evidence from the Netherlands is not positive either about the stepping-stone effect. Zijl (2004), based on Dutch data from 1988 until 2000, reports that after two years 38% of all observed fixed term workers had found a permanent job, 21% had become unemployed and 35% were still on a temporary position. Of those initially without a job only 30% managed to enter into open-ended and 6% into temporary employment. While this seems to support the stepping-stone hypothesis at first glance, the benefit of fixed term contracts dissipates once a longer period is looked at. The more years pass, the more do the odds of finding a standard job converge, no matter what the initial contract type had been. The authors consequently conclude that fixed-term work is successful in shortening periods of unemployment rather than in helping people back into standard work. Inherent in temporary jobs is the risk of getting stuck in such work arrangements and to be able to proceed to an open-ended job, if at all, only after a very long time.

These findings are in accordance with Hagen's (2002) who works out that, in Germany, employees with fragmented work biographies face a higher risk of getting trapped in fixed-term jobs. Similarly, Blanchard and Landier (2002) show that French job entrants' average past time between starting a fixed term job and

the transition into a standard job extended from 2.4 to 4.8 years during the 1990s. Since the corresponding time span for those who preferred to stay unemployed, instead of accepting a temporary job, increased from 4 to 6 years, working in a fixed term position may still appear as the more favourable option. The evidence that instability and insecurity in the French labour market have risen in the last decades is nonetheless conspicuous.

Holmlund and Storrie (2002) show in great detail, based on Swedish data from 1987 to 2000, how much the employment of temporary workers varies with the business cycle. When a downturn hits, fixed term workers are the first and most affected, because they are the easiest to lay off, but as soon as a recovery sets in, fixed term jobs are created more rapidly than regular ones since firms are not yet sure about their future expectations and therefore reluctant to hire on an open-end basis. Once the economic environment has consolidated again, the share of temporary employment returns to its initial level. Firms' use of contracts with finite duration thus resembles that of standard ones, only that it is much more susceptible to cyclical fluctuations and hence inherently more fickle.

Compared to the abundance of literature on temporary employment, studies concerned with the employment stability of part-time workers are significantly less common. One exception is Fouarge and Muffels' (2008) examination of employee data of 14 EU countries between 1994 and 2001. One key result is that, after a time span of five years, on average 25% of male part-timers still worked part-time, half of them worked full-time, and 25% had stopped working altogether. Among full-timers, only 14% made the transition to non-employment, whereas 80% remained in full-time work. With respect to female part-time employees, 20% increased their working time to full-time level and 25% dropped out of their jobs; among the female

full-timers only 20% did so. The authors therefore conclude that employment in atypical jobs does significant harm to both male and female workers' chances of being employed (whatever full-time or part-time) five years later.

Buddelmeyer, Mourre, and Ward-Warmedinger (2005) analysed data similar to Fouarge and Muffels', averaged over eleven EU countries between 1994 and 1999, but with a shorter time range of only one year. They emphasise that in the short term the adverse effects of part-time work on employment stability are even more pronounced, especially for women, than estimated by Fouarge and Muffels. The risk to lose one's job is about 5% for a male full-time employee, contrasted with 17% for a part-timer. For females, the corresponding figures are 7.5% compared to 45%.

Hence, the effects of atypical employment on job stability can be summed up as follows: fixed-term jobs rarely last longer than two years, most of them even less than 12 months, albeit these numbers vary depending on the country. The stepping stone hypothesis does hold to some extent, yet a transition into permanent employment is far from certain. All studies concur that a temporary job does improve one's chances of getting into stable standard employment as compared to a situation in which the job seeker would have stayed unemployed, but the risk of falling back into non-employment remains continuously higher. Moreover, there is a clear risk that fixed term workers get stuck in short-term appointments, particularly when they are badly educated and their work histories are marked by recurring periods of unemployment. Fixed-term employment therefore does not offer the same stability as a permanent job and, consequently, involves the risk to cause long-term scarring effects. The evidence on part-time workers' job stability is much more limited, but resembles to a large extent what we have already learned about fixed-term contracts.

5. BASIC CONCEPTS OF SOCIAL INSURANCE AND SOCIAL ASSISTANCE

This chapter gives an overview of the basic theoretical concepts underpinning the existence of three social security schemes—unemployment benefit, sickness benefit, and social assistance. It deals with questions as to the purpose these schemes serve, the way they should be set up, and the various sorts of secondary effects they may entail besides providing social security. First of all, before I start with the basic principles of welfare provision, in the next section I will briefly dwell on the notion of risk, because minimising risk is the very essence of social protection.

5.1 THE CONCEPT OF RISK

Among the broad range of discipline-specific conceptions of risk (e.g. Renn 1992), a general definition of risk is given by Rowe (1975: 1): «Risk is the potential for realization of unwanted, negative consequences of an event or combination of events to individual groups of people or to physical and biological systems.» For a more empirical approach, he subdivides «the potential of realization of unwanted, negative consequences» into three separate domains, all of which in their interaction yield a comprehensive measure of risk. The first domain is the event space domain which includes the probability that a particular event occurs. The second domain is the probability-consequence domain, covering the likelihood that this event has a certain consequence. The third domain—the consequence-value domain—assigns a value to this consequence, reflecting how meaningful the consequence is to the risk taker. The final assessment of risk, according to Rowe, is accomplished by multiplying all three domains.

In the context of this study, the specific events representing a risk in the event space domain are that

employees lose their jobs or fall sick. In general, both events are only partly within employees' control. It may be possible to positively influence one's exposition through high work effort or a healthy lifestyle, but too often employees have no leverage on the essential mechanisms determining lay-offs or the outbreak of an illness (firm bankruptcy or genetic disposition, for instance), ultimately leaving everyone faced with a certain amount of risk. In the probability-consequence domain, being unemployed or sick most likely leads to a substantial loss of income unless there are other sources of revenue (e.g. capital gains) to draw on, which is probably the case only for a small minority of workers. Income loss is a consequence whose value is highly negative for most people as it threatens accustomed living standards and, more broadly, the capacity to participate in society, particularly for those with medium or low earnings whose accumulated savings would not allow them to get by without an additional source of income. For workers in atypical jobs with more unstable work biographies and lower wages, job loss and sickness thus naturally pose a higher risk as they (i) have a higher probability of finding themselves in a risky situation¹ and (ii), due to insufficient prior earnings, have not enough financial reserves to handle a severe loss of income. Standard employees may be less vulnerable, but are confronted with a non-negligible degree of risk, too, since joblessness and incapacity are partly random events that can easily become prolonged.

The main purpose of unemployment benefits, sickness benefits, and social assistance is to help people min-

1 This holds primarily for the situation of job loss which happens much more frequently to atypical employees (see chapter 4). But also sickness affects non-standard workers more often than standard ones (for an overview see Quinlan / Mayhew / Bohle 2001).

imise their personal risk of income loss. In theory, there are several different ways to do so, each influencing a distinct risk domain: for example, in the event space domain laws could be passed preventing employees from being dismissed when they have become redundant or when they are ill. Such measures are implemented in form of employment protection legislation in many countries, yet this approach reaches its limitations no later once a firm goes bankrupt. Instead, unemployment and sickness benefits, as well as minimum incomes, operate in the probability-consequence and consequence-value domain, as they (i) reduce the odds that sickness and joblessness result in income loss and (ii) mitigate the incurred loss. They do not, however, prevent negative events from occurring. The following sections explain according to which rules transfers from the mentioned welfare schemes are disbursed, how this contributes to the containment of risk and what kind of side effects this might have.

5.2 EFFECTS OF UNEMPLOYMENT BENEFITS

A common way to protect people's income in case of job loss is through an insurance scheme replacing parts of the lost wage. Schemes of this type are established in most developed countries with the notable exceptions of Australia and New Zealand. The underlying functional principle of an unemployment insurance is that employees pay premiums into an insurance fund while they are employed, thereby acquiring entitlements to temporary cash transfers they can claim should they be dismissed. If they have made enough contributions to the fund in order to become eligible, they can receive transfers until they have either found a new job or have exhausted the maximum duration. The income replacement provided by the insurance is supposed to soften the impact of a full loss of earnings, but it remains important to note that amount and duration of transfers are subject to the concrete arrangement of the insurance scheme and therefore vary widely across countries (see chapter 6).

One desired effect of protecting job seekers' incomes is the smoothing of individual consumption patterns over the long run, since cash transfers paid out of unemployment insurance funds render individual income less vulnerable to periodic unemployment spells. Unemployment benefits hence not only raise employees' utility by allowing for higher consumption, they also have a stabilising effect on the economy as a whole when, in times of a recession and rising unemployment, they save aggregate private demand from collapsing (Dolls/Fuest/Peichl 2012, Gruber 1997).

Arguments in favour of unemployment benefits can also be made on grounds of efficiency. The rationale is that, according to matching theory, some positions fit job seekers better than others. Given that any worker has a specific endowment of human capital, they will be most productive in occupations closely matching their skill profiles, while productivity levels drop off sharply the more a job's skill requirements deviate from the competencies an employee possesses. It may be a protracted and arduous process, however, to track down among numerous employment opportunities, and get hold of, a position that is a good match. Unemployment benefits give jobless people the possibility of taking time for their search and thus enabling them to find a position which matches their skills in the most productive way, rather than forcing them to accept the first job on offer (Belzil 2001, Caliendo/Tatsiramos/Uhlendorff 2012, Centeno 2004, Marimon/Zilibotti 1999). If there were no cash transfers, job seekers would have to take on any job they could get, irrespective of the matching quality, just in order to generate a new income. The result, consequently, would be a multitude of mismatches, an underutilisation of individual skills, and frequent break-ups of employment relationships because of bad matching quality, and thus potentially damaging an economy's overall efficiency.

Another mechanism by which unemployment benefits can spur labour productivity is that they help to create high-profile jobs based on very specific skill profiles on part of the employees. This argument is strongly related to matching theory and was first elaborated by

Acemoglu and Shimer (1999, 2000). According to the authors, firms are frequently confronted with the decision to offer either sophisticated positions with very specific skill requirements, promising high productivity gains to the company if an adequate applicant for the position can be found, or to offer jobs with rather broad training requirements, being easier to fill, but with a smaller potential for productivity growth. Job seekers, on the other side, have to decide whether to apply on jobs necessitating specific or broad skills. Due to higher productivity, activities involving the use of specific competencies are more generously compensated, yet carry an increased risk that, after a short probation period, a newly hired employee may turn out to be ill-suited for the position and, as a consequence, get sacked. If job seekers are risk averse to a certain degree, they will therefore prefer positions with broader skill requirements and a lower risk of split-up. This can pull down the whole economy towards a low-efficiency equilibrium in which neither employers nor employees fully exploit their productivity potentials. By introducing an unemployment benefit, the risk of mismatch becomes less threatening to job seekers, therefore encouraging more people to apply for a job with a specific skill profile. As a result, the economy's overall productivity is edging more strongly towards a high-efficiency equilibrium.

Iversen (2005: 177–255) follows this line of reasoning by providing another rationale for employees to engage, once unemployment benefits are in place, in jobs with specific skills. He argues that jobs with specific training requirements are risky not only because of their inherent hazard of mismatch; even if an employee has already proven herself to be well fitted for the job, the specialisation on very specific tasks may hurt her later on, should she lose her job for any other reason (e.g. bankruptcy of the firm). In this case, the employee will probably face serious difficulties finding a new job, since her specific skill endowments are in demand from only a very small number of firms. A risk-averse job seeker will thus shun any job with skill requirements too specific, forfeiting higher remuneration, in order to not damage

her future employment prospects. Unemployment benefits can help to lessen the risk incurred by the acquisition of specific skills, as they give employees, when they lose their old jobs, more time to look for suitable new jobs that make use of the same specific skills. Hence, specific skills can unfold their individual value as labour market assets only once unemployment cash transfers are provided for, boosting the proliferation of specific training among the workforce. Ultimately, in congruence with Acemoglu and Shimer's arguments, labour productivity and total efficiency rise.

The most scientifically discussed issue by far associated with unemployment benefits is, however, not related to productivity considerations, but to whether and how these are likely to affect job seekers' search efforts, their readiness to accept job offers, and the resulting duration of unemployment spells. The most influential theories on this topic have been introduced by Mortensen (1977) and van den Berg (1990). They establish a simple model describing the behaviour of a single person looking for a job while facing several incentives simultaneously. The basic set-up assumes that the job seeker strives to maximise her income and receives various job offers with random levels of remuneration at random points in time. She will therefore only accept an offer if it pays more than what she would get otherwise. Decisive for the duration of unemployment is the so-called 'reservation wage', i.e. the lowest wage for which a jobless person would just be willing to accept an offer. The higher the reservation wage, the longer is statistically the time span until the unemployed person eventually receives a job offer whose prospective compensation exceeds the reservation wage, and which she would consequently take on.

Unemployment benefits can impact the reservation wage in various ways depending on the design of the benefit scheme. For analytical clarity two features of any unemployment benefit can be separated: amount and duration of payments. If the benefit amount is high, it raises the reservation wage for those receiving the benefit, mostly during the initial period of unemployment, and makes exits out of unemployment less

likely. Once however the benefit approaches its temporal limit, the reservation wage will decrease sharply, resulting in a higher willingness to agree to incoming offers and consequently a higher exit rate. According to job-search-theory, generous benefit amounts thus tend to prolong periods of unemployment since they raise reservation wages, especially at the onset of joblessness, but hardly beyond the moment the benefit elapses. The predominant impact on the length of job search hence comes from the duration of a benefit rather than its amount. Benefit duration determines a precise point in time the benefit is going to end, which is also the same moment the reservation wage will drop the most. A longer benefit duration, in turn, keeps up the reservation wage for a longer period by deferring the point in time the benefit is going to be exhausted. As a brief upshot, job-search-theory thus states that, if the average period of unemployment is to be shortened, the duration of the unemployment benefit should be curtailed rather than its amount.

This line of theoretical reasoning only applies to jobless persons eligible for unemployment benefits; for those who are ineligible, job-search-theory predicts a contrary behaviour. These persons perceive unemployment benefits as an additional reward for future work, i.e. as a top-up to regular remuneration, which increases the incentive to accept job offers whose prospective pay would be less than the reservation wage otherwise. Higher unemployment benefits, both in terms of amount and duration, will hence lead to shorter job search periods for unemployed persons who are not entitled to benefits.

Whereas job-search-theory has been subject to serious criticism, e.g. for ignoring the role of personal savings, its predictions—in particular that benefit duration has a stronger protracting impact on job search than benefit amounts—have found large empirical support. What remains unclear is whether unemployment benefits also have an effect on aggregate jobless figures or whether their impact is limited to the micro level (see for reviews Holmlund 1998, Tatsiramos / van Ours 2012).

5.3 INSTITUTIONAL FOUNDATIONS OF UNEMPLOYMENT BENEFITS

It is striking that in international comparisons all unemployment insurance schemes share the institutional feature of being publicly provided rather than privately, and that most of the schemes (with exception of Denmark, Finland, Sweden, and Norway) are mandatory for employees. Furthermore, in almost every country the cost of unemployment insurance is split between employees, employers, and the state, although the respective shares of the burden born by each side vary considerably. In most schemes, employers and employees shoulder the brunt of the costs,² with the state's role being limited to occasional financial injections if a deficit needs to be balanced. Once again, the Nordic countries are an exception to this rule, demanding no contributions from employers, but substituting their share with extra tax money (Schmid 2010: 261–272).

It is no mere coincidence that all unemployment insurance schemes look fairly similar in their institutional set-up. There are indeed good reasons to provide unemployment benefits through public, instead of private, insurance and to make it mandatory. Given the risk-aversion of employees, a market for private, voluntary unemployment insurance could surely be established, yet there are serious caveats to this solution, rendering a public, compulsory insurance the more practical and effective approach (Barr 1992, Feilcke 2012).

The first and foremost problem any unemployment insurance has to face is moral hazard. That is, the insurer needs to make sure that no insured employee takes undue advantage of the benefits, e.g. by giving up a job without good reason or by not actively looking for work, and chooses to continuously live on cash transfers. To rule out such abuse, several measures can be taken, the simplest of which is to make payments dependent

² The respective shares for each side do vary, though. In France and Spain, for example, firms have to take a higher share of the cost than their employees, while in other countries (e.g. Germany) the cost is born by both sides in equal parts.

on a certain period in paid employment immediately preceding the claim, in order to make sure that only people with sufficient attachment to the labour market gain access to benefits. Equally simple is to grant only a fraction of the former wage as benefit, rather than the full amount, or to hand out transfers only for a limited period of time, giving better incentives to stay employed and to seek work. More laborious, yet essential, is proper monitoring of the recipients' behaviour. This, however, needs to take place not only once (like with a doctor diagnosing a certain illness, for instance), but on a continuous basis, requiring huge efforts from the insurers. Nonetheless, in many cases it will be virtually impossible to tell—even by the best monitoring means—whether a recipient became unemployed by circumstances beyond her control or, in fact, by her own fault. Verifying whether a job seeker's search effort meets the standards stipulated in the insurer's terms is equally hard to accomplish. Therefore, all unemployment insurance has to cope with considerable moral hazard which can be contained only to a limited degree and only at big costs.

A second problem is that unemployment risks are not independent and equally distributed over the workforce and all points in time. In the midst of a recession more people become unemployed than in economic boom times. To complicate matters for the insurers, the extent and occurrence of such downturns is hardly predictable. Likewise, some groups of employees, e.g. non-standard ones, are constantly faced with a higher probability of job loss than others, making them less lucrative clients from the insurers' perspective.

Under these conditions private insurers have only limited options at hand to provide unemployment insurance in a profitable way: they can raise contribution rates in order to make up for costs arising from moral hazard, the extensive monitoring apparatus, and the accumulation of financial reserves they need to brace themselves against the next economic downturn whose scale is unforeseeable. Higher rates, in turn, would drive the best risks, namely the employees with the highest income and lowest probability of job loss, out of the insurance because its costs seem to exceed the risk they

face. For the persons who remain insured, most likely belonging to the group with higher unemployment risks, this means that rates soar, up to the point where they become unaffordable. In this scenario, the unemployment insurance is bound to collapse, leaving employees without adequate protection. Another possible scenario is that insurance companies diversify their tariff structure, offering attractive conditions to employees with characteristics that supposedly make them good risks (e.g. tertiary education, no previous unemployment spells), while granting less favourable terms to employees with bad risks. As a result, those with good risks have an attractive opportunity to insure themselves against unemployment, whereas those with bad risks are likely to be left without insurance since their rates would be too high. It is evident, therefore, that, no matter which of both ways insurance companies choose, an unemployment protection scheme organised privately in a non-compulsory manner does not have the capacity to serve its original purpose as it fails to cover particularly those who are most vulnerable.

A mandatory public insurance for all employees can resolve some of the problems afflicting private provision. First, a public insurance can institute a single administration whose remit it is to review the rightfulness of new claims and to monitor recipients' job search efforts. Such a single, publicly run institution helps to reduce transaction costs by avoiding parallel structures that would emerge if several competing insurance firms each set up their own administrations. Having only one public unemployment insurance scheme instead of many thus brings down monitoring costs and makes tariffs more affordable. Furthermore, eliminating competition among insurance providers will stop firms from poaching good risks by offering targeted lower tariffs; a practice that, if unchecked, would accelerate negative selection of risks and eventually cause the schemes to break down. Second, a mandatory insurance prohibits employees with better risks from abandoning unemployment insurance altogether and thus keeps rates for all employees on a sustainable level. It is important to emphasise that for this reason a compulsory insurance

always entails some financial redistribution from good to bad risks, because employees holding a more favourable labour market position necessarily pay more into the scheme than they will probably ever get out. The extent of redistribution differs in international comparison, yet in order to realise an unemployment protection insurance that serves the interests of all employees, it is a generally well-proven path to make insurance mandatory and to allow for a pooling of risks. A deviating path has been chosen by the Nordic countries where insurance is voluntary, but its funds are heavily subsidised out of tax money to keep tariffs viable. Many of the considerations explained above also apply to sickness benefits to which I turn in the next section.

5.4 EFFECTS OF SICKNESS BENEFITS

In this study, the notion of sickness benefit is defined to cover two things. First, it includes obligatory continuation of wage payments by the employer and, second, allowances of a public insurance scheme in case an employee falls sick. Whatever the various specific forms of sickness benefits, their purpose is essentially the same, namely to protect employees from temporary income loss due to illness until they are fit for work again. Other cash transfers, meant to replace the income of employees whose health is permanently damaged so that return into work is impossible or highly unlikely, are not subsumed under the concept of sickness benefit in this study. As with unemployment benefits, the right to sick pay must be acquired by previous employment and, where applicable, the corresponding contributions to an insurance fund.

The main purpose any sickness benefit serves is to secure an income when an employee is incapacitated due to illness. This has many positive effects both on employers and employees (Heymann et al. 2009): if days of absence are compensated, employees may feel less compelled to show up at work when they actually feel unable to. Instead, they are given more time to recuperate and will return to work only once their health

is fully restored. This way, the benefit helps to avoid the adverse effects related to working when sick. One of these is that sick workers frequently pass on infectious diseases to colleagues and therefore drive up firms' overall sickness levels. Another one is that sick workers' productivity is likely to be seriously diminished, even down to the point that it becomes negative, since diseased employees are more prone to make serious mistakes or undermine work morale (Chatterji 2002). Moreover, without enough time to recover illnesses can get worse and become persistent, so that employees' productivity is impaired longer than necessary. Finally, sickness benefits, especially in form of compulsory wage continuation, can lower a firm's turnover of staff by forcing the company to retain its employees, even when they are absent for health-related reasons. This is more expensive in the short-run, but summed up over a longer period, it can save a firm recruitment and training costs that would otherwise have been caused by a higher fluctuation of personnel. This argument is also closely related to employees' acquisition of specific skills; as has been discussed in the section on unemployment benefits, jobs requiring specific skills are highly productive, yet carry the risk that employees develop a skill profile so unique that they might struggle to find an adequate new job should they lose their former one. In this context, sickness benefits function as a guarantee that employees' income is protected and that they will not be dismissed unless the sickness lasts longer than a certain maximum period. Sickness benefits thus do not only promote the interests of workers to be able to recuperate, but they are also beneficial to labour productivity, mostly by creating a standard of social protection which is a prerequisite for investments in specific skills.

However, these positive effects may be offset by another, detrimental influence of sickness benefits on work effort. Allen (1981) and Barmby, Sessions, and Treble (1994) were the first to set up a simple model in which employees have to determine their actual working time. If the number of hours stipulated in the employment contract is above the number desired by the employee, she has an incentive to use sick days as a means to bring

actual hours worked closer to the number of hours preferred. In order to do so, an employee will simply report sick when in fact she is able to work. The introduction of sick pay further increases this incentive as the loss of income resulting from absence becomes smaller. Generous sickness benefits therefore hold the potential to be misused for shirking. Theoretically, these negative incentives can be contained by setting a temporal limit to benefit receipt, because employees in this case would probably want to save up their sick days for the moment they really fall ill, rather than recklessly spend them on shirking. In their review of empirical studies, Brown and Sessions (1996) nevertheless collect evidence that sick pay increases absenteeism, particularly when regular working hours are long and thus far above what most employees desire. To sum up, sickness benefits can have both a productivity enhancing as well as a dampening effect, and it is impossible to decide a priori, solely based on theory, which one is predominant.

5.5 INSTITUTIONAL FOUNDATIONS OF SICKNESS BENEFITS

All countries included in this study offer sickness benefits either exclusively by employer provided wage continuation (Australia, New Zealand, Netherlands, Switzerland), or exclusively by social insurance (Canada, France, Ireland, Italy, Japan), or by a combination of both, with wage continuation usually covering the initial phase of an illness and insurance benefits ensuing if the incapacity lasts longer. In the vast majority of schemes, the insurance part of sick pay is funded out of general health insurance. A small number of countries—particularly where there is a tax funded national health system instead of an insurance—has set up specific schemes only for sick pay (e.g. Italy) or draws on financial means of other welfare programmes (e.g. unemployment insurance in Canada). Just like the costs of unemployment benefits, the expenses for insurance-based sick pay are always divided between employers, employees, and the state, albeit the state's role is often reduced to compen-

sate for potentially occurring deficits. Irrespective of the specific design and funding of each insurance system, all share the features of compulsory membership and a public form of organisation (Heymann 2009, Schmid 2010: 289–298).

One striking difference compared to unemployment protection schemes is that many countries oblige employers to pay wages (not necessarily at the same amount, however) even when an employee is incapacitated and therefore absent. Although the financial burden is entirely born by the firm, wage continuation is similar to an insurance-based benefit in that it is usually granted only after a predefined period of service for the employer. That is, the employee must earn herself the right to wage continuation through previous efforts. The objective to be achieved by introducing wage continuation, instead of a purely insurance-based benefit, is to avert employers' moral hazard. If the costs of a worker's illness were entirely borne by an insurance, employers would have low incentives to provide for the safety of their workplaces. By making employers share in the costs of absence through wage continuation, firms have a vested interest to ensure that employees work in an environment non-harmful to their health (see, for instance, recent sick pay reforms in the Netherlands (van Oorschot/Boos 2000) and Sweden (Edebalk 2009) which were strongly motivated by this rationale).

The insurance based part of sick pay is structured in a way that shows remarkable similarities to unemployment insurance in that both are public and mandatory; for widely different reasons, however. As described above, some employees might want to misuse sick pay as a pretext for shirking, but, unlike job search efforts in case of unemployment, it is simple to check whether an employee is really sick or just pretending, for example by demanding a doctor's certificate for incapacity. Remaining incentives for shirking can be further minimised by the introduction of waiting days, qualification periods and replacement rates below the regular wage. Moral hazard then plays a more limited role in the provision of sickness benefits (Barr 1992).

Thus, there is no compelling reason to opt for a public, mandatory insurance only on grounds of efficiency or moral hazard.

The actual problem precluding a decentralised, private solution is negative selection. As with the risk of job loss, the risks of falling ill are not evenly distributed among employees. Those in physically or mentally stressful jobs, often badly remunerated, are likely to rely on sick pay much more frequently than employees on more favourable positions with higher pay (Barmby/Ercolani/Treble 2002). Hence, the same mechanisms start to operate as in case of unemployment insurance: employees with better risks decide to change into contracts offering them better conditions or drop out altogether, whereas people with higher risks become unable to afford their insurance. As a consequence, the latter group will end up without any insurance coverage, although it would benefit most. By making the insurance obligatory and ruling out competition, unequal risks can be pooled, allowing for the implementation of one single tariff affordable for all. Once again, a uniform insurance rate entails considerable redistribution between risk types without which the complete coverage of the workforce would be impossible to accomplish. The striking commonalities in the institutional design between unemployment and sickness benefits is therefore grounded on a shared problem of negative selection, which in both cases is resolved the same way.

5.6 BASIC CONCEPT OF MINIMUM INCOME SUPPORT

Unemployment and sickness benefits are supposed to be only a temporary aid with a limited duration. Once the maximum length has been reached, the benefit is exhausted and no further payments can be received. If at this point a former recipient is still jobless or unfit for work, she will be left without financial support unless another type of benefit steps in to prevent a total loss of income. This benefit is usually referred to as social assistance or, more generally, minimum income support.

Its founding principle and governing rules differ fundamentally from insurance based benefits.

Immervoll (2010) identifies two defining criteria both of which must be satisfied by any given cash transfer scheme in order to be classified as minimum income. Most importantly, it has to be needs-based, i.e. eligible are only people lacking access to any other sources of income, whereas insurance-based benefits are available to everyone who has earned an entitlement through previous contributions, no matter whether or not any other income exists. Neither does the definition encompass any benefit that is targeted to specific groups without being needs-based (such as child benefits, orphans' or widows' pensions). The second criterion is that minimum income must be a replacement or supplement to income from work. Allowances to people beyond working age (e.g. minimum retirement pensions) are thus excluded, as is support to people unable to work (e.g. disability pensions). It is important to note in this context that many people, although de facto they are unfit to work, are not officially recognised as disabled since their health status is in a midway condition neither bad enough to meet the disability standards nor good enough to fully participate in employment. Such people, despite their delicate health, have nonetheless to rely on minimum income support. The second defining criterion is thus necessarily blurry to a certain degree.

Minimum incomes can be handed out in various forms and can both comprise benefits in kind and in cash. Often, there is a magnitude of various assistance schemes coexisting, all of which covering distinct areas of need such as housing benefits or subsidies to heating costs. Unlike insurance-based benefits, basic incomes are always funded out of global tax revenue and can typically be received without temporal limit. All countries in this study operate some kind of general social assistance programme, with Italy being the only exception.

The right to social assistance emerges from the simple fact that one is part of a society (Marshall/Botomore 1992: 8). Requested in order to be allowed to obtain social assistance is merely «...to live the life of a good citizen, giving such service as one can to promote

the welfare of the community» (Marshall/Bottomore 1992: 26). The basic principle guiding this statement is that recipients are not to take undue advantage of their fellow citizens, but have to abide to the general rules and requirements of the society they live in. What these rules and requirements look like in practice and how draconically they are enforced, varies across countries, yet there is large agreement in that being able to fend for oneself without having to rely on public support is a core value anyone capable of work should try to comply with. Minimum income support, as it exists today, is hence mostly tied to the obligation to make credible attempts to abandon the current status by actively seeking employment (Immervoll 2010: 35–38).³

This obligation necessarily induces moral hazard. As with unemployment and sickness benefits, the more leisure is valued and the less labour, the higher are recipients' incentives to put insufficient effort into job search, even more so as social assistance is typically unlimited in time (Pellizzari 2006, Coe/Snowder 1997). To reduce moral hazard, minimum incomes normally come with two strings attached whose objective it is to increase work incentives without compromising the main purpose of income maintenance (Immervoll 2010: 29–31): first, all basic incomes are dependent on a means test, i.e. they can only be received if there are no other sources of income including savings. Second, in most countries social assistance is significantly lower than insurance-based benefits to offset the detrimental

impact of infinite payments. Additionally, more or less the same behavioural obligations apply as to unemployment benefits. For instance, numerous countries have introduced work duties, either on public or on private positions, to strengthen job seekers' attachment to the labour market and as a test of their willingness to work. Social assistance recipients are also often required to report regularly on their job search and the steps they have undertaken to find employment. If they refuse to look for jobs or turn down suitable offers, sanctions can be imposed, mostly by suspending or curtailing payments. The state can also try to enhance recipients' appeal to employers by offering mandatory training courses.

In combination, these measures render minimum income support—for people able to work—less generous and more restrictive than insurance-based benefits. This is deemed necessary in order to legitimise it towards tax payers, who are carefully watching that their money is handed out only to people considered deserving, and to contain outlays of the public purse. Ideally, social assistance should not serve as a mere safety net for those uncovered by unemployment and sickness benefits, but as a trampoline catapulting people back into employment. With regard to atypical employees, minimum incomes play a pivotal role, since a significant share of non-standard workers will regularly fail to qualify for insurance-based benefits and has to rely on social assistance instead. This means part-time and fixed term employees find themselves in a less favourable position compared to their standard peers, not only in terms of remuneration and tenure, but also with respect to benefit entitlements, as they can expect to receive smaller amounts and to be confronted with harsher conditions.

³ This is in stark contrast to Van Parij's (1997) proposal of an unconditional basic income which can be received even without any willingness to work. He argues that a just society must remove any obligations to work in order to achieve «real freedom» for all individuals to do whatever one wants to do.

6. SOCIAL PROTECTION ARRANGEMENTS IN INTERNATIONAL COMPARISON

Previous chapters described in detail how atypical employees differ from standard ones in that on average they earn less, work fewer hours, and stay on their jobs for shorter periods of time. Social security systems, which, however, were established in times when atypical work was clearly the exception, are designed to primarily accommodate the needs of standard workers. Therefore, benefit systems are most likely ill-suited to provide social protection to atypical workers on the same scale. To get a more accurate impression of the treatment of atypical employees by unemployment and sickness benefit schemes, I develop three indices to analyse in direct comparison each of the distinct aspects of benefit provision central to atypical and standard employees' social protection. I further add a measure of the generosity of means-tested minimum incomes as this kind of basic financial support often is the only benefit atypical employees have access to, hence constituting a crucial part of their social safety net. Countries can combine each of the different aspects of social protection gauged by the four indices in many different ways, forming what in this thesis is called social protection arrangements. To discover which kinds of social protection arrangements empirically exist, how frequent they are, and how they have evolved over time, I finally perform a cluster and a regression analysis.

6.1 BASIC CONCEPTION OF THE INDICES

If the generosity of social protection is to be measured for different types of employees, it first needs to be clarified which specific features of social safety schemes affect and potentially restrict benefits and eligibility. Atkinson and Micklewright (1991) provide a list of such institutional features for unemployment benefits: (a)

benefits are not paid to those who quit a job voluntarily, (b) during the initial phase of unemployment no benefit is paid (waiting days), (c) actively seeking for a job is required, (d) suitable job offers may not be refused, (e) eligibility is tied to a certain amount or duration of past contributions, (f) benefit amount is related to past earnings, (g) benefits are paid only for a limited duration. Since it is welfare dualism which is at the heart of this study, I focus only on the latter three features—which are also applicable to sickness benefits—because these will differ in their impacts on atypical and standard employees, whereas the former items affect all employees in the same way (and thus cannot cause dualism). Especially condition (e) is important for atypical employees: if access to benefits is restricted to those who earn a minimum amount, work a minimum number of hours or exceed a minimum job tenure, it will lead to the exclusion of numerous non-standard workers due to their lower working time and shorter contract terms. Conditions (f) and (g), too, are particularly disadvantageous for atypical workers because they result in lower benefit amounts and shorter durations if these depend on previous contribution records as usually is the case. Yet there is one fundamental difference between condition (e) and conditions (f) and (g). Whereas (e) refers to conditions determining if at all a claimant's past contributions suffice to become eligible, (f) and (g) define how much is going to be disbursed once all qualification requirements of condition (e) have been met. That is, conditions (f) and (g) do not take effect until condition (e) is fulfilled. The rules deciding on eligibility and the rules determining amount and duration of benefits are profoundly different aspects of how social security schemes operate which, in my view, should not be mixed up or blended into one single measure as is done, for instance, by Esping-Andersen's decommodification

index. More precisely, the reason why I consider such a procedure flawed is that including both aspects in one index would imply that a high score in one dimension could possibly compensate for a low score in the other. That is obviously false: high and long potential benefits have no use if a claimant gains no access to them. Nor is universal access to benefits valuable if payouts are negligible. Therefore, when computing a composite generosity index, accessibility should be kept separate from amount and duration of benefits to avoid that both wrongly offset each other. Rather, the various single features restricting accessibility should form one single index of their own which is described in the next paragraphs.

The attention researchers pay to accessibility, i.e. condition (e), has so far been modest. The decommodification index includes as explicit accessibility indicator only the minimum number of work weeks required for eligibility, while there are three indicators measuring the generosity of payments. The index is also weighted by the benefit's coverage rate which may act as a proxy for the strictness of access, but it does not tell much about the design of access conditions. Since the original focus of the decommodification index, and the major fraction of welfare state research in general, has been on standard workers with long-lasting job tenures and full-time work who normally have no difficulties accessing unemployment or sickness benefits,¹ there has been no marked interest in eligibility rules. Once, however, the situation of atypical workers is made the focal point of a study, accessibility must be given special importance. The study at hand is thus taking into particular account the design and restrictiveness of accessibility rules by proposing an index exclusively measuring the strictness of access requirements. This index is called accessibility index to differentiate it from the broader notion of eligibility which also comprises additional requirements

1 There are only two cases in which standard workers are likely to be excluded from benefits. The first is when they lose their job or fall sick within their probation period. The second is when they fail to meet conditions (a) to (d) as stated by Atkinson and Micklewright (1991). These conditions, however, are not a subject of this study.

unrelated to preceding work periods (such as job search efforts, availability etc.). Accessibility, more narrowly, refers only to employment criteria that need to be met prior to benefit receipt which pose the main obstacle to atypical workers' chances to receive welfare handouts.

One essential part of the index is the minimum number of hours (or minimum earnings in some countries) that must be reached within a given time span if an atypical worker is to receive a benefit. A high hours threshold is thus most detrimental to part-time workers whose working time is naturally more likely to be less than the required length. Another part of the index is the minimum number of weeks in employment prior to benefit receipt a claimant has to certify. This is most important to employees on fixed term contracts whose tenure might fall short of the required amount of weeks. Yet in most countries eligibility rules do not demand minimum weeks to be fulfilled by one continuous, uninterrupted stint, but set a greater time frame within which the required weeks in employment can be accumulated on various jobs. This time frame is the third part of the accessibility index.

Only few studies examine the lock-out effect of contribution requirements, the most recent and extensive of which is Leschke (2008). Based on micro data from the mid-1990s, she compares entitlements to unemployment benefits and minimum income support of full-time, part-time, and fixed term workers in Denmark, Germany, Spain, and the United Kingdom. Although she does not distinguish between means-tested and non-means-tested benefits, her results nonetheless give a valuable hint as to the adverse effects of strict qualification requirements on the odds of atypical employees to become eligible. Using descriptive statistics, Leschke shows that the coverage rate of atypical workers is at least 10 percentage points below that of standard workers in all considered countries (the only exception being temporary workers in the UK).² A multivariate regression analysis further corroborates this result. She

2 If all unemployed are considered irrespective of their official registration status.

finds that shorter working hours, shorter tenures, and a lower income significantly diminish the chance to qualify for benefits.³ Even if personal and job characteristics (such as age, qualification, occupation, and wage) are controlled for, a direct, negative effect of part-time work on accessibility can be identified in Denmark, the UK, and Germany. For fixed term work a similar negative impact is detected only in Spain. Once temporary employment is interacted with part-time employment however, a negative effect emerges also in Germany and the UK. The hypothesis that atypical employees are less likely to qualify for benefits is thus largely confirmed by Leschke's study. Some older, less extensive studies report similar results (Cebulla 2002, Ghysels/Thirion/Cantillon 1999, Immervoll/Marianna/Mira D'Ercole 2004).

Besides accessibility, it is amount and duration of payouts that define a social protection arrangement. Both dimensions, duration and amount, can be reasonably joined into one single index due to their compensatory nature; a high benefit amount would allow one to build up financial reserves which can be consumed should the benefit term end before a recipient goes back to work. The same logic also holds when reversed: if a benefit is too low to establish substantial savings, it can be made up for by a longer duration. Based on these two, compensatory dimensions, I therefore propose two more indices: the benefit index for atypical employees and the benefit index for standard employees. Both indices consist of measures of benefit amount and duration, but each adapted to the respective situation of either atypical or standard workers. Establishing distinct indices for each type of employee is necessary since the question whether or not there are differences in welfare entitlements between both groups is at the heart of this thesis.

As to the determination of benefit amounts paid out to the recipients, most countries fix them as a percentage of the previous wage, but not without attaching some additional strings to this rule, resulting in a

more favourable treatment of either group. For example, some countries apply varying percentage rates depending on income. Also widespread is to set minimum or maximum amounts to guarantee a basic rate to low pay earners while capping benefits for the more well-off. Pure flat rate benefits tend to be more generous for atypical employees in terms of percentage replacement rates. Likewise, the rules on benefit duration may in practice lead to very different entitlement periods for atypical and standard workers. Since benefit duration is frequently defined as a function of the previous length of employment, non-standard workers are very likely to receive payments only for a shorter time span than standard ones. As with benefit amounts, however, the introduction of minimum, maximum, or flat-rate terms is able to amplify or extenuate this disparity. Other factors determining benefit amounts and durations unrelated to employment status (such as age or number of household members) are disregarded in this study.

Leschke (2008), who used ECHP data from 1993 until 2000, does not cover the duration of benefits, but examines empirically the amount disbursed to job seekers broken down by their former employment status. Unsurprisingly, former part-time employees are paid on average roughly 50 to 100 Euros (in purchasing power parities) less than their full-time peers, yet converted to net replacement rates, part-time employees' mean benefits are even somewhat higher than standard employees'. Leschke thus concludes that redistribution towards part-time workers takes place in all considered countries. For temporary workers, she is not able to detect any notable difference in benefits compared to standard workers in any country other than Spain. In the ensuing multivariate analysis, controlling for gender, age, household situation, and job characteristics, she finds significant negative effects for part-time workers in Germany and fixed term workers in Spain. The assumption that, as a general rule, atypical employees do not receive the same benefits as standard employees is hence confirmed only on an absolute basis. Furthermore, an additional penalty on atypical workers' benefits beyond their personal and job characteristics seems not pervasive.

³ The only exception is Denmark where former income is found to have no impact on benefit receipt.

It must be kept in mind, however, that Leschke does not take into account benefit duration and lumps together unemployment benefits with minimum income support. If dualism will still remain absent even when the analysis distinguishes between first and second tier benefits and the duration is also considered, is open to question. The next section gives more technical definitions of unemployment and sickness benefits, then proposes an operationalisation of each benefit system by identifying measurable indicators and a way to merge them into composite indices.

6.2 CONSTRUCTION OF THE INDICES

6.2.1. DEFINITIONS

The accessibility index, the benefit index for atypical employees and the benefit index for standard employees are to be designed to be applicable for both unemployment and sickness benefits. In this context, unemployment benefit is defined to comprise all public, non-means-tested payments effected to compensate for a loss of income due to joblessness and all public, means-tested payments for the same purpose, access to which is tied to the fulfilment of qualifying conditions prior to claiming the benefit. It might not be intuitively clear why some means-tested benefits, such as the former German *Arbeitslosenhilfe*, a tax-funded financial aid targeted mostly to long-term jobless people, are subsumed under the notion of unemployment benefits given that means-testing is widely considered a classic feature of second-tier minimum income schemes. I argue, however, that benefits combining means-testing with accessibility requirements resemble insurance-based programmes more closely than social assistance schemes as they are typically and significantly more generous than the minimum income, not open to anyone in need but only to those with an employment record, and strongly demand recipients to seek work (minimum income

schemes need not do so). Therefore, I decided to classify this kind of financial support as unemployment benefit as well.

Sickness benefit is defined as any non-means-tested, statutory payment by the public or the employer effected to compensate for a temporary loss of income due to sickness. Voluntary employer payments or payments based on collective agreements are excluded. Means-tested payments tied to qualification requirements, as encompassed by the definition of unemployment benefits, do not exist in the realm of sick pay. One important difference between unemployment and sickness benefits is that, in case of an illness, it is frequently the employer rather than the public who is initially called on to provide the benefit. I consider both kinds of sick pay—regardless of whatever party is obliged to bear the costs—as equal components of sickness benefits since neither is established in competition to the other but to form one coherent system. For instance, a common pattern shown by numerous countries in the data set (e.g. Austria, Denmark, Germany) is to stipulate wage continuation by the employer in the initial phase of an illness, followed by another phase of contribution-based or tax-based benefits if the illness is persisting. Moreover, on closer inspection both sources of funding turn out to be more interwoven than it may seem at first glance. In the Netherlands, for example, the state takes on the responsibility to continue wage payments if the employer is unable to. Therefore, both statutory employer and public benefits need to be included in the calculation of the sickness benefit. Excluded remain all kinds of open-ended invalidity pensions not based on the premise the recipient is to return to work within the foreseeable future.

It is also important to briefly point out the difference between unemployment and sickness benefits as compared to minimum income schemes. In contrast to the former, the latter serves as a last resort to those who have no other sources of income left. It provides means-tested financial aid granted irrespective of the causes of a claimant's distress and without demanding

an employment record.⁴ Unless they have sufficient savings or other sources of revenue, recipients of unemployment and sickness benefits who have exhausted their entitlements and have not yet found a new job or still feel unfit for work (while not being incapacitated enough to qualify for invalidity pension) consequently have no other choice than to claim minimum income support. Also those who, in the first place, have never qualified for either first-tier benefit due to patchy work histories must rely on basic incomes because under these circumstances no other support is available. In this study, minimum income schemes are thus interpreted as either sequel or substitute to unemployment and sickness benefits.⁵

6.2.2. OPERATIONALISATION OF THE INDICATORS

In this section, I present how the basic concepts introduced above are operationalised by means of quantitative indicators. All indicators are chosen to be readily applicable to both unemployment and sickness benefits. I begin with the accessibility index which consists of three different indicators.

Minimum hours: in many countries, eligibility to benefits is limited to employees whose volume of work exceeds a predefined amount. Most often, this amount is measured in working hours that must be fulfilled on a regular basis within a given time span. As an alternative to an hours threshold, some countries (e.g. Austria and Germany) demand a minimum amount of regular earnings necessary for eligibility. In order to transform

the height of this threshold into a measurable value, I assume a part-time employee with an open-ended contract and compute the minimum number of weekly working hours required to qualify for the most marginal benefit in either social security scheme. If the threshold is stated in terms of remuneration, I assume a part-time employee's hourly rate of two thirds of the hourly mean wage in the total economy; given this wage, I calculate how many hours of work per week would be needed to access the benefit. The lowest possible value of this indicator is naturally zero, implying that qualification is possible regardless of the volume of work, which is hence the most favourable rule for the atypically employed. The higher the value, the less favourable is the rule for part-timers vice versa.

Example: in Austria, the minimum earnings threshold for the unemployment benefit was 349 € per month in 2008, 2/3 of average hourly earnings were 15.99 €. The required number of hours worked per month given this wage then was 21.83 (349/15.99). This figure is divided by the average number of working days per month (21.6) and multiplied by the number of weekly working days (5), yielding a result of 5.05 for the indicator.

Minimum weeks: another common requirement to qualify for benefits is that any claimant must have accomplished a certain minimum tenure before she becomes entitled. The corresponding indicator is defined as the minimum number of weeks on one or several jobs an employee with 20 hours of weekly working time must have accumulated before she is entitled to receive the most marginal benefit of either scheme. The amount of 20 hours of weekly working time, although ultimately an arbitrary figure, has been chosen because of two practical advantages. First, it is low enough to be unambiguously considered part-time and, second, it is yet high enough to meet qualification criteria of both schemes in all included countries. Again, zero is the indicator value most favourable for the atypically employed, allowing an employee to become eligible by the moment the job starts, whereas increasing values in-

⁴ A detailed definition of minimum income following Nelson (2007) is given in section 6.5.

⁵ It is important to add that minimum income schemes also address people who are permanently out of the workforce and for whom minimum income is the only kind of support they are entitled to. In this case, of course, it would not be appropriate to describe the minimum income as sequel or substitute. This description is valid only for members of the workforce, i.e. employed or looking for work, who are at the focus of this study.

dicating a longer required tenure, and hence stricter qualification criteria.

Example: In 2008, unemployment benefits in Switzerland were conditional on 12 months of previous contributions from paid work. The corresponding value of the indicator then simply is the number of months converted into weeks (52).

Time frame: this indicator was originally proposed by Palme et al. (2009) who applied it to standard employees. It refers to the fact that in most countries the required minimum tenure (as measured by the previous indicator) need not be reached on one single position, but merely within a greater time period. The required tenure can thus be distributed on various jobs, even when these have interruptions; crucial for benefit receipt is only whether the accumulated total duration of employment within the given time frame is sufficient to meet the tenure requirement. The larger the time frame in proportion to the necessary employment period, the greater is the accessibility of a welfare scheme. This can be easily measured by calculating the minimum fraction of the time frame that needs to be filled with paid work in order to gain access to the most marginal benefit of either scheme. Technically, this is done by dividing the indicator *minimum weeks* by the length of the time frame. The indicator hence can take on values between zero and one; lower values indicate a more generous regulation. The value of one stands for the strictest regulation possible, ruling out any chance to accumulate work weeks if these have interruptions.

Example: 52 weeks in employment within the last 104 weeks were needed to qualify for the unemployment benefit in Germany in 2008. Dividing the former by the latter yields 0.5 (= 52/104).

Next, I present the indicators of the benefit index for atypical employees. The generosity of benefits is generally dependent on two aspects: *how much* is disbursed for *how long*.

Replacement Rates: to measure the amount of social welfare payments (i.e. the *how much* aspect), I compute the percentage rate of a former reference net income that is replaced by benefits. I deviate, however, from

other attempts by referring to a part-time and fixed term worker rather than to an average production worker with a full-time permanent contract. The reference atypical employee is 40 years old, childless and has 20 hours of weekly working time. The age of 40 has been chosen to avoid that any special rules for younger or older employees enter into the calculation. The employee had continuously been in paid work for 52 weeks prior to the benefit claim and has exhausted all further benefit entitlements other than those directly accruing from the last employment period. 52 weeks of work were chosen as a convenient assumption since it is a time span sufficient to qualify for benefits in each included country, yet short-term enough to be unambiguously considered atypical. In order to obtain country and time-specific net incomes for the reference employee, I use OECD data of annual mean wages and divide them by the average number of annual hours worked in the pertaining country, yielding the annual hourly mean rate. This figure is then reduced by one third to take into account atypical employees' wage penalty⁶ and multiplied by the sum of hours the reference employee with a 20-hours week works per year. The result is the reference employee's annual gross wage. Now the various country and time-specific benefit rules (including waiting days) are applied to these reference incomes to determine each benefit's gross replacement rate. Subsequently, gross benefits and gross wages are converted into net values using comparative OECD data on taxation and social contributions (see chapter 6.2.4.). Finally, a division of net benefits by net earnings yields the net replacement rate, i.e. the proportion of disposable income replaced by the respective benefit. Higher values imply higher generosity. In accordance with OECD procedures, I only take into account the amount of gross benefits paid out during the first six months of receipt and annualise it by multiplying it by two (OECD 2007: 68–75).

⁶ This is a higher wage penalty than estimated by most of the literature. I nonetheless decided to choose a somewhat exaggerated figure, in order to work out the effect of the wage penalty more clearly and to avoid underestimating its real impact.

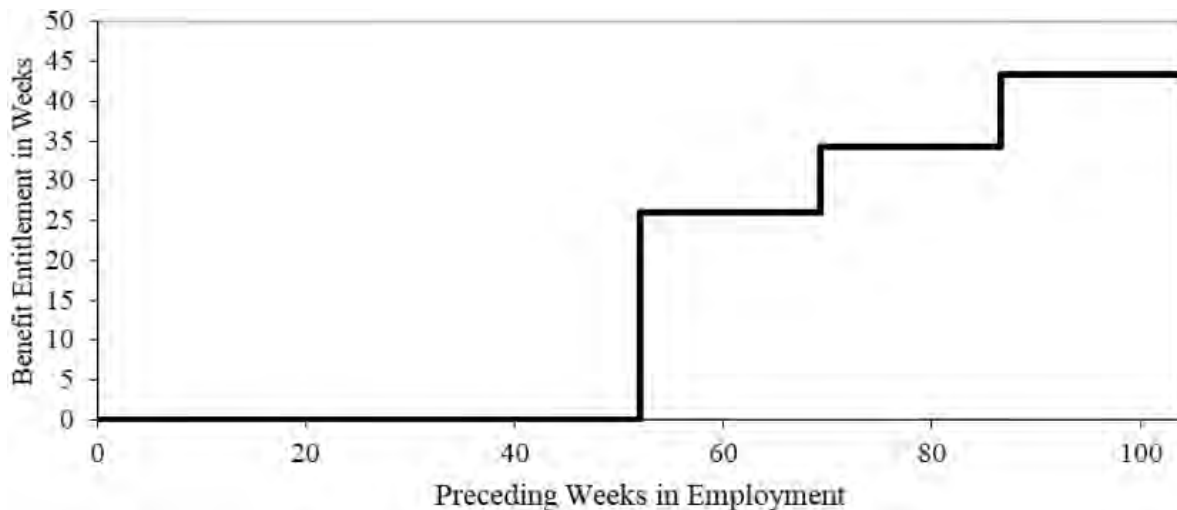


Table 6.1: Duration Function of Unemployment

Duration: how long a claimant will be entitled to benefit receipt is mostly dependent on the length of the preceding work period. This link can be easily expressed by a function stating precisely how tenure translates into benefit duration: the x-axis shows the number of weeks in employment, with the y-axis representing the resulting number of benefit weeks. The characteristics of the reference worker, to which the function is applied, are identical to those used in the computation of replacement rates; the only exception is that the assumption of exactly 52 weeks of tenure is dropped. Instead, I consider the reference worker's first 104 weeks in employment to accommodate the fact that temporary contracts frequently run longer than one year. The value of the indicator is determined by working out the integral of the function between $x = 0$ and $x = 104$, divided by the number of weeks for which $x \leq 104$ and $f(x) > 0$ (i.e. the sum of weeks during which the access requirements are met within a contract's assumed tenure of two years). Higher values imply a higher possible duration of benefit receipt for the atypically employed. The number of weeks during which $f(x) = 0$ (i.e. the qualification requirements are not met) does not enter into the calculation of benefit duration. This is important because this number is identical to the indicator minimum weeks in the accessibility index. If it were allowed to influence the indicator benefit duration as well, the benefit index for atypical employees would be

distorted, as a result, by a measure that is actually gauging accessibility.

A major objection against the proposed duration indicator is, however, that it does not inform us as to the precise course of the function, but merely gives a summed up and averaged value. This is true, yet it still provides more information on the treatment of part-time and fixed term employees than it would if we just considered the benefit duration resulting from one arbitrarily chosen employment period (e.g. benefit weeks after 2 years on a job).

Example: Figure 6.1. presents the duration function of Germany in 2008. The size of the area limited by the function and the x-axis up to the point where $x = 104$ is 1796.43. The section where $f(x) > 0$ and $x \leq 104$ has a length of 52, so that the final indicator value is given by $1796.43 / 52 = 34.55$.

The indicators of the *benefit index for standard employees* are closely connected to those included in the corresponding index for atypical employees.

Replacement rate: the procedure to compute standard workers' replacement rates is analogous to atypical employees' with only two minor differences. First, a standard employee is used as reference who is 40 years old and without children, but unlike her atypical counterpart, has a weekly working time of 40 hours and an uninterrupted employment record of 20 years of service for one or several employers. Second, the replacement

rate is calculated based on the undiminished country-specific mean income.

Benefit Duration: assessing standard workers' benefit duration is an easier task than atypical workers'. I assume the same reference standard employee as used in the preceding paragraph. The indicator then is simply the number of weeks the employee is entitled to either benefit. In most cases, this is equal to the maximum duration the payment can be drawn.⁷

The next section explains how these raw indicators are further processed so as to form single indices.

6.2.3. COMPUTATION OF THE INDICES

Before the indicators can be aggregated to indices, it is necessary to harmonise their measurement units. This is done using *min-max normalisation*, based on the simple principle of assigning zero to the lowest empirical value of each indicator and one to the highest. All values in between are hence transformed to oscillate between zero and one (European Commission / OECD 2008: 28).⁸ Next, the polarity of the indicators needs to be adjusted since the accessibility indicators report more favourable rules by lower values, whereas the benefit indicators do so by higher ones. As it is most intuitive if higher values imply higher generosity, the polarity of the accessibility indicators is reversed by subtracting their harmonised values from one. Because the aggregation of the indicators will later be conducted by use of the geometric mean, it is further necessary to correct for two more issues. First, it must be ensured that the processed num-

bers are sufficiently large.⁹ Therefore, all indicators are multiplied by 10. Second, since the geometric mean needs all included values to be larger than zero, the indicators are not allowed to assume values smaller than 0.01. After these transformations and corrections have been applied, each indicator finally moves on a scale between 0.01 and 10, with higher numbers implying greater generosity.

The next step is to assign weights to the indicators. This process is always a source of contention because any weighting is necessarily based on subjective assessments rather than purely objective principles. The best way to cope with this subjectivity is thus by being transparent about the rationale informing the assignment. Starting with the *accessibility index*, I argue that requirements concerning minimum volumes of work bear no greater importance on the chances of atypical employees to become eligible than requirements for minimum tenures. Which factor actually turns out to be more or less detrimental to atypical workers depends on the terms of each individual employment contract and cannot be determined a priori. Both aspects should thus be given the same weight. Since the necessary volume of work is captured solely by the indicator minimum hours, it is consequently assigned a 0.5 weight. Tenure, however, is jointly measured by the indicators minimum weeks and time frame, the latter of which mitigating the effect of minimum weeks by allowing to accumulate working weeks within a greater span of time, even when there are interruptions between employment periods. Due to the resulting close interrelation of both indicators, the remaining 0.5 weight is shared equally between minimum weeks and time frame. With regard to the benefit indices, the assignment of weights is more straightforward: benefit duration and replacement rate are each allotted the same weight of 0.5 because there is no reason to assume that either aspect is more beneficial to atypical employees than the other.

Finally, the weighted indicators must be joined to-

7 Some countries pay benefits for an infinite period of time. In this case, I use the longest finite duration a country ever granted in the entire dataset: in Denmark, the unemployment benefit could be received for up to nine years until 1994 when it was cut to seven years. As for sick pay, the longest finite duration was three years in France. This rule was in place throughout all observed years.

8 Mathematically, this transformation works by subtracting from each indicator value the lowest empirical value and dividing it by the difference between the highest and the lowest value.

9 The smaller the numbers the geometric mean is applied to, the less will its results deviate from the simple arithmetic mean.

gether to form the indices. A simple and frequently used way—e.g. by Esping-Andersen to construct the decommodification index—would be to add up the indicators. Concomitant to this procedure is that it renders the indicators compensatory, with high scores of one indicator possibly making up for low values of another. Yet this logic barely applies to the indices proposed here. This becomes most obvious for the *accessibility index*: if a work contract comprises not enough hours to qualify for a benefit, it cannot be offset by longer tenure and *vice versa*. The benefit indicators, by contrast, are compensatory, but only to a limited extent: a higher benefit amount can theoretically compensate for shorter duration by providing the means to build up savings; in practice, however, almost all benefits will be lower than regular income and hence entail a reduced savings propensity.

One possible way to make indices less compensatory is the application of the geometric mean, instead of the arithmetic mean or a simple addition, to aggregate the indicators. The geometric mean is conveniently calculated for every year and country by multiplying all indicators with their respective weights as exponents. Compensation is not fully ruled out, but significantly more weight is put on smaller values, so that low scores are more difficult to make up for. This way, the geometric mean can at least partly factor in the non-compensatory nature of the indicators by prohibiting that low values are fully offset by higher ones. The only indicators that do share a compensatory relationship are the ones gauging tenure requirements, i.e. *minimum weeks* and *time frame*, to which the geometric mean consequently would not be rightly applied. Both variables are hence better combined by using the arithmetic mean whose outcome then enters into the further computation of the final index.

The formulas of the indices are accordingly:

$$Accessibility\ Index_{ij} = Minimum\ Hours_{ij}^{0.5} \cdot \left(\frac{Minimum\ Weeks_{ij} + Time\ Frame_{ij}}{2} \right)^{0.5}$$

$$Benefit\ Index_{ij} = Replacement\ Rate_{ij}^{0.5} \cdot Duration_{ij}^{0.5}$$

Subscript i denotes the country, j the year. To scruti-

nise how the results are affected by whether the geometric or the arithmetic mean is used for aggregation, I compute each index in both ways. As it is impossible to compare the outcomes at face value, I convert each index into a rank scale, i.e. all values are replaced by their specific ranks across all countries and years. This exercise results in a total of 361 ranks¹⁰ for each index and allows for the comparison of outcomes obtained through either method of aggregation. By and large, the difference between both methods is not too big for all indices measuring unemployment benefits; ranks deviate by only three to ten percent on average (see table 6.2). Yet some countries show notable discrepancies (see appendix): averaged over all years, Japan ranks 60 places lower in the *benefit index for standard employees* if the geometric mean is used. In the corresponding index for atypical employees the disparity is even 118 places, despite very high *replacement rates*, as the aggregated index is inevitably dragged down by a particularly short *benefit duration*. Finland, Spain, and Ireland, by contrast, rank twenty to thirty places higher in the *benefit index for standard employees* once the geometric mean is used.

| | |
|---|--------|
| Accessibility Index of Unemployment Benefits | 2.84% |
| Unemployment Benefit Index for Atypical Workers | 10.13% |
| Unemployment Benefit Index for Standard Workers | 6.15% |
| Accessibility Index of Sickness Benefits | 4.57% |
| Sickness Benefit Index for Atypical Workers | 14.62% |
| Sickness Benefit Index for Standard Workers | 12.94% |

Table 6.2: Average Rank Differences between Geometric and Arithmetic Mean

More pronounced are the overall differences in outcomes concerning sickness benefits, amounting to average differences in ranks of 5% to 15%. Australia, Canada, Denmark, Ireland, New Zealand, Switzerland, and the

10 Identical indicator scores are assigned their average rank.

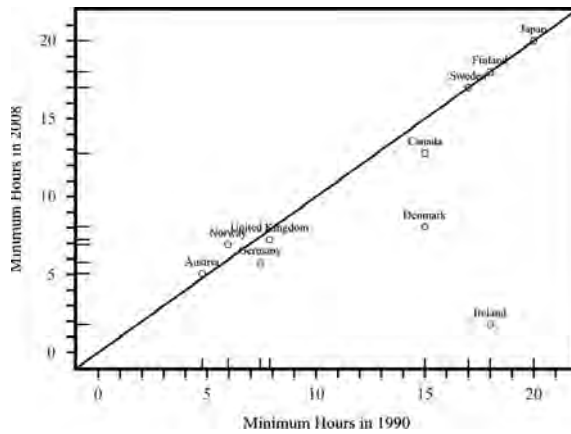


Table 6.3: Minimum Hours

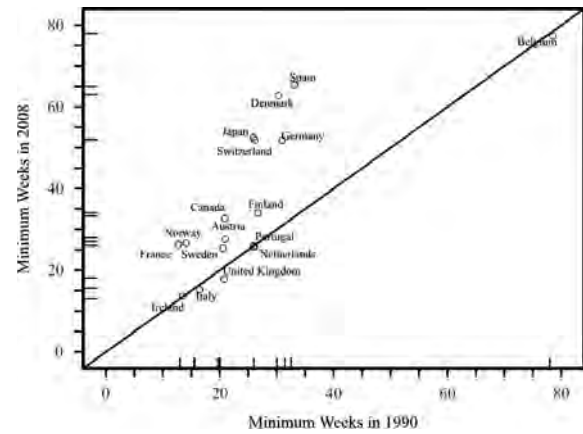


Table 6.4: Minimum Weeks

UK are affected by the highest rank disparities of up to 110 ranks. In Australia, Ireland, and New Zealand, this is caused by unusually short benefit durations, making the benefit indices drop steeply in spite of very generous replacement rates, once the geometric mean is applied. Benefit indices, in general, seem to react more sensitively to the choice of aggregation method because wide divergences between *benefit duration* and *replacement rates* are more common than between access criteria.

What can be seen from this is that, although the scale of averaged total rank disparities across time and space is only moderate, the geometric mean nonetheless has a substantial impact on some single outcomes. A closer look at country details reveals that the geometric mean does what it is expected to do, namely to penalise countries with particularly low values on single indicators, thereby making the indices less compensatory and shifting them closer to the reality of many standard and atypical employees.

6.2.4. DATA

The rules governing benefit entitlements to both unemployment and sickness benefits were obtained from the *Comparative Tables on Social Protection*, provided by the *Mutual Information System on Social Protection (MISSOC)*, reaching back to the year 1997. Additional details about unemployment benefits were found in the country chapters of the OECD series *Benefits and*

Wages, starting in the year 2001, but for some countries even going further back to 1995. Most data on earlier years stem from country-specific case studies, covering various particular aspects of social welfare systems (see annex for a detailed list). In order to convert gross incomes into net incomes, annual data were used from the *Taxing Wages* series, published by the OECD, starting in 1995.¹¹ Earlier tax data were collected from *The Tax/Benefit Position of Production Workers 1991–1994* (OECD 1995) and from *The Tax/Benefit Position of Production Workers 1990–1993* (OECD 1994).

6.3 DESCRIPTIVE RESULTS FOR UNEMPLOYMENT BENEFITS

6.3.1. ACCESSIBILITY INDEX

First, I give a brief overview of the evolution of the raw indicators between 1990 and 2008, before I turn to present in more detail the final results of the index. Starting with *minimum hours* in the year 1990, the Scandinavian countries of Denmark, Sweden, and Finland together with Ireland and Japan had the most restrictive requirements of at least 15 weekly working hours (see

¹¹ With additional data on Sweden by Blomquist et al. (1997) and Edmark et al. (2012)

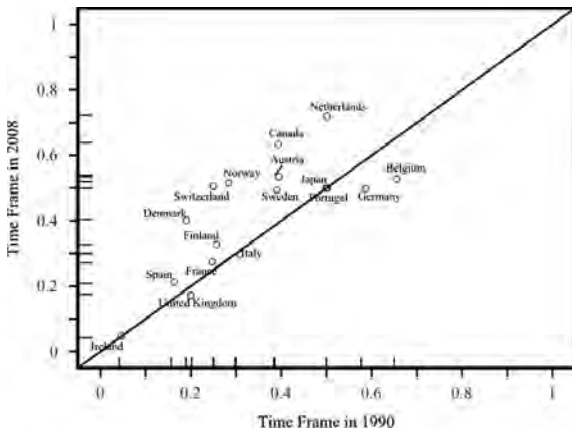


Table 6.5: Time Frame

table 6.3). Austria, Germany, Norway, and the UK had more lenient rules, demanding between five and eight hours, while all other countries allowed access to unemployment benefits regardless of work volume. By 2008, many countries had relaxed their hours requirements. Ireland did most significantly so by cutting the threshold from 18 to 2 hours, but also Canada, Denmark, Germany, and the UK saw some loosening, albeit on a smaller scale. Only Austria and Norway slightly tightened up their rules.

In sharp contrast to this change towards more inclusiveness is the sharpening of minimum weeks requirements, taking place in almost all countries in the data set (see table 6.4). In 1990, only Belgium required a qualification period of more than one year; Denmark, Germany, and Spain expected more than half a year. Eighteen years later, already six countries (up from one) required employment periods of at least one year. At the same time, the number of countries where tenures of less than half a year were sufficient for eligibility had decreased by half (in 2008, it was only Ireland, Italy, and the UK). No country had made its rules substantially less restrictive.

The same trend also holds for *time frame* (see table 6.5). At the onset of the observation, Belgium and Germany had the strictest conditions of about 60%, whereas half of all countries demanded only 30% or less. By the end of the observation, these proportions had almost reversed. Half of all countries now required more than 50% of the time frame to be spent in paid employment;

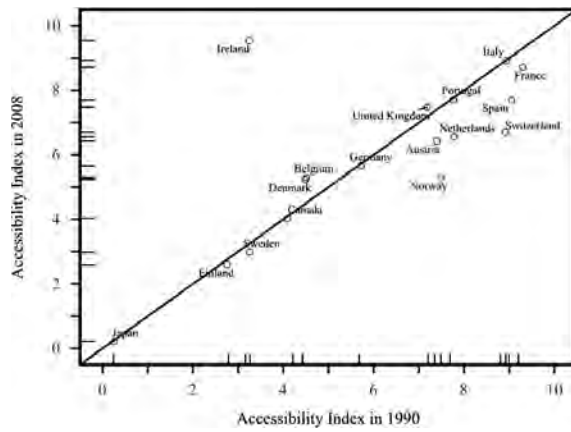


Table 6.6: Accessibility Index

only France, Ireland, Spain, and the UK stuck with less than 30%. Surprisingly, these two countries that used to have the harshest rules in 1990 and 1991—Germany and Belgium—are the only cases to make their time frames more accommodating.

Turning towards the aggregated index, in 1990 and 1991 there used to be the top group of France, Italy, Spain, and Switzerland with index values of about nine points (see table 6.6). This group was closely followed by Austria, Norway, the Netherlands, and the UK, showing index values of about seven to eight points. Other countries were trailing behind these frontrunners with a significant distance: the next highest ranking country was Germany with a value of 5.7 points; Belgium, Canada, and Denmark scored between four and five points. Sweden and Finland attained values of 2.8 to 3.3. Outlier was Japan with a score of less than one.

In light of the substantial tightening of *minimum weeks* and *time frame*, we expect the *accessibility index* to fall significantly in most countries. In fact, all countries other than Belgium, Denmark, and Ireland are marked either by a clear decrease or by stagnation. By 2008, the frontrunners were nonetheless mostly the same as 18 years earlier, albeit with generally somewhat lower values. Switzerland and Norway, however, had left the highest ranks and were replaced by Ireland, being the highest climber. Belgium and Denmark caught up with Germany and Norway to form a new intermediate group, whereas Canada, almost on par with Belgium and Denmark in 1991, hardly changed its accessibility.

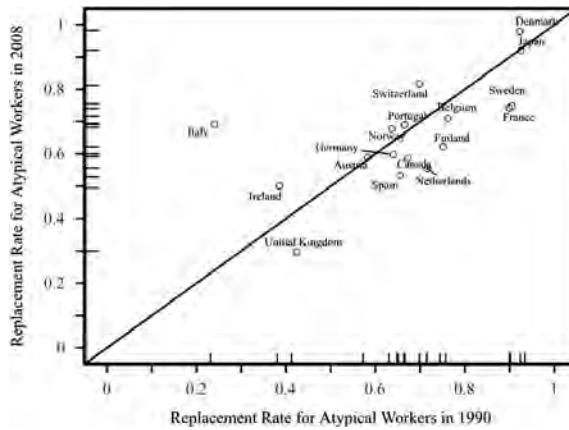


Table 6.7: Replacement Rate for Atypical Employees

Finland, Sweden and Japan were still the three lowest ranking countries.

Ireland's sudden and steep rise in 1991 was brought about by the abolition of an hours threshold which had been among the highest in the data set before. In Belgium, the increase of the index was caused by an extended time frame, while all other indicators remained unchanged. The development of accessibility in Denmark was more complicated, in comparison, as it was marked by a strong reduction of required *minimum hours*, outweighing a parallel tightening of *minimum weeks* and *time frame*. The sharpest drops were seen by Norway and Switzerland, both losing two points due to more restrictive rules on time frame and minimum weeks.

6.3.2. BENEFIT INDEX FOR ATYPICAL EMPLOYEES

In parallel to accessibility rules growing less inclusive, there is a trend towards less generous benefit amounts and shorter duration (see tables 6.7 and 6.8). In 1990, benefits were particularly generous in Denmark, France, Japan, and Sweden, replacing about 90% of former income or more. On the other side of the spectrum, it was Ireland, Italy, and the UK that compensated the smallest fraction of previous wages (40% or less). All other countries replaced between about 60% and 75%. 18 years onwards, however, the former top group had dispersed: Denmark, the most generous country in 1990, had even

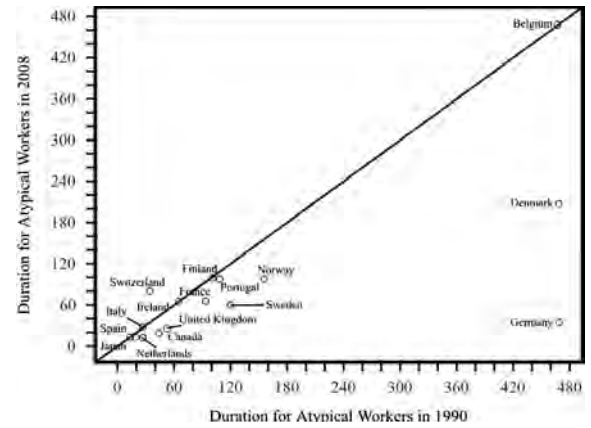


Table 6.8: Duration for Atypical Employees

further increased its replacement rate, whereas France and Sweden cut it considerably. Nevertheless, they still are part of a broader, more generous group, also including Belgium, Italy, Norway, Portugal, and Switzerland, compensating 60%–80% of lost income. Likewise, also the group with the lowest benefits had ceased to exist 18 years later. The UK even further downsized its already modest level of compensation (30%). Italy, by contrast, had seen the steepest increase in replacement rates of all observed cases, rising from about 20% to almost 70%, enough to propel it into the group of more generous countries. Ireland, too, raised its benefits by about ten percentage points to match those of the Netherlands and Spain (50%–55%) which, in turn, had significantly trimmed their support to the unemployed as compared to the year 1990. These three countries form a new group marked by moderate replacement rates.

The duration of benefits either did not change or was considerably reduced in all countries over the observed time span with the exception of Austria, Italy, and Switzerland. The countries with the most beneficial rules in 1990 (or 1991) were Austria, Belgium, Denmark, and Germany where benefits could be drawn for at least nine years or even infinitely. Norway, Sweden, Finland, and France offered somewhat shorter benefits, but pertained nonetheless to a more generous group of countries. The remaining countries formed a quite homogeneous lower group with shorter durations. By 2008, Austria and Belgium, which used to provide benefits infinitely, had not changed their regulations,

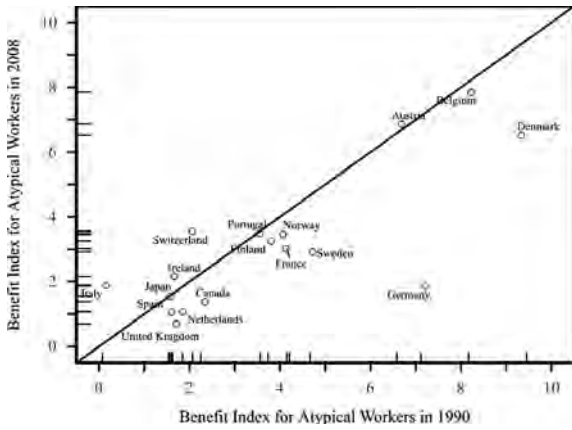


Table 6.9: Benefit Index for Atypical Employees

therefore retaining their status as the most generous countries by far. Denmark almost halved its value, yet was still the third highest ranking country. Finland and Norway stayed among the higher scoring countries on a somewhat lower level, but were newly joined by Switzerland which had extended its duration. By contrast, Germany and, less dramatically, Sweden, substantially cut the duration of unemployment benefits and consequently dropped to the group of countries with less favourable rules.

It comes as no surprise, then, that the final index scores of Denmark, Belgium, Germany, and Austria in the first year of observation were the highest by far due to their extraordinary benefit durations (see table 6.9). An intermediate position was taken by Finland, France, Norway, and Sweden. The remaining half of countries formed a cluster of low generosity. Among the former frontrunners, it is only Austria and Belgium that preserved their initial level of benefits over the entire period, while Denmark and, most sharply, Germany cut back on generosity. In the latter case, these cuts were so deep that the generosity of German unemployment benefits plunged from the top to the low group. Finland, France, Norway, Sweden, and, more recently, Switzerland continued to form an intermediate group. Summed up, there was a general propensity in almost each observed state to retrench unemployment benefits, sometimes very rigorously. The exceptions are Italy and Ireland which expanded their benefits, yet departing from a very low level. On a higher level, it is merely

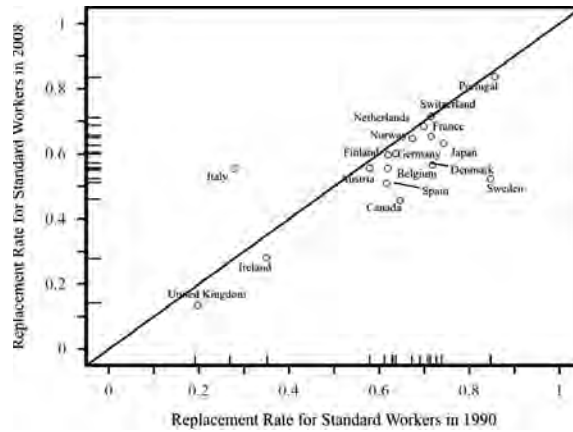


Table 6.10: Replacement Rates for Standard Workers

Switzerland that considerably increased benefits both in duration and amount.

6.3.3. BENEFIT INDEX FOR STANDARD EMPLOYEES

In 1990, replacement rates for standard employees were generally on a level similar to those for atypical ones, or slightly less (see table 6.10). Striking differences existed only in Denmark, France, Japan, and the UK, where replacement rates for standard employees were about twenty percentage points lower. In the course of the following 18 years, however, a gap manifested itself between standard and atypical employees' benefits: although both indices are subject to a common trend of retrenchment, replacement rates for standard workers turn out to be relatively more affected. By the end of the observation period, the majority of countries granted benefits to standard employees at least ten percentage points lower than to atypical employees. Exceptions are the Netherlands and Portugal, emerging as the only countries that provide standard workers with higher replacement rates.

As for the duration of benefits, it is Austria, Belgium, Germany, and Denmark that offered the longest benefits of up to nine years or even infinite in 1991 (see table 6.11). These were followed by the Netherlands, Norway, France, Sweden, Spain, and Finland, where unemployment benefits could be re-

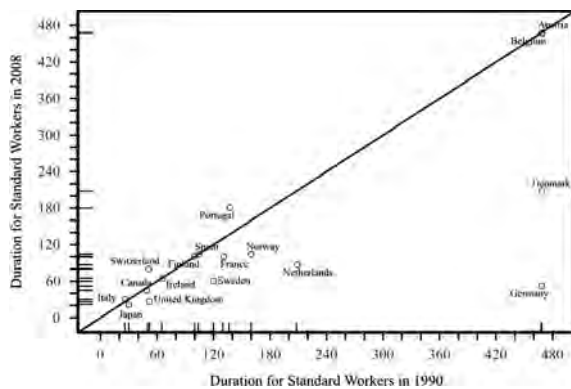


Table 6.11: Duration for Standard Workers

ceived for at least 100 and up to 208 weeks. Ireland, the UK, Switzerland, and Canada had more limited durations of about one year or slightly more. Only Italy and Japan restricted their payouts to last no longer than half a year. Therefore, as with replacement rates, benefit duration for standard employees closely resembled that for atypical employees in 1991. Only the Netherlands and Spain deviated from this pattern, granting substantially longer benefits to standard rather than to atypical workers. By 2008, benefits had been shortened or had stagnated in all countries other than Italy, Portugal, and Switzerland, where they increased. Hence, only Austria and Belgium continued to form a top group, while all other former members sank to lower levels. Denmark dropped the position formerly occupied by the Netherlands; Germany retrenched its benefits in such a way that it left the highest group and joined the lower one with benefits of about one year. Among other more generous countries, the development in Finland, France, Norway, and Spain was characterised by a downward tendency, but holding on to a more favourable position with benefits of about 100 weeks. Sweden and the Netherlands, on the other hand, cut back their benefits so sharply that duration fell below 100 weeks. In the remaining countries, duration remained at about one year or shorter, with the UK further retrenching to an already low level. Only Switzerland, bucking the trend, increased the duration of unemployment benefits to match the Netherlands'.

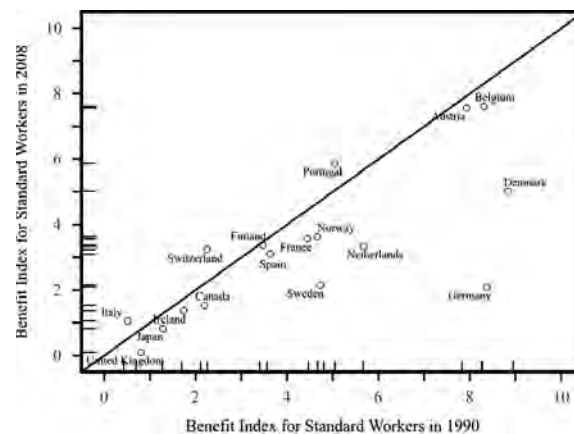


Table 6.12: Benefit Index for Standard Workers

With respect to the aggregate *benefit index for standard workers*, Denmark, Germany, Belgium, and Austria come out as the highest scoring countries in 1991 (see table 6.12), which is primarily due to their very long, quasi-infinite durations, with replacement rates only on a more intermediate level (except for Denmark). Norway, Sweden, France, and the Netherlands ranked somewhat lower despite generous replacement rates (in the case of Sweden and France even markedly above the level of the highest ranking countries), as these were outweighed by a more limited duration. On a larger scale, the same also applied to Spain, Finland, and Canada. The remaining countries showed small overall index scores because of low values in both indicators. By 2008, four countries that had been part of the top group or just behind (Denmark, Germany, the Netherlands, Sweden) had decreased their values sharply, almost entirely through severe cut backs to duration. Thus, the former top group shrunk to contain only Belgium and Austria, while a new group is formed of Denmark and Portugal, followed by a lower group of Finland, France, the Netherlands (dropping from the intermediate group), Norway, Spain, and Switzerland. The lowest group, finally, extended to include Germany (dropping from the highest group), Sweden (dropping from the intermediate group), Canada, Ireland, Italy, and the UK. In summary, it was mostly cuts to duration, rather than to replacement rates, that account for the trend towards retrenchment.

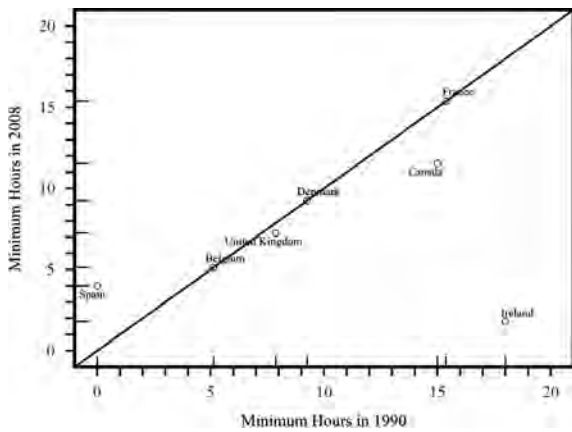


Table 6.13: Minimum Hours

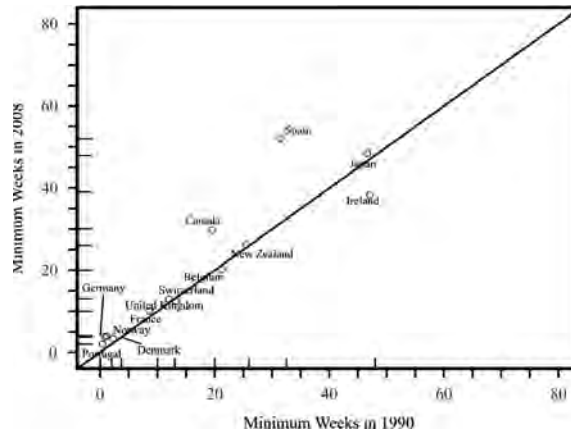


Table 6.14: Minimum Weeks

6.4 DESCRIPTIVE RESULTS FOR SICKNESS BENEFITS

6.4.1. ACCESSIBILITY INDEX

The indicators employed to measure sickness benefits are marked by much greater stability over the observation period than the variables gauging unemployment benefits. This holds in particular for the accessibility indicators. *Minimum hours* were varying in merely six countries between 1990 and 2008, mostly easing the condition (see table 6.13). Germany and Ireland lowered the threshold from initially high levels (10 and 18 hours, respectively) to almost zero; Canada, Sweden, and the UK reduced their thresholds as well to fewer than four hours. Spain, by contrast, was the only country to tighten its volume requirement by four hours. All in all in 2008, only a minority of countries required *minimum hours* to be greater than zero which means, in turn, that a total of eleven countries allowed access regardless of weekly working time. The strictest rules were in force in France, Denmark, Japan, and Canada (despite the easing), demanding more than ten hours. Somewhat less strict were Belgium, Ireland, and the UK with less than ten hours. Japan, as with unemployment benefits, is an outlier through all years, offering sick pay only to employees with more than thirty hours a week, thereby effectively excluding the vast majority of atypical workers.

Minimum weeks, just like *minimum hours*, show a high consistency too, yet with a slight tendency towards more restrictiveness (see table 6.14). In 2008, 12 of 19 countries in the data set defined a minimum weeks requirement of whom seven countries required 13 weeks or less. The toughest conditions were set by Canada and Ireland with more than thirty weeks; these were also the only countries where a pronounced tightening happened, increasing the threshold by no less than ten weeks. Norway, Germany, and Portugal also increased the number of weeks, but to a much smaller extent of about 2 to 4 weeks. Ireland, on the other hand, made its rather strict criteria more inclusive. *Minimum hours* and *minimum weeks* are hence much less challenging for sickness than for unemployment benefits.

The opposite is true for *time frame*, tending to be significantly stricter for sickness benefits. In 2008, a minority of six countries defined no time frame at all, while just as many countries required all *minimum weeks* to be accumulated without interruption. Even the less challenging regulations expected in most cases that at least fifty percent of the *time frame* were to be filled with work, much more than was needed to qualify for unemployment benefits. Canada, Germany, Spain and Portugal restricted their *time frames* in the observed period, Ireland relaxed it.

Since there is less variation in the indicators, there is also less in the aggregated *accessibility index* (see table 6.16). During the observed 18 years, only Germany, Ireland, and Spain notably changed their scores.

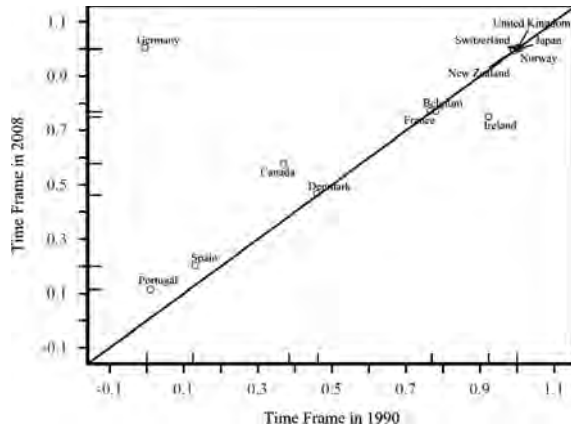


Table 6.15: Time Frame

By 2008, access to sick pay was almost universal for atypical employees in Australia, Austria, Finland, Italy, Netherlands, Portugal, and Sweden. Somewhat less accessible were sickness benefits in Denmark, Germany (declining from almost universal access in 1991), and Norway. More austere were rules in Belgium, Canada, France, New Zealand, Spain (losing about two points compared to 1990), Switzerland and the UK. Ireland almost tripled its score, but remained the second lowest ranking country in the index, with only Japan trailing further behind.

6.4.2. BENEFIT INDEX
FOR ATYPICAL EMPLOYEES

Replacement rates of sickness benefits varied more over time than the accessibility indicators, but still less than compared to unemployment benefits' (see table 6.17). They were also considerably higher than unemployment benefits' and displayed less of a downward tendency. At the end of the observation period, Denmark was the most generous country almost overcompensating, but also Australia, Norway, New Zealand, and Switzerland completely replaced forfeited income due to illness. Austria and Germany offered above average payments of more than eighty percent of former net wage. The majority of countries chose replacements of between seventy and eighty percent. Finland, Canada, and France paid about sixty percent of former wage to sick workers,

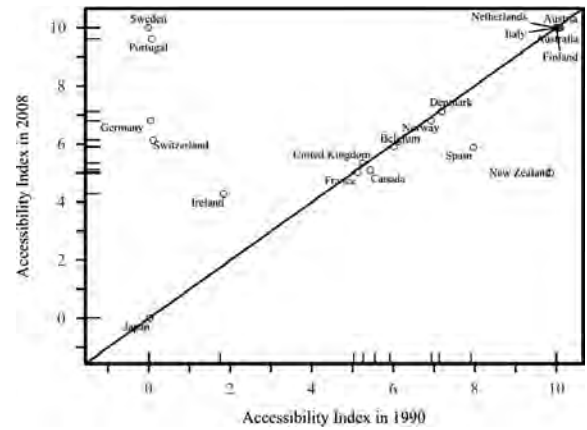


Table 6.16: Accessibility Index

characterising them as less generous schemes, undercut only by Ireland and the UK with the lowest replacement rates below fifty percent. The sharpest retrenchment happened in Finland and the UK by up to twenty percentage points; Germany, Canada, and Sweden did the same on smaller scale of only about ten percentage points. By contrast, Ireland and Japan were raising replacement rates by nearly ten percentage points.

Unlike replacement rates, benefit duration was marked by stability (see table 6.18). Its values of 2008 were widely in correspondence with those 18 years earlier. The most generous rules by far had Sweden and Portugal, then came France, the Netherlands and Ireland; the latter two being among the few countries to increase their durations. Slightly less generous was Germany. The largest cluster of countries is formed between values of about 4000 to 5000 total weeks (the UK joined

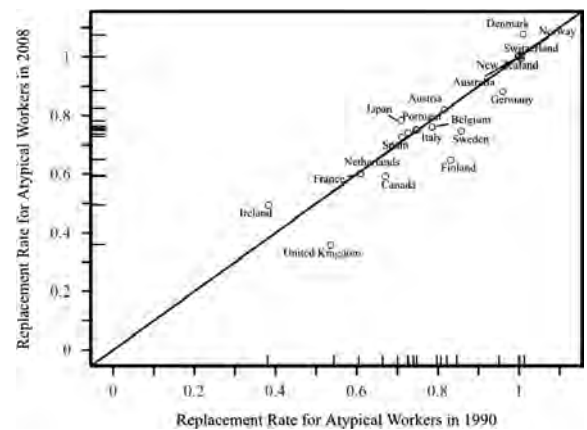


Table 6.17: Replacement Rate for Atypical Workers

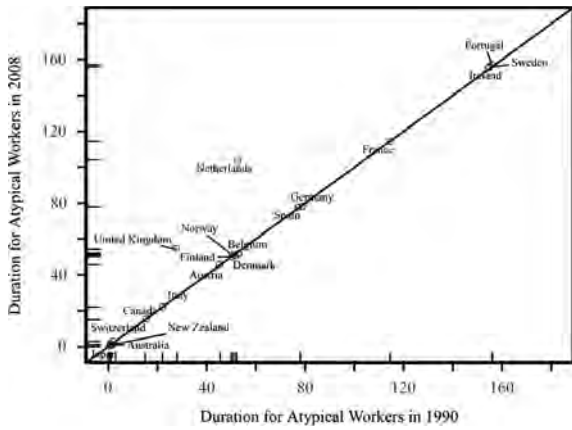


Table 6.18: Duration for Atypical Workers

this group in 1995, starting from a lower value), while Italy, Australia, Canada, New Zealand and Switzerland ranked far behind.

Converted into the *benefit index for atypical employees*, Sweden and Portugal turned out to be the highest ranking countries as they had the highest values for both *duration* and *replacement rate*. Most countries, however, showed medium index values between five and six. In this context, Ireland and the Netherlands need to be highlighted, being the only countries to substantially increase their scores. Austria and Belgium reached values between four and five over the entire time span, while Finland, even though its values initially equalled Austria's and Belgium's, decreased its score to below four through cuts to the replacement rate. The remaining countries formed a group of particularly less generous countries, the extremes being Japan, Australia, and New

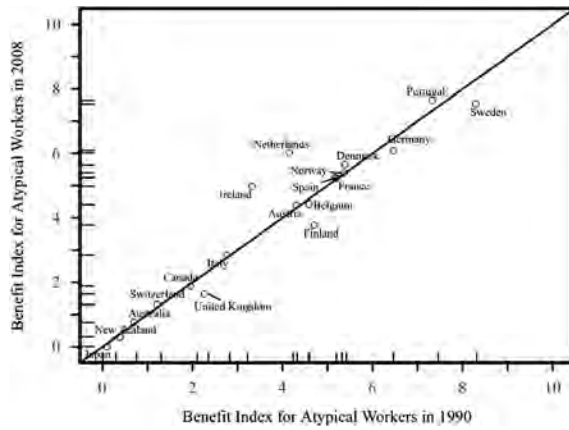


Table 6.19: Benefit Index for Atypical Workers

Zealand. In case of the latter two this may come unexpectedly since they offer high replacement rates, but their index scores were inexorably dragged down by the unusually short duration of payments.

6.4.3. BENEFIT INDEX FOR STANDARD EMPLOYEES

Replacement rates for standard employees were very similar to atypical employees', in most countries even nearly identical (see table 6.20). Major exceptions were Belgium, Germany, and Spain where standard workers despite their higher wages received replacement rates about ten percentage points higher than their atypical colleagues. The opposite was true in an extreme way in Denmark where standard workers' benefits were at least forty percentage points lower than atypical workers'. In the UK, Canada, and Ireland a similar gap existed, amounting to about ten to twenty percentage points. In all of these countries (except in the UK), atypical workers were doing considerably better in terms of replacement rates; cuts have thus been concentrated on standard workers.

Sweden and Ireland stick out among other countries in that sickness benefits can be received without any temporal limit (see table 6.21). In France and Spain, maximum duration was three years, in the Netherlands two years, Germany, Japan, and Spain allowed receipt of up to 78 weeks. Six countries limited sick pay

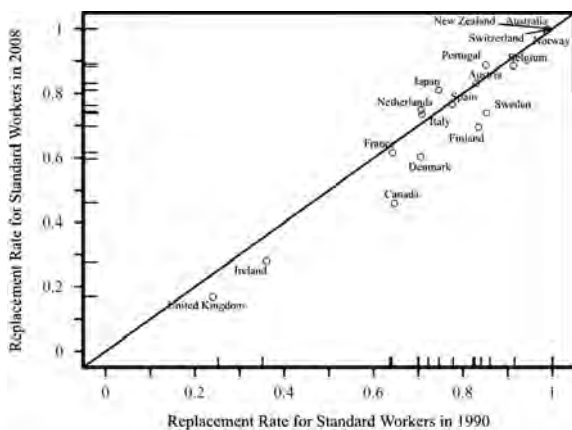


Table 6.20: Replacement Rates for Standard Workers

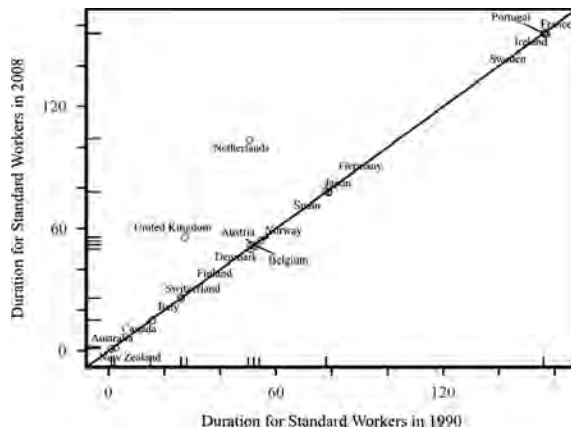


Table 6.21: Duration for Standard Workers

to about one year. Shorter durations existed only in Italy, Switzerland, and Canada where 15 to 26 weeks were the maximum. Australia and New Zealand had the least generous regulations, granting merely one or two weeks of wage continuation. Changes occurred only in the Netherlands and the UK, both doubling the maximum length.

Accordingly, the final index looks very similar to the index for atypical workers (see table 6.22). Yet some exceptions stand out: Denmark, Ireland, and the UK show significantly smaller values because of lower replacement rates for standard employees. Japan, by contrast, offers high benefits to standard workers even though it denies them to atypical ones. Likewise, rules in Finland, France, Portugal, and Switzerland seem to privilege standard employees.

6.5 MINIMUM INCOME PROTECTION

It is one core objective of this study to set unemployment and sickness benefits in relation to minimum income protection schemes put in place to help out if all other benefits have been exhausted. It is reasonable to analyse both types of protection schemes in interaction since they may act as functional equivalents. If, for instance, the incentives to take on a job are examined (as is done in this study), it may not suffice to solely focus on the generosity of unemployment benefits because many job seekers will rely on minimum income pro-

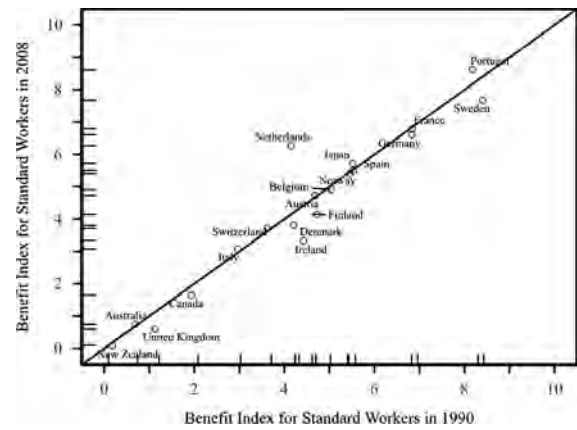


Table 6.22: Benefit Index for Standard Workers

tection instead, thus are not affected by adjustments of insurance-based benefits. In particular, this is more of a concern for atypical employees than standard ones as the latter face a higher risk of failing the access criteria of first-tier benefits. Any analysis of the effects of benefits for atypical employees should therefore take minimum income schemes into account.

In order to operationalise the generosity of minimum incomes in such a way as to make them comparable to first-tier benefits, I refer to the *Social Assistance and Minimum Income Protection Interim Data-Set (Version: 2.5 Beta, 2010)* collected and described by Nelson (2007a) for the years 1990 to 2009. The data set contains information on the amounts paid out in form of social assistance, housing benefits, and various other support measures (such as refundable tax credits or child benefits) which, added up, yield the final amount of minimum income protection. Then, I work out the net replacement rates of such minimum incomes across all countries and years. Just like replacement rates of unemployment and sickness benefits, minimum incomes are thus expressed as fractions of net mean wages for each country and year. As has been elaborated in chapter 5.6., eligibility to such basic provision is usually tied to strict job search requirements, means-testing or even community service, which can seriously impair a claimant's chances of receiving it. Nonetheless, it is not possible to consider the strictness of these criteria in this study as to this day there are no comprehensive data on this topic available.

At the onset of observation, the dispersion of minimum incomes was relatively wide (see table 6.23). Norway had the highest replacement rate (70%), followed by Denmark and Sweden (60%); Germany and Finland reached values between 50% and 60%. Norway's replacement rate is thus about as high as the corresponding rate of the unemployment benefit. In Denmark, Germany, and Finland minimum incomes were about ten points lower, whereas in Sweden the difference was 25 percentage points. Gaps of this size seem to be the standard in most other countries: Ireland, the Netherlands, New Zealand, and Switzerland compensated between forty and fifty percent of a mean income which was at least twenty percentage points less than the unemployment benefit. The exception was Ireland where minimum income and unemployment benefit could hardly be distinguished by amount. The remaining countries replaced between thirty and forty percent, being at least thirty points below the level of the unemployment benefit (except in Italy and the UK where the unemployment benefit was particularly ungenerous). Portugal was an outlier by offering only 15% as minimum income. Compared to replacement rates of atypical workers' unemployment benefits the gaps between minimum income and insurance-based benefits would be even higher; the same holds for sickness benefits. The only countries deviating from this pattern are the UK and Ireland whose unemployment, sickness, and minimum income benefits were all of about the same amount.

At the end of the period, the picture had not profoundly altered although the majority of countries had lost a few percentage points in replacement rates. Those countries with the most generous rules in 1990, however, slashed their minimum incomes much more than the rest. Sweden, for example, cut its scheme by 20 points, Denmark by more than 15 points, Norway and Finland by roughly ten points. Only Germany did not reduce its minimum income and therefore was the country with the highest replacement rate in 2008. On the other side of the spectrum, Canada and Spain reduced their replacement rates by about ten points despite their already low levels. Considerable hikes were

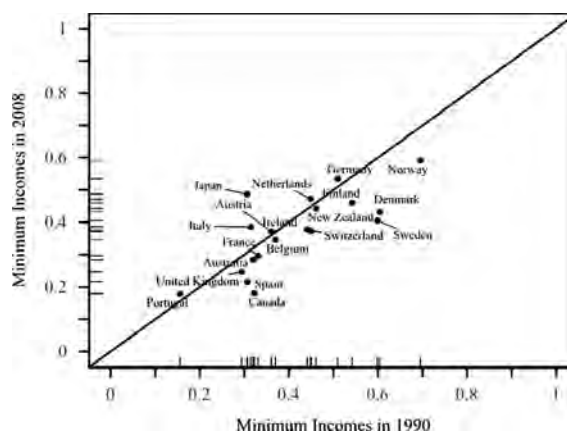


Table 6.23: Minimum Incomes

taking place only in Italy and Japan where minimum incomes were rising by eight and 18 percentage points. Since unemployment benefits were falling in line with minimum incomes over the same period, there was no general trend towards convergence among them.

6.6 CONFIGURATIONS OF SOCIAL PROTECTION ARRANGEMENTS

6.6.1. CLUSTERING METHOD

With four indices in place gauging accessibility, payouts for standard and atypical employees as well as minimum incomes, the configurations of social protection arrangements covering the risks of unemployment and sickness are ready to be analysed for different countries and years. In order to do so, hierarchical clustering has been applied, sorting the observed countries into groups based on similar index scores. For both unemployment and sickness benefits there are two analyses each, one at the onset of the observation in 1991 and another one over to the end in 2006.¹² A direct comparison of the

12 For most countries there are data ranging from 1990 to 2008, yet due to some missing values for Germany, Switzerland, Portugal, Sweden, and (for sickness benefits) New Zealand in 1990 and for Norway in 2007 and 2008 the years 1991 and 2006 have been chosen to perform the cluster analysis. Furthermore, Portugal is excluded from the analysis as data on this country are particularly patchy.

resulting clusters gives us an overview of how social protection arrangements evolved during the included years.

There are several methods by which clustering can be conducted. Since there are no objective criteria determining which one returns the best results, I decided to use four established hierarchical algorithms—Ward Method, Complete Linkage, Unweighted Average, and Weighted Average¹³ – and to compare the outcomes. A brief overview of the mathematical details of each algorithm is given in European Commission / OECD (2008: 74):

Ward Method: clusters are formed by joining countries that increase the variance, i.e. the sum of squared deviations from the cluster mean, by the smallest possible amount. In a first step, two countries with the smallest variance are joined together, then more countries or clusters are gradually added to the existing ones. This method is likely to generate very homogeneous clusters (Leschke 2008: 202).

Complete Linkage: under this method, it is not the variance, but the distance between clusters that determines which countries or clusters are joined together. The distance between clusters is determined by the greatest distance between any two countries belonging to different clusters. In each step of the clustering procedure, two clusters with the smallest distance are merged.

Unweighted Average: this method functions just like *Complete Linkage*, except that the distance between clusters is computed as the average distance between all pairs of countries in two clusters.

Weighted Average: this algorithm is identical to *Unweighted Average*, adding just one computational step by weighting the average pair-group distance by the size of the cluster, i.e. the number of countries contained.

To run the algorithms described above the distance between countries needs to be computed. I decided to use the squared Euclidean distance which puts more

weight on greater distances and is the common distance measure in social science.¹⁴ It is sensitive to differences in variable scales, however, and needs normalised indicators as inputs. For minimum income this is done by a simple min-max-normalisation, just as it was performed to calculate accessibility and benefit indices. For the latter, normalisation is more difficult to achieve because their underlying concepts are complex and not directly comparable. This is illustrated by a simple example: even though all indices range from 0.01 to 10, with higher values indicating higher generosity, a one point increase in the benefit index for atypical employees may not have the same quality as a one point increase in the accessibility index. Therefore, I have used a method proposed by Tangian (2011) which exploits rank differences to quantify abstract or qualitative notions. The logic underpinning his method is that, even if certain concepts cannot be expressed by exact numbers, it might nonetheless be possible to put them in a rank order across time and space. This is clearly the case for the accessibility and benefit indices since higher scores always represent greater generosity. Then, the ranks are converted into a metrical scale by a normal min-max-normalisation. This results in a rounding error as the exact index values are abandoned in favour of relative ranks, but the error is shown to be small and decreasing in the number of ranks (Tangian 2011). Yet it allows a more relative interpretation of the values: if, for example, a country has a value of 0.5 in the accessibility index in one year, it means that accessibility in this specific country and year takes the middle rank relative to accessibility in all other countries across all covered years. It also allows for comparisons across indices. If a country holds 0.5 points in the benefit index for atypical employees, but only 0.3 points in the accessibility index, one can conclude that accessibility is less generous than benefits for atypical employees relative to other countries' rules.

13 Another frequently applied algorithm, Single Linkage, is not used because of its inherent propensity to return single country clusters, running counter to the aim of this study to assort countries to groups.

14 The Euclidean distance is mathematically defined as:

$$d_{ij}^2 = \sum_{k=1}^n (x_{ik} - x_{jk})^2$$

d is the distance between countries i and j , k denotes the number of variable x .

Once all cluster solutions returned by each algorithm have been calculated, it must be decided which solution is the most convincing and informative. While there can be no objective criteria guiding this choice, there are some measures, called stopping rules, that can act as a source of orientation. In this thesis, I employ the established Calinski-Harabasz stopping rule (Calinski / Harabasz 1974). I first check which cluster solutions the Calinski-Harabasz rule supports for each algorithm, excluding also every solution with less than three or more than six clusters as well as solutions containing single country clusters, and then further explore in detail to what extent these solutions differ from each other and whether they can be interpreted in a conclusive way. Based on this deliberation the decisions on the final solutions are made.

Besides the general information it provides on common patterns in the configuration of social protection arrangements, clustering can also inform us on the scale and variety of dualism inherent to these patterns. It can manifest itself in the clusters in three different ways: first, the accessibility score tells us to what extent atypical employees have access to first-tier benefits; lower scores (i.e. more restrictive accessibility) thus indicate a greater extent of dualism by excluding an increasing number of atypical employees from first-tier benefits. Second, the gap between benefit index scores for standard and for atypical employees informs us as to how part-time and fixed term workers are treated compared to standard ones in terms of amount and duration of benefits. If the scores of standard benefits are higher than of atypical ones, it is considered dualisation because it means that atypical workers receive relatively less generous benefits. Third, the difference between benefits for standard employees and minimum incomes is another form of dualism as it indicates how much atypical workers who do not qualify for first-tier benefits lose compared to their standard peers who usually do. Minimum incomes being smaller than first-tier benefits is thus a potential source of dualisation. It must be stressed, however, that all scores used to compute the clusters can only be interpreted as measures of generosi-

ty relative to other countries. A score of 0.5 for benefits for atypical employees and for minimum incomes does not mean that both are equal in amount and duration. Rather, it means that benefits and minimum income both take the middle position in their respective ranking. Any outcome of dualisation is thus merely a comparison of each scheme's relative generosity and cannot be interpreted in absolute terms.

6.6.2. PATTERNS OF UNEMPLOYMENT BENEFITS

For the year 1991, all algorithms return the same results when the number of clusters is four or less, only with more than four clusters do the outcomes start to differ. The Ward Method and Complete Linkage are identical even up the ninth cluster. The Calinski-Harabasz stopping rule gives the strongest support to the six clusters solution suggested by the Ward Method and Complete Linkage, with the four clusters solution not being far behind. A closer look at both solutions reveals that they are identical with only two differences: in the six clusters solution, Finland and Sweden are separated from Belgium, Germany, and Denmark to form a single cluster, and Japan and Canada are assorted to a single cluster without Australia and New Zealand. In my view, both additional clusters are not sufficiently distinct from the other clusters to justify the six clusters solution. Finland and Sweden closely resemble Belgium, Germany and Denmark in terms of accessibility and minimum income; benefits are somewhat lower, yet still clearly among the highest. Japan and Canada, in turn, share Australia's and New Zealand's strict accessibility and low minimum income, diverging only in that the former pay somewhat more generous benefits. These, however, are still among the lowest in the sample. Therefore, the four clusters solution is chosen. It contains the following clusters (see tables 6.23 and 6.24):

Mediterranean and European Anglo-Saxon Cluster: It contains the UK, Ireland, Spain, and Italy, as well as Switzerland as a special case. These countries have in

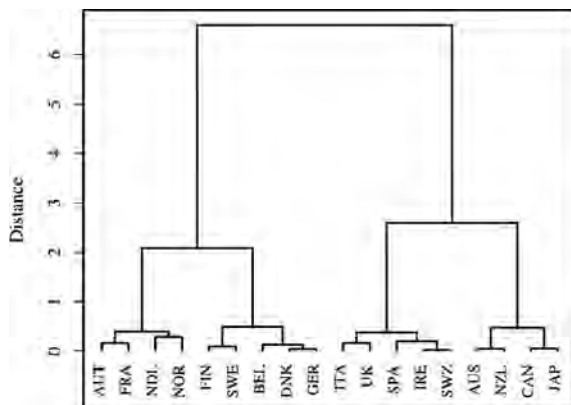


Table 6.24: Ward Clusters of Unemployment Benefits in 1991

common the highest accessibility of unemployment benefits in the data set which is accompanied by rather low benefits for both atypical and standard employees. Minimum income, too, is particularly ungenerous, barely above the level of the Non-European cluster. Dualism is thus no major issue in this cluster since all benefits are easy to access and relatively equal on a generally low level. There are no striking differences between standard and atypical employees' benefits, nor do minimum incomes substantially deviate from first-tier benefits.

Exclusive Continental Cluster: This cluster is most distinct from the Mediterranean and Anglo-Saxon Cluster in that it combines the strictest rules on accessibility with the highest benefits and minimum income. It consists of Denmark, Sweden, Finland, Germany, and Belgium. Dualism is conspicuously present in shape of very restrictive contribution conditions, barring many atypical workers from benefits. If, however, an atypical worker gains access, she can expect to receive benefits equal to standard workers'. Minimum incomes are the most generous by international standards, but do not match the level of first-tier benefits. Dualism in this cluster is thus primarily a matter of highly conditional access requirements while the gap between first and second-tier payments—albeit clearly evident—is comparatively smaller.

Inclusive Continental Cluster: In France, the Netherlands, Austria, and Norway, benefits for standard employees on average are almost as generous as in the Exclusive Cluster, yet somewhat lower for atypical em-

ployees. Minimum incomes too are smaller than in the Exclusive Continental Cluster, but larger than in any of the other two clusters. Salient, however, is that accessibility is almost as inclusive as in the Mediterranean and Anglo-Saxon Cluster. Greater access therefore comes at the price of lower benefits for atypical employees and minimum incomes. Dualism then is not so much caused by restricted openness (as in the Exclusive Cluster), but instead is found to a smaller extent in the gap between benefits for standard and atypical employees, as well as in smaller minimum incomes, disadvantaging those who fail to meet the (however lenient) contribution conditions of first-tier benefits.

Non-European Cluster: Australia, New Zealand, Japan, and Canada form a cluster which is characterised by a combination of strict qualification criteria with the least generous benefits and minimum income. This cluster thus offered the smallest support to jobless people in 1991. Despite the universally low level of social protection, there exists a certain extent of dualism in that access is heavily restricted. Minimum incomes, by contrast, exist on a similar scale as in the Mediterranean and Anglo-Saxon Cluster, which is to the advantage of atypical employees.

It can be summarised that in general benefits for standard and atypical employees do not differ much relative to each other in 1991. Discrimination against atypical employees happens mostly through qualification requirements, not through diverging benefits. On a smaller scale, it is also the low level of basic incomes that is another source of dualism. It is further important to note that in the Exclusive Continental and the Mediterranean and Anglo-Saxon Cluster there is a negative correlation between accessibility and benefits, whereas in the other two clusters the relationship is positive. The descriptive evidence on the link between accessibility and benefits is therefore mixed for the year 1991. More striking is the correlation between accessibility and minimum incomes. The Mediterranean and Anglo-Saxon Cluster and the Exclusive Continental Cluster share a negative relation between both indices, i.e. if access to first-tier benefits is restricted, basic income schemes

| | ACCESSIBILITY INDEX | BENEFIT INDEX FOR STANDARD EMPLOYEES | BENEFIT INDEX FOR ATYPICAL EMPLOYEES | MINIMUM INCOME |
|---|---------------------|--------------------------------------|--------------------------------------|----------------|
| MEDITERRANEAN AND EUROPEAN ANGLO-SAXON CLUSTER <i>IRE, ITA, SPA, SWZ, UK</i> | 0,78 | 0,25 | 0,28 | 0,33 |
| EXCLUSIVE CONTINENTAL CLUSTER <i>BEL, DNK, FIN, GER, SWE</i> | 0,11 | 0,83 | 0,86 | 0,6 |
| INCLUSIVE CONTINENTAL CLUSTER <i>AUT, FRA, NDL, NOR</i> | 0,77 | 0,8 | 0,71 | 0,48 |
| NON-EUROPEAN CLUSTER <i>AUS, CAN, JAP, NZL</i> | 0,03 | 0,14 | 0,19 | 0,34 |

Table 6.25: Average Normalised Values of Unemployment Benefit-Clusters in 1991

become more generous as, for example, in the Exclusive Cluster. This relationship, albeit weaker, is also visible in the Inclusive Cluster where minimum incomes are somewhat lower than in the Exclusive Cluster. Only the Non-European Cluster does not fit this pattern.

In 2006, clusters are less clear-cut. The Ward Method and Complete Linkage give identical results for solutions with up to six clusters and diverge only once the number of clusters grows larger. Average Unweighted Linkage and Average Weighted Linkage show an opposite pattern as they converge only once the solutions include more than seven clusters; with solutions containing seven or fewer clusters, both algorithms return differing results. The Calinski-Harabasz rule suggests three possible solutions: either the four or six cluster solutions resulting from the Ward Method and Complete Linkage, or the three cluster solution returned by Average Weighted Linkage. At closer inspection of the clusters, it becomes apparent that, unlike the clusters in 1991, the six cluster solution contains several crucial details that would be lost with any smaller number of clusters. In the four cluster solution, for instance, UK and Spain are added to a Mediterranean Cluster which can be justified due to their similarity in terms of accessibility and benefits for standard employees, however the UK and Spain also strongly deviate from the rest of the cluster by a substantially lower benefit for atypical employees and a significantly smaller minimum income. Likewise, Japan and New Zealand are joined with Australia

and Canada into a Non-European cluster, even though minimum income protection considerably varies in this cluster since Japan and New Zealand reach almost European levels of generosity. If the three cluster solution were selected, the loss of important details would be even more severe. It is hence the six cluster solution as returned by the Ward Method and Complete Linkage that is chosen for the year 2006. The clusters are composed as follows (see tables 6.25 and 6.26):

Mediterranean and Anglo-Saxon Cluster: this cluster resembles its predecessor from 1991, but Spain and the UK have been excluded to form a cluster of their own, while France has newly joined the group. The split of the original 1991 cluster is caused by the contrary developments of Switzerland, Ireland, and Italy on one side and Spain and the UK on the other side. The former three countries increased their unemployment protection, whereas Spain and the UK took the opposite path of retrenchment. France has seen notable cuts as well, but since it came from a very high level (former member of the Inclusive Continental Cluster), it converged with Switzerland, Ireland, and Italy to form a new Mediterranean and Anglo-Saxon cluster. The cluster is characterised by broad access, modest benefits for standard workers and minimum income, yet surprisingly extensive benefits for atypical employees. Dualism is thus a matter only of slim basic incomes far below the standard of first-tier benefits for atypical employees.

Residual Mediterranean and Anglo-Saxon Cluster:

| | ACCESSIBILITY INDEX | BENEFIT INDEX FOR STANDARD EMPLOYEES | BENEFIT INDEX FOR ATYPICAL EMPLOYEES | MINIMUM INCOME |
|--|---------------------|--------------------------------------|--------------------------------------|----------------|
| MEDITERRANEAN AND ANGLO-SAXON CLUSTER <i>FRA, IRE, ITA, SWZ</i> | 0,78 | 0,32 | 0,48 | 0,31 |
| RESIDUAL MEDITERRANEAN AND ANGLO-SAXON CLUSTER: <i>SPA, UK</i> | 0,73 | 0,22 | 0,1 | 0,13 |
| CONTINENTAL EUROPEAN CLUSTER WITH EXTENDED PROTECTION: <i>AUT, DEN, BEL, SWE</i> | 0,19 | 0,78 | 0,87 | 0,4 |
| CONTINENTAL EUROPEAN CLUSTER WITH RESTRICTED PROTECTION: <i>GER, FIN, NDL, NOR</i> | 0,21 | 0,48 | 0,44 | 0,59 |
| NON-EUROPEAN CLUSTER WITH EXTENDED BASIC PROTECTION: <i>JAP, NZL</i> | 0,01 | 0,06 | 0,13 | 0,51 |
| NON-EUROPEAN CLUSTER WITH RESIDUAL BASIC PROTECTION: <i>AUS, CAN</i> | 0,05 | 0,13 | 0,09 | 0,15 |

Table 6.26: Ward Clusters of Unemployment Benefits in 2006

this cluster consists of Spain and the UK, sharing the features of easy accessibility in combination with the lowest benefits for atypical workers and minimum incomes in the sample, which have further decreased compared to 1991. Standard benefits are modest in Spain and low in the UK. Spain thus shows a distinct pattern of dualism in that benefits for part-time and fixed term workers are much lower relative to standard workers' benefits. In the UK, this is less pronounced since benefits for both types of employees are much more similar in size. In both countries, mean values of basic incomes are almost equal to first-tier benefits for atypical workers. Atypical employees are therefore not confronted with challenging qualification criteria, but cannot expect to receive substantial benefits in any case.

Continental European Cluster with Extended Protection: Austria, Denmark, Belgium, and Sweden constitute a cluster combining relatively strict access conditions with the most generous benefits, particularly for atypical employees, and a modest basic income, therefore closely resembling the former Exclusive Cluster. Denmark, Belgium, and Sweden, by and large, retained their 1991 level of benefit generosity tied to tough contribution conditions. Since accessibility declined in Austria while benefits remained high, it is newly sorted

to this group, leaving the former Inclusive Cluster. This entails, however, that no cluster exists any more that grants generous payments without demanding challenging accessibility requirements. Dualisation is primarily caused by restricted access opportunities and minimum incomes, being significantly smaller than first-tier benefits, albeit still moderate in international comparison. Generosity is thus reserved for employees with contribution records, whereas all others are provided less.

Continental European Cluster with Restricted Protection: the remaining Continental European countries of Germany, Finland, the Netherlands, and Norway form another European cluster characterised by very strict accessibility. In contrast to 1991, however, restrictive accessibility does not lead to extraordinary benefits, trailing behind those of the other Continental Cluster. Minimum incomes, surprisingly, are the highest of all clusters. This new kind of cluster has emerged because Germany and Finland, which used to have strict accessibility before, trimmed their benefits (in case of Germany very substantially), while Norway and the Netherlands cut both accessibility and benefits, thereby abandoning the former Inclusive Continental Cluster. Like in the Continental European Cluster with Extended Protection, the exclusive rules on accessibility act as

| | ACCESSIBILITY INDEX | BENEFIT INDEX FOR STANDARD EMPLOYEES | BENEFIT INDEX FOR ATYPICAL EMPLOYEES | MINIMUM INCOME |
|--|---------------------|--------------------------------------|--------------------------------------|----------------|
| MEDITERRANEAN AND ANGLO-SAXON CLUSTER <i>FRA, IRE, ITA, SWZ</i> | 0,78 | 0,32 | 0,48 | 0,31 |
| RESIDUAL MEDITERRANEAN AND ANGLO-SAXON CLUSTER: <i>SPA, UK</i> | 0,73 | 0,22 | 0,1 | 0,13 |
| CONTINENTAL EUROPEAN CLUSTER WITH EXTENDED PROTECTION: <i>AUT, DEN, BEL, SWE</i> | 0,19 | 0,78 | 0,87 | 0,4 |
| CONTINENTAL EUROPEAN CLUSTER WITH RESTRICTED PROTECTION: <i>GER, FIN, NDL, NOR</i> | 0,21 | 0,48 | 0,44 | 0,59 |
| NON-EUROPEAN CLUSTER WITH EXTENDED BASIC PROTECTION: <i>JAP, NZL</i> | 0,01 | 0,06 | 0,13 | 0,51 |
| NON-EUROPEAN CLUSTER WITH RESIDUAL BASIC PROTECTION: <i>AUS, CAN</i> | 0,05 | 0,13 | 0,09 | 0,15 |

Table 6.27: Average Normalised Values of Unemployment Benefit Clusters in 2006

the main source of dualisation; benefits do not differ much on a generally moderate level. The major difference between both clusters is the generous amount of minimum incomes, alleviating the discriminating effect of restrictive access.

Non-European Cluster with Extended Basic Protection: Japan and New Zealand still offer only residual benefits to job seekers. Nonetheless, they significantly stepped up the minimum income, leaving the cluster with Australia and Canada to form their own. Since first-tier benefits are particularly ungenerous (despite harsh qualification requirements in Japan), whereas basic protection is among the highest, dualism is no key characteristic of this cluster.

Non-European Cluster with only Residual Basic Protection: Australia and Canada have very low values in any category.

Compared to the clusters of 1991, the negative correlation of benefits for standard workers and accessibility rules reappears in a reinforced way, as the former Inclusive Continental Cluster has given way to new Continental groups with more restricted access. In Continental Europe, generous benefits therefore must now be acquired through longer contribution records. Unchanged is that exclusive accessibility rules

are often accompanied by more generous minimum income schemes as apparent in the Continental as well as Mediterranean and Anglo-Saxon Clusters. Benefits for atypical employees remain similar to those for standard employees (although this relation may have weakened since in the Mediterranean and Anglo-Saxon Cluster the indices show higher scores for atypical employees' benefits). Yet there is one tentative new trend: among the Mediterranean, the Continental, and the Non-European Clusters, it is always the cluster with higher accessibility that also offers higher benefits to atypical employees. Accessibility may thus have become positively related to benefits for atypical employees.

Dualism comes in three different guises in 2006. On a high level, the Continental Cluster with Extended Protection provides the most generous benefits, but targets them precisely on standard workers. Atypical employees will often find themselves excluded because accessibility rules are tight and minimum incomes are significantly less than first-tier benefits. The Continental Cluster with Restricted Protection is less dualised, even though accessibility is equally restrictive, since first-tier benefits and basic incomes are closer to each other. This is beneficial for atypical workers who fail to qualify, but is achieved at the price of lower insur-

| | ACCESSIBILITY INDEX | BENEFIT INDEX FOR STANDARD EMPLOYEES | BENEFIT INDEX FOR ATYPICAL EMPLOYEES | MINIMUM INCOME |
|--------------------------------------|---------------------|--------------------------------------|--------------------------------------|--------------------|
| ACCESSIBILITY INDEX | | -0.046** (0.021) | 0.049*** (0.018) | 0.005** (0.002) |
| BENEFIT INDEX FOR STANDARD EMPLOYEES | -0.053 (0.14) | | 0.776*** (0.036) | 0.804 (0.005) |
| BENEFIT INDEX FOR ATYPICAL EMPLOYEES | 0.058 (0.159) | 0.977*** (0.046) | | 0.007 (0.006) |
| MINIMUM INCOME | -3.171** (1.546) | -0.547* (0.305) | 0.919*** (0.345) | |
| INTERCEPT | 7.425*** (0.953) | 1.25*** (0.221) | -0.356*** (0.129) | 0.447*** (0.02) |
| ADJ. R ² | 0,8 | 0,96 | 0,95 | 0,81 |
| N | 299 | 299 | 299 | 299 |

Table 6.28: Regression Results for Unemployment Benefits

ance-based payments. On a low level, it is the Residual Mediterranean and Anglo-Saxon Cluster, and therein mainly Spain, that are showing signs of dualism. While first-tier benefits are much more accessible than in Continental Europe, they are lower for atypical than for standard employees (in spite of a generally low level for both types of employees). Minimum incomes, too, are stingy. That is, atypical employees must expect to receive only small support, no matter whether they are eligible to first-tier benefits or not. Strong dualisation is avoided, by contrast, in the other Mediterranean and Anglo-Saxon Cluster, by granting broad access with relatively high benefits to atypical employees in combination with moderate basic incomes, offering support especially to the more vulnerable group of part-time and temporary employees. The overall level of generosity is only very modest, however.

Any cluster analysis is only capable of giving a descriptive overview of how countries configured their social policy arrangements and how these configurations have changed over time. To obtain more conclusive results on general trends in configuration patterns, I perform four multivariate panel data analyses across all countries and years in the data set, each of the indices being the dependent variable in one estimation, having the other three indices regressed on it. It is important

to stress that this is not intended to be an analysis of the underlying societal, political, or economic reasons of unemployment benefit reform, but only serves a heuristic purpose of identifying common patterns in the configuration of social protection arrangements. Hence, adopting the same method as Nelson (2007b), I perform a simple regression including neither fixed nor time effects nor a lagged dependent variable; instead, I correct for serial correlation by a Prais-Winsten transformation with country specific AR-terms. Standard errors are panel corrected (Beck / Katz 1995).

When accessibility is the dependent variable, results show that, as expected, minimum income exerts a strongly negative influence, thereby confirming the impression gained from clustering that basic income protection serves as functional equivalent for job seekers ineligible to unemployment benefits. That is, if dualism decreases by rising minimum incomes, it has the inherent propensity to create more dualism on part of the accessibility rules. Unexpectedly, the coefficient of benefits for standard employees is low and insignificant, even though the sign shows in the expected negative direction. The coefficient of benefits for atypical employees is positive but also insignificant. Throughout the whole period, there is thus no support that accessibility is determined by the generosity of first-tier benefits.

Turning to benefits for standard employees, the most striking result is that they are most strongly and significantly influenced by benefits for atypical employees which is in line with observations from the cluster analysis. Countries raising support to standard workers evidently tend to do so—almost in equal scale—for atypical workers as well. There is also a weak negative but significant impact of accessibility which needs to be highlighted because, when the same regression was run with accessibility as dependent variable, the coefficient was insignificant. This further corroborates the interpretation derived from the cluster analysis that there is a slight trend in the time series to more directly link the generosity of benefits to the strictness of access requirements. Yet it seems that it is the benefits being adjusted according to changing accessibility rather than the other way round. The coefficient of minimum income is negative, though significant only on the ten percent level, leading to the conclusion that high benefits are targeted on standard workers, thereby creating dualism in two dimensions: first, by exclusion through stricter access requirements and, second, by small minimum incomes. Compared to the coefficient of benefits for atypical employees, the effects of accessibility and minimum incomes are tiny, however. It is thus the benefits for atypical workers that is predominant in the determination of benefits for standard employees.

Once benefits for atypical employees is made the dependent variable, all coefficients are positive and highly significant. This shows, on the one hand, that benefits for both kinds of workers share a reciprocal positive relationship, refuting the hypothesis that dualism generally manifests itself in smaller amounts and shorter duration for atypical workers. On the other hand, it reveals one key difference compared to standard benefits: while these are higher when they are targeted, i.e. when accessibility and minimum incomes grow more restrictive, benefits for atypical employees increase in parallel to more generous accessibility and basic income support, with the effect of latter parameter outweighing all others, whereas accessibility's influence is nearly as weak as on standard employees' benefits. Nonetheless,

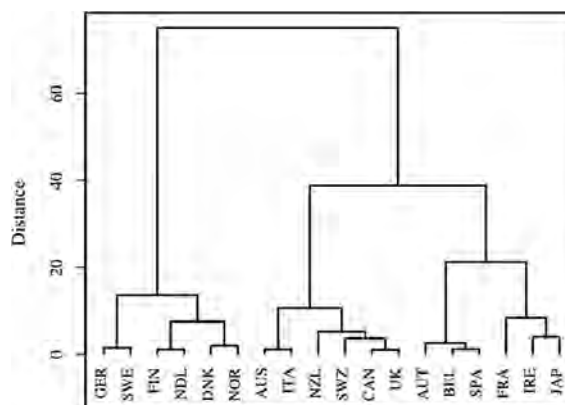


Table 6.29: Ward Clusters of Sickness Benefits in 1991

the impression is confirmed that benefits for atypical workers are determined based on a partly different logic: rather than targeting entitlements, higher benefits are granted to atypical employees if all other support is generous as well.

The regression with minimum income as dependent variable displays the same pattern as with accessibility. Only access criteria exert a significant negative influence, further confirming that both variables are interdependent and act as functional equivalents. Amount and duration of unemployment benefits have no impact on the generosity of basic incomes.

6.6.3. CONFIGURATION OF SICKNESS BENEFITS

This section repeats the cluster analysis of the previous section, but performs it on sickness benefits. The method employed is the same. For the year 1991, each algorithm creates equal results once the number of clusters exceeds ten; for smaller numbers of clusters, however, the proposed solutions diverge. Only the Ward Method and Complete Linkage yield the same results for solutions with five clusters or fewer. According to the Calinski-Harabasz stopping rule, there is just one unambiguous choice: the five cluster solution returned by the Ward Method and Complete Linkage is deemed best. Other possible solutions contain seven or more clusters, exceeding the maximum limit of six clusters, and are therefore disregarded.

| | ACCESSIBILITY INDEX | BENEFIT INDEX FOR STANDARD EMPLOYEES | BENEFIT INDEX FOR ATYPICAL EMPLOYEES | MINIMUM INCOME |
|--|---------------------|--------------------------------------|--------------------------------------|----------------|
| CLUSTER 1: HIGH ACCESSIBILITY, HIGH BENEFITS, HIGH MINIMUM INCOME: GER, SWE | 0,96 | 0,9 | 0,9 | 0,65 |
| CLUSTER 2: HIGH ACCESSIBILITY, MODERATE BENEFITS, HIGH MINIMUM INCOME DEN, FIN, NDL, NOR | 0,85 | 0,46 | 0,58 | 0,67 |
| CLUSTER 3: HIGH ACCESSIBILITY, MODERATE BENEFITS, LOW MINIMUM INCOME: AUT, BEL, SPA | 0,79 | 0,6 | 0,53 | 0,28 |
| CLUSTER 4: MODERATE TO HIGH ACCESSIBILITY, LOW BENEFITS, MODERATE MINIMUM INCOME AUS, CAN, ITA, NZL, SWZ, UK | 0,63 | 0,11 | 0,11 | 0,34 |
| CLUSTER 5: LOW ACCESSIBILITY, LOW TO MODERATE BENEFITS, MODERATE MINIMUM INCOME: FRA, IRE, JAP | 0,08 | 0,65 | 0,33 | 0,33 |

Table 6.30: Average Normalised Values of Sickness Benefit Clusters in 1991

Compared to the pattern that emerged with unemployment benefits, the clusters for sickness benefits are notably less clear-cut and cannot be classified according to conventional geographical or cultural affiliations. Sick pay clusters are thus labelled by their core features instead of their geography (see tables 6.28 and 6.29).

*Cluster 1: High accessibility, high benefits, high minimum income:*¹⁵ the smallest and most generous cluster contains only Germany and Sweden, providing nearly universal access to sick pay with the highest benefits of all countries in the sample for both standard and atypical employees. Minimum income protection, too, is among the highest. This cluster is split from cluster two as benefits are dramatically higher than in any other observed country. Accessibility and minimum incomes, however, strongly resemble those of cluster two. Dualism is only a concern insofar as minimum incomes—despite their high level—do not reach the same scale as first-tier benefits.

Cluster 2: High accessibility, moderate benefits, high minimum income: this cluster comprises Denmark, Fin-

land, the Netherlands, and Norway. Its features are very similar to those of cluster one except that benefits are significantly smaller, particularly for standard workers. Minimum incomes reach the same top level as in cluster one, even surpassing the values of sick pay. Therefore, dualism is barely recognisable.

Cluster 3: High accessibility, moderate benefits, low minimum income: Austria, Belgium, and Spain form a cluster of their own due to their very low level of minimum income, separating them from clusters one and two. Apart from that, this cluster shares with the previous two a high level of accessibility and moderate benefits. However, Austria, Spain, and Belgium are on average somewhat more generous towards standard employees than cluster two. There is thus a certain degree of dualisation, not only because of the differences in benefits, but also since, despite the openness of the benefit, those who do not qualify receive significantly lower minimum incomes.

Cluster 4: Moderate to high accessibility, low benefits, moderate minimum income: The largest cluster includes Australia, Canada, Italy, New Zealand, Switzerland, and the UK. They all have in common that all first-tier benefits are the lowest in the data set for that year. The same

15 Cluster averages are classified low if its value is below 0.33, classified moderate if it is between 0.33 and 0.66, and classified high if it is above 0.66.

holds for minimum incomes. Accessibility, by contrast, shows a higher intra-cluster variance than the other variables. On average, it is more restrictive than in clusters one to three, yet still more open than cluster five. Australia and Italy deviate from the cluster mean by notably higher levels of accessibility; Canada, on the other hand, swings to the other end of the spectrum with a value significantly below the average. Since there is a great conformity regarding all other variables, however, I decided not to split up this cluster any further. There is some dualism in this cluster stemming from restricted access in some countries, but it is mitigated by the universally low level of benefits (relative to other countries in this year) and moderate minimum income.

Cluster 5: Low accessibility, low to moderate benefits, moderate minimum income: France, Ireland, and Japan are quite distinct from the other clusters in their markedly reduced accessibility combined with moderate benefits for standard employees and low benefits for atypical ones. Hence, this cluster is the only one to show a clear dualisation in terms of differences in benefits to the detriment of atypical workers. Further dualisation can also be found in restrictive access criteria, leading to the interpretation that more generous benefits are targeted to standard workers. Some dualisation also comes from minimum incomes, reaching lower scores than benefits for standard employees.

Notable is the difference between unemployment and sickness benefits regarding the relationship of accessibility and minimum income. In all clusters (other than cluster three) strict qualification criteria are not linked to more extensive basic incomes and *vice versa*, but instead the correlation between both indices seems to be positive. Therefore, access to sick pay and minimum income apparently do not serve as functional equivalents. With regard to other variables, however, patterns known from unemployment benefits re-emerge. First, benefits for standard and atypical workers seem to be quite similar in general, although a pronounced form of dualisation can be detected in cluster five, favouring standard workers, whereas in cluster two atypical employees are somewhat better off. Second, more inclusive rules on

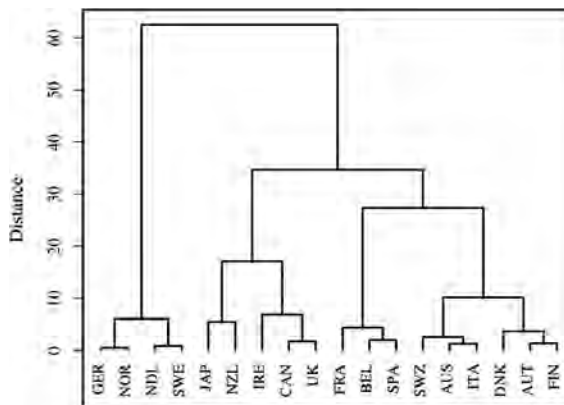


Table 6.31: Ward Clusters of Sickness Benefits in 2006

accessibility are combined with higher benefits for the atypically employed. Summed up, all factors primarily favouring fixed term and part-time employees, i.e. easy accessibility, generous benefits for atypical employees, and a high minimum income, seemed to share a generally positive relationship in 1991; the relation between standard benefits and other indices remains obscure.

In the year 2006, deciding on the optimal number of clusters is more complicated. The Calinski-Harabasz stopping rule prefers the three, six or seven cluster solutions given both by the Ward Method and Complete Linkage. While the three cluster solution intuitively seems most appealing due to its parsimony, a closer look reveals that the small number of clusters comes at the cost of oversimplification. Australia, Belgium, France, and Spain are lumped together in one cluster even though these countries show significant variance in their levels of benefits and accessibility. Six and seven clusters, as otherwise suggested solutions, are quite many considering that only 18 countries are included, directing our focus to alternative solutions even if, according to the Calinski-Harabasz rule, these appear less preferable. One potential candidate in this respect is the five cluster solution returned by all algorithms other than Complete Linkage. For Average Weighted Linkage this also the optimal solution and the second best for Average Unweighted Linkage. Nonetheless, compared to the other outcomes just described, the five cluster solution does rather poorly if assessed by the Calinski-Harabasz rule, still I argue that it is the best option

to choose. First, it facilitates comparison with the year 1991 as the number of clusters stays the same. Second, the six cluster solution, which was evaluated best by the Calinski-Harabasz rule, and the five clusters solutions are largely identical with the only difference being that, in the six cluster solution, Austria, Denmark, Finland on one side and Australia, Italy, Switzerland on the other side are split up in two separate clusters based only on their disparities in the size of benefits. These are not too big, however. In the former three countries, benefits are moderate at best, while in the latter they are low. Therefore, taking the mean of all six countries does not obscure too much of the variance, making it reasonable to pool them in one single cluster. The clusters are labelled in the same way as in 1991 (see tables 6.30 and 6.31).

Cluster 1: High accessibility, moderate to low benefits, moderate minimum income: this cluster is the biggest, consisting of Australia, Austria, Denmark, Finland, Italy, and Switzerland. It is comparable to cluster four of the year 1991, of which it retains its members Australia, Italy, and Switzerland which have not profoundly reformed their sickness benefit schemes. Denmark and Finland newly joined the cluster by significantly decreasing their minimum incomes; Austria did the opposite. Given almost universal access and a minimum income moderate by international standards, dualism is weak in this cluster.

Cluster 2: High accessibility, high benefits, high minimum income: this cluster used to include only Germany and Sweden in 1991 but was by 2006 extended to comprise Norway and the Netherlands as well. This is not, however, because more countries have become as generous as Germany and Sweden 15 years earlier—actually, only the Netherlands have done so. Instead, other countries have become less generous. As to this cluster, Sweden exhibits the same generosity as in 1991, while Germany's rules have grown tighter; Norway's stayed constant. Just like before, dualism is apparent only in minimum incomes not matching the extraordinary generosity of first-tier benefits.

Cluster 3: Moderate accessibility, moderate to high benefits, low minimum income: Belgium, France, and

Spain constitute a cluster closely resembling cluster number three of 1991, albeit with more restrictive qualification requirements. The only shift is Austria with rising benefits being assigned to a new cluster and replaced by France. Dualism thus stems from tougher contribution requirements and the second lowest mean minimum income, far below the level of benefits for standard employees.

Cluster 4: Low accessibility, low benefits, low minimum income: this kind of cluster did not exist in 1991 and comprises Canada, Ireland, and the UK. It is formed primarily because these countries have cut their minimum incomes parallel to some expansions in accessibility and benefits, granting higher benefits to atypical employees than to standard ones. These expansions, however, do not suffice to sort them into any of the more generous clusters. Given the generally low levels of support, first-tier benefits do not deviate much from minimum incomes, the latter being the lowest of all clusters, thereby creating dualism primarily by tight access rules.

Cluster 5: Low accessibility, low benefits, high minimum income: Japan and New Zealand raised their minimum incomes by so much that they form a new cluster of their own in which restricted accessibility and low benefits are compensated by a very accommodating basic income support. There is nonetheless a sharp contrast between standard and atypical employees' benefits, implying high dualisation in the realm of first-tier benefits and accessibility.

Contrasted with the clusters of 1991 there is clearly visible a downward trend in generosity concerning all observed variables. Yet, albeit on a generally reduced level, the same correlations hold as before: benefits for standard and atypical employees are often very similar, access and minimum income share a positive association as do access and benefits, particularly for atypical workers. An exception is cluster five, but it contains only two countries. As was done for unemployment benefits, a regression analysis follows to add more analytical evidence to the descriptive results.

The method employed is the same as for unemploy-

| | ACCESSIBILITY INDEX | BENEFIT INDEX FOR STANDARD EMPLOYEES" | BENEFIT INDEX FOR ATYPICAL EMPLOYEES | MINIMUM INCOME |
|---|---------------------|---------------------------------------|--------------------------------------|----------------|
| CLUSTER 1: HIGH ACCESSIBILITY, MODERATE TO LOW BENEFITS, MODERATE MINIMUM INCOME <i>AUS, AUT, DEN, FIN, ITA, SWZ</i> | 0,89 | 0,27 | 0,31 | 0,38 |
| CLUSTER 2: HIGH ACCESSIBILITY, HIGH BENEFITS, HIGH MINIMUM INCOME: <i>GER, NDL, NOR, SWE</i> | 0,83 | 0,77 | 0,82 | 0,59 |
| CLUSTER 3: MODERATE ACCESSIBILITY, MODERATE TO HIGH BENEFITS, LOW MINIMUM INCOME: <i>BEL, FRA, SPA</i> | 0,48 | 0,68 | 0,61 | 0,21 |
| CLUSTER 4: LOW ACCESSIBILITY, LOW BENEFITS, LOW MINIMUM INCOME: <i>CAN, IRE, UK</i> | 0,26 | 0,09 | 0,23 | 0,17 |
| CLUSTER 5: LOW ACCESSIBILITY, LOW BENEFITS, HIGH MINIMUM INCOME: <i>JAP, NZL</i> | 0,08 | 0,31 | 0,02 | 0,51 |

Table 6.32: Average Normalised Values of Sickness Benefit Clusters in 2006

ment benefits. Results, however, differ in some respects (see table 6.32). Accessibility is strongly influenced by minimum income whose positive significant coefficient confirms the descriptive impression that, in the area of sickness benefits, accessibility and minimum income do not act as functional equivalents. This is the most striking difference in results between unemployment and sickness benefits. The coefficients of the benefit variables generally correspond to those in the analysis of unemployment benefits. Benefits for atypical employees have a positive sign and twice the effect as benefits for standard workers whose sign is negative. This lends support to the results of the cluster analysis that benefits for atypical employees and accessibility are positively linked. For atypical workers these findings are likely to translate into more dualism if accessibility is tight because in this case restricted openness is not mitigated by greater basic incomes, nor is it rewarded by more generous benefits. Standard workers, by contrast, can expect to receive higher payments once they meet the criteria.

If benefits for standard workers enter the regression as a dependent variable, all regressors turn out to be significant. The coefficient of benefits for atypical employees points in a positive direction as expected from clustering. The sign of minimum income is positive too, running counter to the results of unemployment

benefits. Only the coefficient of accessibility is negative, confirming the pattern already observed when accessibility was the dependent variable. Another difference compared to unemployment benefits is that accessibility exerts a much stronger influence, while the effect of atypical benefits and minimum income is markedly lower. Targeting is thus a more predominant trend in the provision of sick pay than in unemployment benefits since changes in accessibility more than offset changes in benefits for atypical employees.

The evidence on the positive relationship between both kinds of payments is further bolstered once benefits for atypical employees are used as an outcome variable. The impact of benefits for standard workers seems to have a much stronger positive impact on benefits for atypical ones than the other way round. Very strong and positive is also the effect accessibility takes on benefits for part-time and fixed term workers. There is thus a parallel between unemployment and sickness benefits in that both schemes tie more generous benefits for standard workers to more challenging access criteria, whereas atypical employees' benefits even seem to decrease if access becomes more exclusive. It must be emphasised, however, that benefits for both standard and atypical employees generally rise in line with each other, thereby potentially outweighing

| | ACCESSIBILITY INDEX | BENEFIT INDEX FOR STANDARD EMPLOYEES | BENEFIT INDEX FOR ATYPICAL EMPLOYEES | MINIMUM INCOME |
|--------------------------------------|----------------------|--------------------------------------|--------------------------------------|---------------------|
| ACCESSIBILITY INDEX | | -0.225 *** (0.074) | 0.613 *** (0.155) | -0.00007 (0.004) |
| BENEFIT INDEX FOR STANDARD EMPLOYEES | -0.12 * (0.072) | | 0.489 ** (0.193) | 0.008 ** (0.003) |
| BENEFIT INDEX FOR ATYPICAL EMPLOYEES | 0.266 *** (0.041) | 0.183 ** (0.075) | | 0.002 (0.002) |
| MINIMUM INCOME | 1.9 ** (0.944) | 1.382 ** (0.649) | -0.557 (0.847) | |
| INTERCEPT | 5.779 *** (0.464) | 5.528 *** (0.784) | -2.242 (1.774) | 0.4 *** (0.038) |
| ADJ. R ² | 0,85 | 0,82 | 0,66 | 0,78 |
| N | 299 | 299 | 299 | 299 |

*p < 0.1 **p < 0.05 ***p < 0.01 Standard errors in parantheses

Table 6.33: Regression Results for Sickness Benefits

accessibility's impact on either of the variables. Yet this is not the case. The influence both benefit variables exert on each other is not large enough to compensate for the effect of changes in accessibility, but merely slows the divergence. In summary, tightening accessibility results in higher benefits towards standard employees and lower benefits towards atypical workers. An influence of minimum income on benefits for the atypically employed is not discernible.

Unlike unemployment benefits, minimum income

is apparently not affected by the evolution of access criteria, but only by the generosity of benefits for standard employees whose coefficient is positive and significant. All other regressors are insignificant. As with unemployment benefits, minimum income appears to be remarkably unaffected by other social protection schemes. Minimum income and access to sickness benefits seem not to be functional equivalents. Rather, sick pay and minimum income are perceived as two schemes serving the same purpose of supporting those in need.

7. SOCIAL PROTECTION AND THE SERVICE ECONOMY

Labour markets in developed countries have been characterised for decades by an ever growing share of jobs in the tertiary sector. The reasons for this shift were discussed in detail in chapter 3. The rise of service jobs, however, is no uniform trend that unfolds in the same manner in all industrialised economies. Rather, there is a magnitude of distinct paths towards more service employment (as outlined in the introduction) whose economic parameters differ widely. Some countries display a preponderance of jobs in private service sectors (such as retail and catering) while others chose to opt for a higher share of welfare services instead (such as various health care services and education). A few countries also managed to retain a relatively larger number of jobs in manufacturing. This marked variation can be explained by differences in the design of institutions shaping the economic environment in each country and thus business segments and strategies that firms select to engage in. This chapter examines to what extent institutions and economic policies impact on job shares of various economic sectors. A particular focus of the examination will be on the influence of unemployment benefits, sickness benefits, and minimum income protection schemes. Before I discuss the specific labour market impacts of distinct institutions, a brief review is given on the basic mechanisms governing the fundamental shift to service employment.

7.1 THE SERVICE ECONOMY TRILEMMA

Most thinking on service jobs is based on Baumol's (1967, 2007) famous notion of 'cost disease'. His theory mainly draws on the supply side arguments described in chapter 3; namely, that manufacturing regularly reaches a high level of productivity growth, whereas in

services the scope for similar increases is more limited. If in a two sector economy output shares of industry and services are assumed constant, the divergence of productivity growth therefore leads to a higher proportion of total employment being absorbed by the less productive service sector. In practice, however, this shift is not going to take place without frictions. Baumol notes that wages in services have risen more strongly in the past than their poor record of productivity growth would have justified. The underlying reason stated by Baumol why wages have not diverged as much as productivity is that any incentive would be lost to go for a career in the tertiary sector if wages in services fell too far below the standard in manufacturing. Wages above productivity are thus a necessary condition of retaining a number of staff sufficient for the provision of services. As a result, services will either become too costly relative to manufactured goods, thereby effectively stifling demand for tertiaries, or, alternatively, service quality will decline as providers try to cut back on the number of personnel in order to stay affordable for customers. This is what Baumol labelled as 'cost disease'.

One upshot of the 'cost disease' then is that the expansion of tertiary jobs is hindered by excessive wage hikes, decoupling pay from productivity. If the service sector is to absorb all redundant manufacturing workers, wages must be aligned more closely with real labour efficiency. More tertiary employment consequently comes at the cost of a yawning gap in earnings opportunities between industry and services. For former industrial workers, it is thus likely to feel as social relegation if they have to take on a new, probably badly remunerated job in services.

Iversen and Wren (1998) see three ways how governments can decide given this economic background, yet none of these ways is fully satisfying in that each

has one specific drawback. More precisely, governments are confronted with a «service economy trilemma», i.e. a decision between three aims only two of which can be achieved simultaneously. These aims are employment, a low tax burden (or low public debt), and income equality. The liberal way to decide in this trilemma is to prioritise employment and small taxes over equality. This entails that the earnings differential between manufacturing and services is allowed to play out in full, creating a sufficient number of service jobs to keep unemployment down, while the burden on the public purse remains small. The social-democratic way, by contrast, expands service employment primarily through a larger public sector (i.e. mostly jobs in welfare services such as day care or health) where pay on average is higher than in private services, hence preserving high income equality. This must be paid for, however, by heavy taxes. The Christian-democratic way, finally, is to either accept rising unemployment or to restrict the size of the labour force (for example by discouraging mothers from work or by early retirement schemes) in favour of relative earnings equality and low taxation.

More recently, Wren, Fodor, and Theodoropoulou (2013) have provided evidence that the trilemma might be less inescapable than it initially seemed. They argue that, by the use of advanced information and communication technology (ICT) and better possibilities to trade services internationally, specific segments of advanced services (such as finance or business services) achieve levels of productivity growth comparable to manufacturing or even higher. This may open a route to enhanced private service employment without the accompanying need to allow for gaping earnings differentials. By promoting job growth in high productivity services, the trilemma may be avoided and all three aims—employment, earnings equality, and a low tax burden—may be achieved at the same time.

The number of jobs in high productivity services is highly contingent, however, on the particular skill structure prevalent in an economy (Wren 2013:27 et sqq.). ICT can be very effectively used to substitute routine tasks for which only a medium skill level is necessary.

For more challenging cognitive tasks relying on «flexibility, creativity, generalized problem solving, and complex communications» (Autor et al. 2003: 5), it rather acts as a complement helping college-educated employees reach higher standards of productivity (Acemoglu / Autor 2011, Goos / Manning / Salomons 2009). Broad incidence of college education among employees with its typical focus on more general skills is hence a necessary condition for a strong development in high-end services. Economies whose educational systems are primarily committed to teaching industry- or firm-specific skills on a medium level, as they have been conducive for numerous manufacturing occupations, are likely to see a less marked growth in high productivity services.

This illustrates that the distribution of employment shares over various economic sectors is not only a function of productivity differentials. Services are a diverse category whose single segments vary strongly in degrees of productivity, proportions of public versus private provision, and educational requirements. The institutional environment within which service providers operate can have a huge direct or indirect impact on the fact which type of service expands in terms of jobs created. Apart from the education system, political economy literature also suggests it is the extent to which the state itself engages to provide services, the social protection offered to different types of workers, and unions' bargaining power which substantially affect an economy's employment structure. It is the influence of these institutions, particularly of social protection, on the development of employment shares that I scrutinise in this chapter. Therefore, I define the share of the labour force pertaining to distinct segments of the economy as my dependent variable and try to explain it by a variety of institutional variables while controlling for productivity. The underlying causes of disparities in productivity (e.g. technical innovation, ICT, international trade) are not the subject I analyse here; I treat the level of productivity as exogenous and focus exclusively on institutions.

In order to develop hypotheses about the impact of institutions on distinct segments of the economy, it is necessary to understand each segment's specific eco-

economic and organisational features, particularly with regards to wage structures, educational requirements, and the organisation of work; only then will it be possible to make assumptions as to how specific institutions might foster or interfere with job growth in selected sectors. The next section therefore introduces a division of the economy into four segments, each of which is going to be analysed separately later in this chapter, and describes in detail the individual characteristics of each.

7.2 CHARACTERISTICS OF FOUR ECONOMIC SEGMENTS

Modelled after Wren / Fodor / Theodoropoulou (2013), I divide the economy into four segments each of which has distinct characteristics: manufacturing (ISIC¹ category D), non-dynamic services (trade, repair, hotels and restaurants, other personal services: ISIC category G, H, O), dynamic services (financial intermediation, real estate, business services: ISIC category J, K), and welfare services (public administration, education, health and social services: ISIC category L, M, N)².

I distinguish the characteristics of each segment based on three criteria. The first is the *income level* which is—with one exception—highly contingent on labour productivity. According to Baumol (1967, 2007) and Autor (2003), labour productivity is high in manufacturing, allowing more generous remuneration for employees. Non-dynamic services, essentially based on human interaction, do not hold the same potential to raise productivity, as reflected in a generally low wage floor. The productivity of dynamic services, by contrast, recently has seen a dramatic boost in productivity induced by heavy ICT investment, taking remuneration

to a level similar to that of manufacturing. The exception is welfare services where pay is significantly exceeding productivity, since they are largely provided by the state. The second criterion is the *dependence on atypical employment*, which is substantially higher in all kinds of services than in manufacturing, to cope with increased operational flexibility (see chapter 2). Finally, *skill requirements* vary widely across segments; while manufacturing is dependent on firm- and industry-specific skills, service occupations usually rely on broader and more general skills.

Manufacturing: The skill structure is the key idiosyncrasy of manufacturing. Since the Fordistic mass production of simple goods has been either relocated to low wage countries or taken over by more advanced machines, manufacturers need to specialise on production of high-value goods that remain profitable even in a high wage, high productivity environment. Such a high-value product can come about in many different shapes. It may involve, among other things, intricate technological refinement, precise customisation, extraordinary quality, or faster delivery (Appelbaum 2000). One coherent strategy to raise the value of industrial goods, called diversified mass production (DMP), has been adopted by Japanese firms capable of churning out a huge variety of different goods in great numbers. Examples are the Japanese car industry and makers of domestic electronic appliances (Estevez-Abe / Iversen 2003). Another strategy towards higher value production is to slightly move away from mass production and to focus more on customised, high-quality goods, demand for which is limited to small, yet lucrative niche markets. This strategy of diversified quality production (DQP) is epitomised by German manufacturers (Streeck 1992).

Both strategies have in common that they are highly dependent on a specifically trained workforce familiar with all production lines and capable of quickly adjusting to changes in routines. Furthermore, they need to have extensive craft skills to guarantee that products retain a high quality standard and must be able to solve occurring problems during the production process. They may also be required to exchange information

1 International Standard Industrial Classification of All Economic Activities, Rev. 3.1. For details see United Nations (2002).

2 I decided to alter the classifications in one point. Transport, storage and communication (ISIC category I) were added by Wren / Fodor / Theodoropoulou to the segment of dynamic services. Due to their close conjunction with manufacturing, however, I chose to exclude these items from the analysis.

| | |
|---|------|
| Manufacturing | 1 |
| Non-dynamic services | 0.61 |
| Trade | 0.67 |
| Hotels and Restaurants | 0.48 |
| Other Community, Social, Personal services | 0.58 |
| Dynamic Services | 1.58 |
| Finance | 1.92 |
| Real Estate and Business Activities | 1.5 |
| Welfare Services | 0.7 |
| Education | 0.71 |
| Health | 0.63 |

Table 7.1: Productivity Relative to Manufacturing in 2006 (Averaged over 19 Countries) Source: OECD STAN Database for Structural Analysis, own calculations

with customers and management as to how the offered goods could be further improved and efficiency in production enhanced. The skills needed to fulfil these tasks are therefore highly specific to certain industries or even single firms. Estevez-Abe and Iversen (2003), Iversen (2005), and Anderson / Hassel (2013) distinguish three types of skills: *general skills* are highly portable across firms, occupations, and industries enabling employees to switch jobs easily across a far range of sectors, whereas *industry-specific skills* have market value only in one particular branch of the economy. *Firm-specific skills* go one step further than industry-specific skills in that they can be utilised in only one single company and have no value for any other firm. The acquisition of specific skills is reaffirmed by the design of training regimes. Anderson and Hassel (2013) identify school-based and workplace-based occupational training systems; in the former, the state runs vocational schools providing training whose content is set in cooperation with the social partners. Employers, on their part, do not invest in training on large scale, resulting in a training system that imparts mainly industry-specific skills. In workplace-based occupational training systems most training happens inside the firm which employs its apprentices and hence bears most of the costs of training. In return, the firm can set major parts of training contents

and tailor training programmes closely to its needs. The focus is thus to provide for firm-specific skills. In reality, however, almost all systems are a mixture of school- and workplace-based training, with each system leaning more towards either side. Although both concepts cannot be strictly kept apart empirically, the distinction is nonetheless important since it is firm-specific skills that play a vital role in shaping an economy's ability to sustain a large manufacturing sector. Therefore, *specific skills* is hereafter defined to denote only firm-specific skills.

Anderson and Hassel (2013) have dealt very specifically with the impact of training regimes on manufacturing shares, analysing 18 countries in the year 2005. One substantial result is that workplace-based training systems imparting specific skills lead to more employment in manufacturing, whereas countries with more school-based systems show larger proportions of service jobs. Interestingly, current enrolment in workplace-based training does not correlate with today's share of manufacturing, but with that of the 1970s. The authors conclude from this result that firms retain their specifically trained, highly productive workforce as long as possible and therefore remain competitive in global competition without pursuing extensive labour-saving strategies. More general skills, by contrast, allow for a higher fluctuation of the workforce and facilitate the transition to a service economy. Nickell, Redding, and Swaffield (2002) also confirmed the importance of education within the context of deindustrialisation, even though they are not primarily concerned with the specificity of skills. In their study on 14 developed countries between 1974 and 1994 they found a positive long-run relationship of the abundance of men with medium skills on the share of manufacturing in total GDP. There is also a strong long-run relationship between the number of men with tertiary education and growth of business services, thus bolstering the assumption that dynamic services are more reliant on higher education. Empirical results thus support the hypothesis that the skill structure prevalent in the workforce can strongly contribute to a flourishing manufacturing sector that

is better able to defy the trend of deindustrialisation and to maintain a large employment share if there is sufficient provision of medium, preferably firm-specific skills.

In the context of skill structures it becomes clear why a high number of standard jobs is conducive to the total share of manufacturing workers. Specific training requires high investments on both the employer's and the employee's part, yielding a higher return if the employee works full-time. Such investments may not pay off if the worker is employed for only a few hours per week or a short time span. Specific training is thus likely to happen only if it is accompanied by a large number of stable standard jobs (Kleinknecht / van Schaik / Zhou 2014, Vergeer et al. 2015). Yet even if no specific skills are required, many industrial firms will be inclined to prefer standard over atypical jobs. This is because their machinery operates most efficiently if used in a steady way, avoiding sporadic ups and downs in production as far as possible. Therefore, the need for flexible part-time and fixed term workers is reduced (for a theoretical model see Deardorff / Stafford 1976). As a result, atypical employment is less prevalent in manufacturing. In 2007, the mean fraction of part-time employment across all European countries in the data set was only about 10% in manufacturing, but between 27% and 34% in non-dynamic services, between 15% and 22% in dynamic services, and between 15% and 35% in welfare services. With regards to fixed term jobs, manufacturing has a share of 9%, non-dynamic services have a share between 11% and 17%, dynamic services of 6% and 10%, and welfare services between 11% and 15% (see chapter 2). The greatest discrepancy between manufacturing and services is therefore in part-time employment which is much more common in services, whereas fixed term work is only slightly more frequent (and in dynamic services even less frequent). Policies encouraging atypical employment are thus unlikely to increase the share of total jobs in manufacturing.

Whatever the prevalent skill or employment structure, due to capital intensity and international trade, labour productivity in manufacturing is, at least, for

| | |
|--|------|
| Total Economy | 1 |
| Manufacturing | 1.21 |
| Non-dynamic Services | 0.75 |
| Trade | 0.81 |
| Hotels and Restaurants | 0.57 |
| Other Community, Social, Personal Services | 0.76 |
| Dynamic Services | 1.17 |
| Finance | 1.88 |
| Real Estate | 0.94 |
| Renting of Machinery And Equipment | 1.04 |
| Computer Services | 1.54 |
| Research and Development | 1.43 |
| Other Business Activities | 0.92 |
| Welfare Services | 1.06 |
| Public Administration | 1.48 |
| Education | 1.29 |
| Health | 0.98 |

Table 7.2: Work Compensation Relative to Total Economy in 2006 (Averaged over 19 Countries) Source: OECD STAN Database for Structural Analysis, own calculations

the time being, always higher than in non-dynamic and welfare services. In 2006, the unweighted mean of labour productivity in non-dynamic services across all countries in the data set was 40% lower than in manufacturing; in welfare services the difference was 30%. In no single country did productivity in non-dynamic and welfare services reach a higher level than in manufacturing. Only dynamic services are on average more productive (see table 7.1). Manufacturing has thus a potential for markedly higher wages than most segments of services. Indeed, as can be seen from table 7.2, mean labour compensation in manufacturing was 21% higher than in the total economy.

Non-dynamic services: This category comprises all such services primarily provided by the private market and characterised by a low level of labour productivity, including hotels and restaurants (48% of manufacturing productivity), other community, social, and personal services (58% of manufacturing productivity) and trade

(67% of manufacturing productivity). Investments in ICT so far do not hold the potential of increasing productivity to an extent matching productivity growth in manufacturing, since non-dynamic services are essentially based on interpersonal interaction which is barely complemented by new technology (Autor et al. 2003). As Wren (2013) estimates, ICT capital on average contributed only 0.26 percentage points to value added growth in hotels and restaurants and 0.41 percentage points in retail trade between 1981 and 2007, which is not even half as much as in dynamic services. Workers' compensation in this segment is only 75% of an average wage in the total economy (see table 7.2.). Non-dynamic services are thus one primary subject of Baumol's cost disease, necessitating flexibility to adjust wages downward if this segment's employment share is to rise.

The interpersonal nature of non-dynamic services entails that any demand can only be met if a sufficient number of employees is ready to serve the customers. Firms should therefore make heavy use of atypical employees to precisely attune staffing to fluctuations in demand. Low labour productivity in combination with demand being highly sensitive to price changes further calls for high shares of part-time and temporary workers to optimise staffing efficiency. Trade and repair as well as hotels and restaurants indeed show high proportions of part-time (27% and 34%, respectively) and fixed term employment (11% and 18%, respectively). Deployment of non-standard workers on a similar scale can only be found in welfare services. A greater degree of willingness among employees and job seekers to take up work in atypical arrangements is hence likely to help non-dynamic service employment.

As implied by low levels of productivity and small investments in ICT, non-dynamic services do not require a highly trained workforce. Neither do non-dynamic services seem to rely on specific skills because the high incidence of atypical work makes intensive, sustained training on-the-job unprofitable for workers and employers. A higher prevalence of general skills, however, allows workers to switch jobs more easily and raises incentives to accept atypical jobs. Therefore, employ-

ees who have experienced a larger amount of general training fit much more tightly into the flexible staffing policies and job-specifications firms in non-dynamic services need in order to be competitive.

Dynamic Services: Financial intermediation, real estate and business services together reached on average 158% of the productivity in manufacturing in 2006. The main driver of productivity is finance whose productivity is 92% higher than in manufacturing, while productivity in real estate and business services is 50% higher. The major source of productivity growth in dynamic services was ICT investment, contributing 1.57 percentage points to value added growth in financial services and 1.05 percentage points to value added growth in business services between 1981 and 2007. This is significantly more than in manufacturing and non-dynamic services whose corresponding values range between 0.1 and 0.6 percentage points over the same time span (Wren 2013: 8). The reasons why ICT investments are propelling productivity in dynamic services so much more than in other sectors of the economy are twofold. First, ICT has greatly advanced the possibilities of trading those specific kinds of services not essentially relying on interpersonal interaction but more on processing information, which is at the heart of most dynamic services. By allowing to store and transport information worldwide at low costs, ICT has transformed information-based services into regular, tradable commodities, thereby greatly enhancing productivity in their production (Freund / Weinhold 2002, Blinder 2009). Second, as described in section 7.1., ICT acts as a complement to human labour in dynamic services and is hence suited to amplify labour efficiency. Employees who manage to find a job in dynamic services can expect to earn wages considerably above the level of other types of services and partly even above the standard in manufacturing. On average, the compensation in dynamic services is 117% of the compensation in the total economy, which is almost equal to remuneration in manufacturing, but with significant variation across its single elements. Based on productivity figures, the highest wages are paid in finance (88% above total economy

average); somewhat lower is pay in computer services and research (54% and 43% above average). Real estate, renting and other services reach values between 92% and 96%, which is below the standard of manufacturing, yet still more than in non-dynamic services.

As Autor et al. (2003) and Wren (2013) have pointed out, dynamic services owe their productivity growth largely to heavy investments in ICT. These, however, have some repercussions on skill requirements in this sector. Since ICT is especially effective in taking on repetitive tasks usually performed by workers with medium skills (e.g. book keeping), it reduces the demand for workers on this skill level. Instead, it raises the need for employees with a college level education, typically more general in nature and hardly industry or firm-specific, who are able to use ICT as complements to their skills in order to increase work productivity. ICT, for instance, can facilitate access to and processing of large amounts of data, but it is still the employees' responsibility to interpret the outcomes and to draw their own managerial conclusions. Dynamic services, if they are to account for a high fraction of total employment, are therefore highly dependent on sufficient supply of professionals with general skills acquired by tertiary education.

The incidence of atypical employment in dynamic services takes something like a midway position between manufacturing and other services. In finance about 15% of employees work part-time, in real estate and business services it is 22%. Both figures are significantly larger than in manufacturing (about 10%), yet still lower than in non-dynamic services as well as education and health care whose part-time fractions peak at 34%. Temporary work, however, is slightly less common in financial intermediation than in manufacturing (6% compared to 9%); real estate and business services are almost on the same level as manufacturing (10%). Altogether, dynamic services have a higher overall share of atypical employment, with part-time workers by far outnumbering fixed term workers. Since interpersonal interaction is not fundamental to dynamic services, firms' staffing strategies need not be as closely aligned to demand fluctuations as in other service sectors, thus

reducing the necessity to hire atypical workers. On the other hand, the reliance on employees with more general skills and less intensive firm-based training do not put a premium on standard employment. As a result, employers in dynamic services have more leeway than manufacturers to use to their advantage the flexibility provided by atypical employment, but do not depend as much on it as firms in non-dynamic services.

Welfare Services: The level of labour productivity in public administration, education, health and social work is similarly low as in non-dynamic services because both are essentially based on interpersonal interaction. That is, potential for productivity growth through ICT investments is small, which is supported by the numbers: only 0.2 to 0.4 percentage points of value added growth in welfare services between 1981 and 2007 can be accounted for by ICT. Mean labour productivity, relative to manufacturing, is only ten percentage points higher than in non-dynamic services (70%), implying that wages too should be only marginally better.

Yet welfare services differ from other services with low productivity in two crucial points. The first is that, unlike major parts of non-dynamic services, welfare services are no mere luxury items that can easily be self-provided or spared altogether without running the danger of incurring serious harm to personal health and human capital if, for example, medical treatments or school lessons are not carried out. Rather, demand for welfare services is likely to hold up even if wages in this segment climb above actual productivity and thereby push up relative prices. The second point is that, in most developed countries, the majority of welfare services is provided by the public sector. Therefore, they do not have to compete under conditions of a free market, but are largely tax funded and operate in tightly regulated legal frameworks stipulating fees and remunerations. Taken together, these two points result in wages paid in welfare services that lie much closer to the mean of the income distribution than labour productivity would suggest. Indeed, welfare services altogether pay wages 6% higher than the average of the total economy (for comparison: in non-dynamic services pay is 25% lower

| | REQUIRED SKILLS | PRODUCTIVITY / COMPENSATION LEVEL | ESSENTIAL TYPE OF EMPLOYMENT |
|----------------------|-----------------|--------------------------------------|---------------------------------|
| Manufacturing | Specific | High / High | Standard |
| Non-dynamic Services | General | Low / Low | Atypical |
| Dynamic Services | General | High / High | Atypical |
| Welfare Services | General | Low / High | Atypical |

Table 7.3: Characteristics of Four Economic Segments

than the average). Public administration, defence and education are even more lucrative than manufacturing (48% and 29% above average). Wages in health match those in real estate (98% of average).

Due to the interpersonal nature of welfare services, the need to use atypical work arrangements to increase staffing efficiency is approximately the same as in non-dynamic services. In education and health services, part-time employees account for a share in total employment almost identical to that in hotels and restaurants (35%). The same applies to the share of temporary employees, accounting for 18% of total jobs in education and health compared to 15% in hotels and restaurants. Public administration has a considerable lower proportion of part-timers (16%) and fixed term workers (11%), but still more than manufacturing. Being able to hire employees on atypical terms in large numbers thus seems to help the growth of welfare services.

Likewise, the structure of required skills is similar as in non-dynamic services. Large fluctuations of demand, accommodated by massive use of atypical employees, calls for a workforce that is broadly trained with more general rather than specific skills. Table 7.3 gives an overview of each segment's specific characteristics.

7.3 THE IMPACT OF INSTITUTIONS ON SECTORAL EMPLOYMENT GROWTH

A leading question of this thesis is how social protection schemes shape sectoral employment growth. To this aim, I outline in this section what kind of influence unemployment benefits, sickness benefits, and minimum

incomes take on job seekers' incentives to accept various kinds of jobs and on employers' decisions which specific sorts of employment arrangements to offer. Central to this issue is how the mentioned schemes interact with varying productivity levels, skill requirements, and employment structures across different economic segments.

Unemployment Protection: As described in section 5.2., unemployment benefits affect the reservation wage and therefore job seekers' readiness to accept jobs on offer. Rising unemployment benefits consequently decrease incentives to take on low productivity, low pay jobs. Higher values for both unemployment benefit indices are thus expected to reduce employment in low pay segments. This applies all the more to benefits for atypical workers as their remuneration is typically lower than standard employees'. High accessibility of unemployment benefits is likely to amplify this effect by broadening the range of eligible persons.

The theory of reservation wages also states another way by which benefits can affect incentives to seek work, resulting in a conclusion contradictory to the preceding one. Rather than decreasing it, unemployment benefits may also enhance the appeal of a job, even when pay is slightly below the reservation wage, since benefits linked to the take up of work can be perceived as supplements to an otherwise dismal wage. That is, if a job appears unattractive due to bad remuneration or short tenure, it can be partly offset by unemployment benefits adding to the expected income. Higher values for both unemployment benefit indices and the accessibility index may thus also have the effect of increasing employment in low productivity, low pay segments. Whether the employment enhancing or

the employment dampening effect prevails, remains an open empirical question.

Unemployment benefits not only have an impact on reservation wages, they can also make a difference in what kind of work arrangement one might choose. If workers with reduced hours and short tenures are precluded from benefits by strict access requirements *a priori*, standard jobs become more appealing than part-time or fixed term ones. This effect is further reinforced by discrepancies in the amounts paid out and their respective durations. Generous unemployment benefits for standard employees, while benefits for atypical workers remain poor, contribute to making standard jobs more desirable. In this way unemployment protection directly partakes in shaping an economy's employment structure; in this case, more specifically, it influences how attractive atypical work is relative to standard work. Greater accessibility and more generous benefits for atypical employees (relative to standard benefits) are therefore likely to increase the incidence of atypical work, helping segments to build up employment that rely to large parts on this kind of flexible labour and *vice versa*.

Most important, however, is the role unemployment protection plays in the creation of specific skills. There are several institutional prerequisites that must be met before specific skills can become prevalent among the workforce. Since specific skills are portable across firms only to a limited degree, they involve a serious risk for any worker acquiring them. If an employee equipped with specific skills loses her job, she will find it exceptionally difficult to find a new job which makes use of her skills to the same degree as before. Any change of job will entail a serious and probably enduring wage loss, making investments in specific skills a dangerous and probably unprofitable undertaking. Given the high initial costs of investments in such skills and the risks associated with it, workers are likely to shun specific training unless there are several social security schemes in place to mitigate their perils (Estevez-Abe / Iversen / Soskice 2003, Iversen 2005).

In the literature, three dimensions of security vital

for specific skill investments have been identified. The first is *employment protection* which refers to the risk of job loss itself. If legislation exists that restricts firms' possibilities to reduce staff, workers can be more confident that the relationship with their employer is going to be long-term and that their investments in specific skills will pay off. Employment protection legislation is thus necessary for a large, successful manufacturing sector dependent on specific skills (Iversen / Stephens 2008, Harcourt / Wood 2007, Tang 2012, Wasmer 2006). No less important is *unemployment protection*, safeguarding income in case a worker becomes jobless despite employment protection. The measure most highlighted by the literature in this context is unemployment benefits which replace a significant fraction of the former wage for a prolonged time span once a worker has lost her job. This will give her the opportunity to take enough time to look for a suitable new job, utilising at least parts of her specific skills and hence minimising the wage loss she will suffer (Mares 2003). It is hardly mentioned in the literature, but sickness benefits serve a similar purpose, namely to protect jobs and income once an employee falls sick. In this case, the owner of specific skills is reassured that she will retain her job and that her pay is at least partly upheld until she has fully recovered and is able to return to work. However, most unemployment and sickness benefits are not infinite. The risk that a claimant will not find an adequate new job or recuperate before her benefit is exhausted can never be ruled out entirely. Therefore, generous minimum income schemes, established to step in if other support is not available any longer, are an integral part of unemployment protection and wrongly neglected by major parts of the literature on institutional foundations of specific skills and comparative advantages. The last dimension of protection, finally, is called *wage protection* and comprises any mode of coordinated wage bargaining that leads to a comparable wage structure in any company. This makes sure that, after a period of unemployment, a worker can expect to earn a similar wage in a new firm and on a new position as before so that individual investments in specific skills are not de-

| | IMPACT ON SKILL ACQUISITION | IMPACT ON RESERVATION WAGE / FIRMS' COSTS | IMPACT ON ATYPICAL EMPLOYMENT |
|---|---|--|--|
| Accessibility Unemployment Benefit | High accessibility encourages acquisition Of general skills | High accessibility can either push up or down reservation wages (unclear effect) | High accessibility increases incentives to take up atypical Employment |
| Unemployment Benefit For Atypical Workers | High benefits encourage acquisition Of general skills | High benefit can either push up or down reservation wages (unclear effect) | High benefits increase incentives to take up atypical Employment |
| Unemployment Benefit For Standard Workers | High benefits encourage acquisition Of specific skills | High benefit can either push up or down reservation wages (unclear effect) | Low benefits increase incentives to take up atypical Employment |
| Accessibility Of Sickness Benefit | High accessibility encourages acquisition Of general skills | High accessibility pushes up firms' Costs | Low accessibility increases incentives to take up atypical Employment |
| Sickness Benefit For Atypical Workers | High benefits encourage acquisition Of general skills | High benefits push up firms' Costs | Low benefits increase incentives to take up atypical Employment |
| Sickness Benefit For Standard Workers | High benefits encourage acquisition Of specific skills | High benefits push up firms' Costs | High benefits increase incentives to take up atypical Employment |
| Minimum Income | High benefit encourages acquisition Of specific skills | High benefit pushes up reservation Wages | No effect |

Table 7.4: The Impact of Institutions on Sectoral Employment Growth

valued by job or employer changes. It further eliminates incentives for firms to free ride by poaching specifically skilled employees with higher wages, in which case all manufacturers would eventually cease their training efforts as workers cannot be kept from changing to a competitor, thereby eroding the supply of specific skills. Another benefit for firms is that coordinated bargaining curtails employees' opportunities to exploit the strategic advantage conferred to them by their specific skills to shut down production in order to exact steep wage hikes. Wage protection therefore serves the purpose of ensuring that both employers and employees can reap the fruits of specific skill investments. With regard to the importance of unemployment benefits, it follows

that high values for the unemployment benefit indices are a necessary condition for any economic segment relying on the prevalence of specific skills to step up employment.

Sickness Benefits: The crucial difference between unemployment and sickness is that the latter does not entail the end of an employment relationship; in fact, with sickness benefits in place, firms cannot easily dismiss incapacitated workers and, at least in most countries, have to continue wage payments, causing them considerable additional costs. In contrast to unemployment benefits, for the most part concerning the labour supply side, sick pay impacts more strongly on the demand side, i.e. on employers' incentives. In a low productivity, low

skill environment with rapid turnover of staff generous sickness benefits mean that labour costs are driven up and may eventually exceed the threshold of profitability, resulting in declining employment. On the other hand, they may encourage firms to concentrate on high skill, high productivity sectors that can more easily afford the expenses and even benefit from entering into more long-run relationships with their highly qualified staff (e.g. through specific skills), directing the economy towards high productivity sectors.

The rules on accessibility and benefits can also have a significant impact on the decision whether a company offers more standard or non-standard jobs. If, for instance, dualism exists in that atypical workers receive less generous benefits than their standard counterparts, employers save costs if they maintain a higher share of atypical jobs. In this case, employers are likely to thrive whose business model is built upon large proportions of atypical contracts (such as non-dynamic services) and *vice versa*.

For skill acquisition, sick pay serves the same purpose as unemployment protection, namely to reassure employees that their income is safe and their qualifications are not devalued if they fall sick, thereby allowing for the spread of specific skills. Generous sick pay is thus one prerequisite for industries depending on such skills to grow.

Minimum Income: Although minimum incomes normally are less than unemployment and sickness benefits, they could nonetheless be able to affect the reservation wage. Especially in low productivity segments, basic incomes could have the effect to undermine work incentives; in particular, if a large fraction of jobs on offer is atypical and low pay. A generous minimum income is thus likely to reduce employment in sectors based on low wages and high shares of atypical jobs. In sectors with higher productivity, however, the minimum income is not expected to have any effect on employment since wages—both in standard and atypical jobs—will outstrip any public basic income by far.

With regards to skills, minimum incomes serve as a supplementary part of unemployment protection, step-

ping in as a last resort if unemployment and sickness benefits cannot be obtained or have been exhausted. A higher minimum income is therefore hypothesised to facilitate specific skill acquisition among the workforce, especially when first-tier benefits are stingy, and to increase employment in sectors requiring such skills. An overview of the impact of institutions is given in table 7.4.

7.4 HYPOTHESES ON SECTORAL EMPLOYMENT GROWTH

As previous sections have pointed out, each sector has its idiosyncratic needs that must be met if the sector is to expand its employment share. The following paragraphs derive concrete hypotheses about the specific configurations of social protection arrangements that may be conducive to employment growth in each of the four economic sectors, drawing on the theoretical mechanisms set out above. Additionally, further factors likely to play a role in the determination of job shares are identified and introduced as control variables.

Manufacturing: high productivity makes sure that unemployment benefits and minimum incomes cannot subvert work incentives in this sector as wages are sufficiently generous. Neither are sickness benefits likely to be a major concern of manufacturers. The costs of wage continuation for ill workers are relatively marginal compared to the profits they earn the firm. What is likely to affect job figures, however, is the extent of coordinated wage bargaining (Iversen / Soskice 2013). If coordination is more pronounced in that wages of high productivity sectors (such as manufacturing) are closely linked to those in low productivity sectors (such as non-dynamic services), wage compression will occur since wages in high productivity sectors will stay below their actual productivity and wages in low productivity sectors will go beyond their productivity. This bolsters competitiveness in the high productivity sector and raises its employment rate. Coordination of bargaining is therefore expected to increase employment shares in manufacturing.

Manufacturing also shows a preponderance of standard work arrangements as these complement the distinct conditions of industrial production best. Any measure that makes full-time, permanent employment more desirable than atypical work is thus likely to result in a larger number of manufacturing jobs. This implies that restrictive accessibility in combination with low benefits for atypical workers and high benefits for standard ones constitute an institutional environment in which industrial jobs are likely to flourish.

Most important, however, is the role of specific skills in creating a comparative advantage for manufacturing. In order to generate these skills to a sufficient extent, a whole range of necessary conditions has so far been identified by theory: a significant degree of employment protection, generous unemployment benefits, sickness benefits and minimum income, as well as a system of wage bargaining located on a central level. Given that specific skills are most profitable when used in standard work arrangements and also given the preference of manufacturing for standard jobs, a social protection arrangement seems most favourable for employment expansion that, on the one hand, guarantees generous financial support in order to allow for specific skills and, on the other hand, puts a premium on standard work. This calls for a form of dualism concentrating social protection on standard workers while being restrictive to part-time and fixed term ones; in terms of concrete index scores, this is expressed in high values for the benefit index for standard workers as well as high values for minimum income. The accessibility index and the benefit index for atypical workers, by contrast, should display markedly lower values. As for the controls, strict employment protection legislation and a centralised bargaining are assumed to help manufacturing employment.

Non-dynamic Services: low productivity and highly price sensitive customers create an environment in which firms' scope for wage increases is tight. A high unemployment benefit can therefore seriously hamper job growth in this sector if it pushes the reservation wage above the threshold of what employers are willing

to pay. Sickness benefits lead to the same result by adding to the costs employers have to bear, reducing their capacity to hire. For persons ineligible for either of these benefits, a minimum income too generous can have the same effect by driving up the reservation wage excessively. If these hypotheses describe reality correctly, high employment in non-dynamic services is contingent on low values for all social protection indices.

Somewhat confusing, from the same theory described above contradicting predictions can be derived. Given the low wage floor, contribution based unemployment benefits may also be appreciated as wage supplements by job seekers, raising their willingness to accept low wage work. Hence, more generous unemployment benefits (but not minimum incomes) in combination with less restricted accessibility rules may also hold the potential to increase employment in non-dynamic services by lowering the reservation wage rather than heightening it. This is reinforced by the fact that non-dynamic services are highly dependent on atypical employment which becomes more attractive if it is more comprehensively protected relative to standard work. Therefore, if it is true that, in fact, unemployment benefits raise incentives, we would expect the strongest positive effect on employment shares when accessibility and benefits for atypical employees are high, whereas those for standard ones are relatively smaller. Sickness benefits have only partly the same effect as they shape employers' incentives more intensively than job seekers'. It is thus unlikely that sick pay impacts on reservation wages. More likely is that accessibility of sick pay and the generosity of hand-outs to atypical workers may serve to make non-standard work more attractive which can support employment in non-dynamic services. Specific skills and their sophisticated institutional prerequisites do not play a role in this sector that is reliant on a broad supply of general skills.

Yet wages paid are not determined by productivity and social protection schemes alone; there are also more direct institutional interferences that can have substantial impact on remuneration. One of them is the extent of coordinated bargaining which is able to diminish

wage disparities by aligning wage trends in more and less productive branches of the economy. While more centralisation of bargaining yields a more restrained pay level in manufacturing, it makes pay in non-dynamic services rise above its actual productivity and therefore has a potentially detrimental effect on employment (Blau / Kahn 2009, 1999, Freeman 2007). More decentralised wage bargaining, in turn, is expected to increase the employment share of non-dynamic services.

In contrast to manufacturing, theories make contradictory predictions as to the effect of social protection measures. Hence, there are competing hypotheses derived from theory that need to be subjected to empirical testing in order to determine which one describes reality more closely. The first hypothesis holds that low scores for all indices, i.e. a state of low protection without dualism, makes employment shares of non-dynamic services grow. The second hypothesis states that higher first-tier benefits, in particular the accessibility index and the benefit index for atypical workers in the realm of unemployment protection, in combination with low minimum incomes are most conducive to employment, constituting a social protection arrangement with a small degree of dualisation due to less restrictive accessibility and relatively higher benefits for atypical workers, but with a considerable cleavage between first-tier benefits and the minimum income. More centralised wage bargaining impedes the expansion of employment in non-dynamic services.

Dynamic Services: Starting with the demand side, with respect to high labour productivity in this sector, neither unemployment benefits nor minimum incomes are likely to undermine incentives to work or hire. Since dynamic services are largely based on college educated labour inputs with general skills, there is likewise no necessity for social security prerequisites to create specific skills. Considering the need for atypical employees in dynamic services, however, better accessibility as well as higher payments of unemployment and sickness benefits for atypical employees may help to ensure the availability of part-time and, to a smaller extent, fixed term workers. Thus, more generous unemployment and

sickness benefits for atypical workers in combination with easy access may have a small employment enhancing effect.

On the supply side, sickness benefits may be beneficial for employment growth in dynamic services as they reduce turn-over of staff and add to firms' labour costs, giving an incentive to invest in sectors making use of highly skilled, highly productive personnel suited to recover bigger expenses on wages and fringe benefits; this applies to all three sickness benefit indices.

Wren, Fodor, and Theodoropoulou (2013) argue that the centralisation of wage bargaining can also have an impact on dynamic services. Work in this sector often requires college based training; it thus can only grow if academic skills are sufficiently widespread among the workforce. Since these skills are comparatively expensive investments due to tuition fees and a generally prolonged period outside work and in education, they will only be made once lucrative employment opportunities exist afterwards to recoup the expanses. If incomes are compressed by comprehensive collective agreements, people may refrain from costly college attendance, leaving academic skills undersupplied. Governments may mitigate this effect by subsidising university training through waiving of tuition fees and financial grants to students, yet even in this case better wage prospects are likely to encourage more people to study. Less centralised wage bargaining might therefore be beneficial for employment shares in dynamic services.

Summed up, we generally expect only a modest effect of social protection schemes on employment. The minimum income index is assumed to play no role at all; no variety of dualism seems to be particularly helpful for job growth in this sector.

Welfare Services: These sectors differ from the previously described in that they are not purely governed by the market, but that substantial parts of them are provided by the public. The size and staffing of welfare services is not so much contingent on supply and demand formed by market conditions; it is a political decision on how much a society is willing to spend on public services. The main determinant of welfare service em-

ployment and the respective wages paid to employees is therefore state expenditure on welfare rather than other institutional or market factors. It follows that earnings are sufficiently above the reservation wage to preclude that benefits and minimum incomes can exert a detrimental influence on incentives to accept jobs in this segment. Because the scale of employment is more a political than a market decision, sick pay entitlements are not likely to reduce aggregate employment figures in welfare services. Moreover, welfare services do not have specific skill requirements. The only aspect in which benefits could make a difference is, as with dynamic services, the pervasiveness of atypical work, which could be supported by generous accessibility rules in combination with higher and longer payments for atypical workers in case of sickness and unemployment. By and large, the effects are expected to be quite small, however, with no inherent dynamic towards dualisation. All hypotheses for all sectors are briefly summarised in tables 7.5–7.8.

Included in every estimation, whatever the dependent variable, is labour productivity in manufacturing. Since the starting point of thinking about tertiarisation has always been the massive loss of employment in manufacturing due to increases in productivity (for reasons I will not further investigate in this study), it seems to be important to control the productivity level of manufacturing in each country and year to see clearer what difference labour market institutions make beyond productivity differentials. Another control I employ in every estimation is state consumption which can divert jobs away from the private to the public sector if the state decides to heavily invest in public employment as is the case of Scandinavian countries. State consumption therefore can play a major role in shaping the process of tertiarisation.

Many studies on this topic employ GDP per capita as control (e.g. Wren / Fodor / Theodoropoulou 2013), yet I deliberately dropped this variable because its interpretation is not straightforward. It can be used as a yardstick for an economy's general development status (e.g. in Wren / Fodor / Theodoropoulou 2013), which is a rather vague concept, as a measure of affluence or

as a measure of technical advancement. The latter two concepts, however, could be gauged more immediately by other proxies such as median income or productivity, so that adding the GDP per capita as control is not going to improve results, especially if it is combined, as it often is, with other variables it may share a causal relationship with (such as trade openness).

7.5 DATA

The dependent variables, i.e. the employment shares of the four economic sectors, are computed for each country by dividing the number of persons engaged in each of the sectors by the size of the total labour force.³ Data on total numbers of people engaged stem from the OECD's STAN data base (using ISIC Rev. 3), figures on the labour force were obtained from the OECD's ALFS summary tables.

The independent variables being at the heart of this thesis, i.e. unemployment benefits, sickness benefits, and minimum income, are measured by the indices described in chapter 7 and enter the estimation at face value. The transformation of the values performed during the cluster analysis is thus not repeated for the regression. Other data included in the regressions as controls were taken from various sources. Figures on productivity in manufacturing were calculated by dividing the value added of manufacturing (in constant 2010 prices and in purchasing power parities) by all persons engaged in this sector in any given year.⁴ Data on value added were retrieved from OECD's STAN data base. Public employment, another important control vari-

3 Total labour force includes all people employed or unemployed and seeking work.

4 It would be more accurate to compute productivity by using hours actually worked instead of persons engaged. Yet data on hours worked are not available in sufficient sectoral detail for many countries. Some comparative calculations show that, especially in non-dynamic and welfare services, productivity seems to be somewhat underestimated due to the high number of part-time workers in these sectors, whereas in manufacturing, where atypical work is rare, the deviation is rather small.

| | CAUSAL MECHANISM | | | TOTAL EFFECT |
|---|---|---|---|---|
| | SKILL ACQUISITION | RESERVATION WAGE / FIRMS' COSTS | ESSENTIAL TYPE OF EMPLOYMENT | |
| Accessibility Unemployment Benefit | Low accessibility discourages atypical employment → conducive to the acquisition of specific skills → more manufacturing employment | No effect → wages are sufficiently high (work incentives are not eroded) | Manufacturing relies on standard work → low accessibility discourages atypical employment → more manufacturing employment | Low accessibility increases employment in manufacturing |
| Unemployment Benefit for Atypical Workers | Low benefits discourages atypical employment → conducive to the acquisition of specific skills → more manufacturing employment | No effect → wages are sufficiently high (work incentives are not eroded) | Manufacturing relies on standard work → low benefits discourage atypical employment → more manufacturing employment | Low benefits increase employment in manufacturing |
| Unemployment Benefit for Standard Workers | High benefits serve as income protection → encourage acquisition of specific skills → more manufacturing employment | No effect → wages are sufficiently high (work incentives are not eroded) | Manufacturing relies on standard work → high benefits encourage standard employment → more manufacturing employment | High benefits increase employment in manufacturing |
| Accessibility of Sickness Benefit | Low accessibility discourages atypical employment → conducive to the acquisition of specific skills → more manufacturing employment | No effect → productivity is sufficiently high (firms are able to bear the financial burden) | Manufacturing relies on standard work → low accessibility discourages atypical employment → more manufacturing employment | Low accessibility increases employment in manufacturing |
| Sickness Benefit for Atypical Workers | Low benefits discourages atypical employment → conducive to the acquisition of specific skills → more manufacturing employment | No effect → productivity is sufficiently high (firms are able to bear the financial burden) | Manufacturing relies on standard work → low benefits discourage atypical employment → more manufacturing employment | Low benefits increase employment in manufacturing |
| Sickness Benefit for Standard Workers | High benefits serve as income protection → encourage acquisition of specific skills → more manufacturing employment | No effect → productivity is sufficiently high (firms are able to bear the financial burden) | Manufacturing relies on standard work → high benefits encourage standard employment → more manufacturing employment | High benefits increase employment in manufacturing |
| Minimum Income | High benefits serve as income protection → encourage acquisition of specific skills → more manufacturing employment | No effect → wages are sufficiently high (work incentives are not eroded) | No effect | High benefits increase employment in manufacturing |

Table 7.5: Hypotheses Manufacturing

| | CAUSAL MECHANISM | | | TOTAL EFFECT |
|---|--|--|--|--|
| | SKILL ACQUISITION | RESERVATION WAGE / FIRMS' COSTS | ESSENTIAL TYPE OF EMPLOYMENT | |
| Accessibility Unemployment Benefit | Non-dynamic services rely on general skills → no social protection prerequisites → no effect | High accessibility can either push up or down reservation wages (unclear effect on employment) | Non-dynamic services rely on atypical work → high accessibility encourages atypical employment → more non-dynamic service employment | Accessibility can increase or decrease employment (unclear effect) |
| Unemployment Benefit for Atypical Workers | Non-dynamic services rely on general skills → no social protection prerequisites → no effect | High benefit can either push up or down reservation wages (unclear effect on employment) | Non-dynamic services rely on atypical work → high benefits encourage atypical employment → more non-dynamic service employment | Benefit can increase or decrease employment (unclear effect) |
| Unemployment Benefit for Standard Workers | Non-dynamic services rely on general skills → no social protection prerequisites → no effect | High benefit can either push up or down reservation wages (unclear effect on employment) | Non-dynamic services rely on atypical work → low benefits encourage atypical employment → more non-dynamic service employment | Benefit can increase or decrease employment (unclear effect) |
| Accessibility of Sickness Benefit | Non-dynamic services rely on general skills → no social protection prerequisites → no effect | High accessibility pushes up firms' costs → negative employment effect | Non-dynamic services rely on atypical work → high accessibility encourages atypical employment → more non-dynamic service employment | Accessibility can increase or decrease employment (unclear effect) |
| Sickness Benefit for Atypical Workers | Non-dynamic services rely on general skills → no social protection prerequisites → no effect | High benefits push up firms' costs → negative employment effect | Non-dynamic services rely on atypical work → high benefits encourage atypical employment → more non-dynamic service employment | Benefit can increase or decrease employment (unclear effect) |
| Sickness Benefit for Standard Workers | Non-dynamic services rely on general skills → no social protection prerequisites → no effect | High benefits push up firms' costs → negative employment effect | Non-dynamic services rely on atypical work → low benefits encourage atypical employment → more non-dynamic service employment | Low benefit increases employment |
| Minimum Income | Non-dynamic services rely on general skills → no social protection prerequisites → no effect | High benefit pushes up reservation wages → negative employment effect | No effect | High benefits decrease employment |

Table 7.6: Hypotheses Non-dynamic Services

| | CAUSAL MECHANISMS | | | TOTAL EFFECT |
|---|--|--|--|--|
| | SKILL ACQUISITION | RESERVATION WAGE / FIRMS' COSTS | ESSENTIAL TYPE OF EMPLOYMENT | |
| Accessibility Unemployment Benefit | Dynamic services rely on general skills → no social protection prerequisites → no effect | No effect → wages are sufficiently high (work incentives are not eroded) | Dynamic services rely on atypical work → high accessibility encourages atypical employment → more non-dynamic service employment | High accessibility slightly increases employment in dynamic services |
| Unemployment Benefit for Atypical Workers | Dynamic services rely on general skills → no social protection prerequisites → no effect | No effect → wages are sufficiently high (work incentives are not eroded) | Dynamic services rely on atypical work → high benefits encourage atypical employment → more non-dynamic service employment | High benefits slightly increase employment in dynamic services |
| Unemployment Benefit for Standard Workers | Dynamic services rely on general skills → no social protection prerequisites → no effect | No effect → wages are sufficiently high (work incentives are not eroded) | Dynamic services rely on atypical work → low benefits encourage atypical employment → more non-dynamic service employment | Low benefits slightly increase employment in dynamic services |
| Accessibility of Sickness Benefit | Dynamic services rely on general skills → no social protection prerequisites → no effect | Higher accessibility causes firms higher costs → firms concentrate on high productivity sectors → more dynamic service employment | Dynamic services rely on atypical work → high accessibility encourages atypical employment → more non-dynamic service employment | High accessibility increases employment in dynamic services |
| Sickness Benefit for Atypical Workers | Dynamic services rely on general skills → no social protection prerequisites → no effect | Higher accessibility causes firms higher costs → firms concentrate on high productivity sectors → more dynamic service employment | Dynamic services rely on atypical work → high benefits encourage atypical employment → more non-dynamic service employment | High benefits increase employment in dynamic services |
| Sickness Benefit for Standard Workers | Dynamic services rely on general skills → no social protection prerequisites → no effect | Higher accessibility causes firms higher costs → firms concentrate on high productivity sectors → more dynamic service employment | Dynamic services rely on atypical work → low benefits encourage atypical employment → more non-dynamic service employment | High benefits can increase or decrease employment (unclear effect) |
| Minimum Income | Dynamic services rely on general skills → no social protection prerequisites → no effect | No effect → wages are sufficiently high (work incentives are not eroded) | No effect | No effect |

Table 7.7: Hypotheses Dynamic Services

| | CAUSAL MECHANISMS | | | TOTAL EFFECT |
|---|--|--|--|--|
| | SKILL ACQUISITION | RESERVATION WAGE / FIRMS' COSTS | ESSENTIAL TYPE OF EMPLOYMENT | |
| Accessibility Unemployment Benefit | Welfare services rely on general skills → no social protection prerequisites → no effect | Wages decoupled from productivity → no effect | Welfare services rely on atypical work → high accessibility encourages atypical employment → more non-dynamic service employment | High accessibility slightly increases employment in welfare services |
| Unemployment Benefit for Atypical Workers | Welfare services rely on general skills → no social protection prerequisites → no effect | Wages decoupled from productivity → no effect | Welfare services rely on atypical work → high benefits encourage atypical employment → more non-dynamic service employment | High benefits slightly increases employment in welfare services |
| Unemployment Benefit for Standard Workers | Welfare services rely on general skills → no social protection prerequisites → no effect | Wages decoupled from productivity → no effect | Welfare services rely on atypical work → low benefits encourage atypical employment → more non-dynamic service employment | Low benefits slightly increase employment in welfare services |
| Accessibility of Sickness Benefit | Welfare services rely on general skills → no social protection prerequisites → no effect | Employment politically determined → no effect | Welfare services rely on atypical work → high accessibility encourages atypical employment → more non-dynamic service employment | High accessibility slightly increases employment in welfare services |
| Sickness Benefit for Atypical Workers | Welfare services rely on general skills → no social protection prerequisites → no effect | Employment politically determined → no effect | Welfare services rely on atypical work → high benefits encourage atypical employment → more non-dynamic service employment | High benefits slightly increases employment in welfare services |
| Sickness Benefit for Standard Workers | Welfare services rely on general skills → no social protection prerequisites → no effect | Employment politically determined → no effect | Welfare services rely on atypical work → low benefits encourage atypical employment → more non-dynamic service employment | Low benefits slightly increase employment in welfare services |
| Minimum Income | Welfare services rely on general skills → no social protection prerequisites → no effect | Wages decoupled from productivity → no effect | No effect | No effect |

Table 7.8: Hypotheses Welfare Services

able, must be measured indirectly through government consumption expenditure proportional to GDP (both obtained from World Bank's World Development Indicators data base) because exact data on the numbers of public jobs are not readily available for most countries (Tepe 2009).

To operationalise the coordination of wage bargaining, Visser (2015) proposes one specific way in his ICTWSS data set by conceptualising a 'centralisation index' that measures on which level wage bargaining takes place. It takes into account, among other factors, the authority of union confederations towards their member organisations, whether or not unions are affected by internal and external divisions, and the proportion of members represented by single unions and confederations. The index ranges between zero and one, indicating a higher centralisation by higher scores. A high degree of centralisation is most likely to result in a more compressed wage structure, as unions do not bargain wages separately for single groups of employees, e.g. for single occupations or skill levels, but negotiate wages for all different types of employees within an industry.

Dismissal protection, finally, is gauged as suggested by the OECD's employment protection legislation index for regular employment (see OECD 2014 for details).

7.6 METHOD OF ESTIMATION

The estimations are conducted using an error correction model (ECM) which can be represented as follows:

$$Y_{it} = \beta_0 + \beta_1 Y_{it-1} + \beta_2 \Delta X_{it} + \beta_3 X_{it-1} + u_i + v_t + \varepsilon$$

Y is a sector's share of the total labour force, i is the country subscript, and t is the subscript of the time period. The regressors are represented by X . U is a set of country dummies, and v is a set of time dummies. Benefit indices for standard and atypical employees are not simultaneously part of the regressors; each enters

the regression after the other, all other variables staying the same. This procedure becomes necessary since, if both were included, the number of regressors would be on the verge of overfitting. Moreover, both indices are closely correlated. The results, however, do not substantially change, no matter whether both variables are included separately or together.

The advantage of an ECM is that it allows us to capture effects occurring immediately, in the subsequent time period, and dispersed over several time periods. The former two effects are easy to access from the equation as they are represented by β_1 and β_2 , while the accumulated total effect over multiple time periods, the so called the long-run multiplier (LRM), must be worked out using the Bewley transformation (Bewley 1979). The ECM is a most general model that imposes no prior restrictions on the variables' lag structures, which seems to be the right way to proceed for the theories tested in this study predicting no exact time span within which the explanatory variables are going to influence the dependent variable. Unemployment benefits, for example, may influence educational decisions only in the long-run, but may have an immediate impact on reservation wages. Forcing a specific lag structure on the data a priori would therefore almost certainly result in spurious outcomes (Deboef / Keele 2008). The ECM, by contrast, tests and informs us whether an effect is transitory or long-term, which is additional, crucial information for the interpretation of the results. The only contemporaneous variables included are centralisation of wage bargaining and the EPL index because they do not have enough variability to be modelled in error correction form.

One controversy is closely tied to the inclusion of a lagged dependent variable (LDV) which is widely used to correct for serial correlation present in most time series data. While it is very successful in doing so, a common criticism is that, if the independent variables have a time persistent influence, the LDV absorbs too much of the independent variables' power and becomes overly dominant in explaining the outcome, leaving no room for other regressors (Achen 2001, Plümper / Troeger /

Manow 2005). I decided to include an LDV despite these caveats for two reasons. First, since regressors are allowed to have a more persisting influence, the ECM weakens the LDV's power to dominate the estimation and consequently reduces a possible bias (Deboef / Keele 2008). Second, employment shares are not randomly generated anew in each time period, but strongly dependent on the prior period; changes are likely to happen only gradually. There is thus a strong path dependency that should be explicitly modelled to avoid overestimating the independent variables' effects (Beck / Katz 2011). In my estimations, the inclusion of an LDV suffices to get rid of serial correlation⁵ in all cases, except when employment shares of welfare services are to be explained. Only then I additionally apply the Prais-Winsten procedure to eliminate auto-correlation. Standard errors in all estimations are panel corrected (Beck / Katz 1995). Full sets of country and year dummies are added since F-tests concluded they belong in the model.

As a last point, issues of endogeneity need to be discussed. As research has shown, economic crises entailing soaring unemployment levels can trigger reforms of benefit schemes (Høj et al. 2006, Duval / Elmeskov 2006), whereas this study assumes that benefits shape employment structures. It follows that the analysis may suffer from endogeneity problems if unemployment directly affects employment shares of specific sectors. For example, in an economic downturn employment in non-dynamic services might contract faster than in other sectors as these kinds of services are considered luxury items, the demand for which falls disproportionately relative to incomes. A decreasing fraction of total employment in non-dynamic services would then reflect growing unemployment figures which could affect benefit systems and cause endogeneity in the analysis. This concern turns out to be unjustified, however, as employment shares in no single sector are markedly correlated with unemployment:⁶ Correlation coefficients

oscillate between -0.1 in manufacturing and 0.25 in non-dynamic services. The dependent variables are thus not good proxies for unemployment, so that endogeneity seems no severe issue here.

7.7 RESULTS

7.7.1. UNEMPLOYMENT BENEFITS

I begin this section with the presentation of the results with unemployment benefits as independent variables (see tables 7.9 and 7.10). The effects on employment shares in manufacturing are partly surprising. As expected, unemployment benefits for standard workers have a positive impact in the short run (yet insignificant), but the long run multiplier is negative and significant. This runs counter to the hypothesis that high unemployment benefits for standard workers are a necessary condition for the creation of specific skills among the workforce and thus for a large industrial sector. The parameters of the accessibility variables are more in line with our expectations, though on a much smaller scale than theory had predicted. The long run multiplier is negative and significant as expected, but the parameter of the differenced accessibility variable is significant positive. The overall effect is small (one additional index point lowers the manufacturing employment share by 0.063 percentage points) and negative. The effect of minimum income is strong and significant in the long run and stays so even when the insignificant positive short-term effect is subtracted from it (a one percentage point increase in minimum income raises the manufacturing employment share by 0.075 percentage points) which is widely in congruence with expectations. The reason why the immediate effects of benefits, accessibility, and minimum income have different signs than the long-term effect may be that in the short run higher benefits and lower minimum income support are perceived as greater, albeit transitory, incentives to take up jobs, whereas the effect

5 Breusch-Godfrey-Test

6 Data obtained from the OECD data base.

of unemployment protection on skill acquisition needs more time to play out.

The assumed positive impact of higher centralisation of wage bargaining is confirmed by the data. Likewise, productivity and state consumption show the correct signs as predicted by theory both in the short and in the long run, although in the former they are significant only for state expenditure. This implies that the state has a more immediate capacity to influence employment shares while structural change happening through productivity growth is more incremental. EPL, however, was insignificant in all estimations and thus dropped from the regressions.

When unemployment benefits for atypical employees are inserted in the estimation instead of standard benefits, results hardly change, except that the negative long run effect of benefits is growing larger. Falling unemployment benefits for fixed term and part-time employees therefore seem to be more conducive for manufacturing employment than falling support for standard workers.

From this we can conclude that the hypothesis that generous unemployment protection for standard workers is needed to make manufacturing thrive is not directly confirmed by the estimations. Rather, manufacturing sustains its employment share particularly when first-tier benefits are curtailed. Even though it is impossible to tell from the regressions whether manufacturing employment holds up *as a result of* or *in spite of* decreasing benefits, it is safe to conclude that unemployment protection is not only and not most crucially provided by unemployment benefits. Instead, rising minimum incomes seem to be associated with higher employment in manufacturing, leading us to the tentative conclusion that it is primarily minimum income schemes that offer the financial protection needed for workers to acquire specific skills. It is important to note, however, that trimming atypical workers' benefits does more to bolster manufacturing than standard workers'. That is, a situation where standard workers can receive higher benefits than atypical ones, even when both are subject to a general downward trend, is conducive to manu-

facturing employment. Hence, the incentive to prefer standard over atypical jobs may be preserved when benefits accrued from standard employment relationships will still be relatively greater compared to benefits from atypical work. The discouragement of non-standard employment is further amplified by restrictive accessibility rules.

Summed up, the results imply that first-tier benefits are not the primary defenders against income loss due to unemployment, but that this task is primarily performed by minimum income schemes. Nonetheless, despite their vanishing function as financial protection measures, unemployment benefits still appear to serve the purpose of privileging standard over atypical work by erecting high obstacles for atypical employees to become eligible and by offering higher (or less sharply dropping) benefits to standard workers. In this way, they still put a premium on standard employment and discourage the take up of atypical jobs which helps the acquisition of specific skills. Manufacturing thus has the inherent tendency to produce dualisation in form of atypical employees being treated less favourable by unemployment insurance both in terms of access and, albeit less pronounced, benefits. The tendency towards dualism is only alleviated by generous minimum incomes. One caveat to this interpretation is that the time series begins in the 1990s; a period, in which most countries cut back on their unemployment protection schemes. It might be interesting to observe a longer period, e.g. starting in the 1960s, to analyse whether there had been a different trend prior to 1990 and when there (possibly) was a turning point.

With employment in non-dynamic services as dependent variable, both coefficients of short and long run effects of unemployment benefits for standard employees are significant positive. The same holds for accessibility, whereas minimum income has an overall negative impact. The hypothesis that minimum income schemes can hamper employment growth in non-dynamic services by lifting the reservation wage is thus confirmed by the data. As to the question whether unemployment benefits provide further incentives for the

| | STRICT ACCESSIBILITY | DIVERGENCE OF FIRST-TIER BENEFITS BETWEEN STANDARD AND ATYPICAL WORKERS | DIVERGENCE BETWEEN MINIMUM INCOMES AND FIRST-TIER BENEFITS FOR STANDARD WORKERS |
|----------------------|----------------------|---|---|
| Manufacturing | ↑ | ↑ | ↓ |
| Non-dynamic Services | ↓ | ↑ | ↑ |
| Dynamic Services | ↓ | ↓ | - |
| Welfare Services | - | - | - |

Legend:

Increasing dualisation helps sectoral employment: ↑

Decreasing dualisation helps sectoral employment: ↓

Dualisation has no discernable effect: –

Table 7.9: Unemployment Benefits: Types of Dualisation Conducive to Sectoral Employment

take up of jobs in this segment or whether they undermine them, the results clearly show that the motivation effect of standard benefits outweighs the adverse effect of a higher reservation wage once minimum income is controlled for. In this context, accessibility has a larger incentivising effect than duration and amounts of the benefits.

Outcomes with benefits for atypical employees as independent variable further corroborate these results. While coefficients for accessibility and minimum income barely change, benefits for fixed term and part-time employees have a small but positive significant immediate impact and a larger negative impact in the long run. Therefore, unlike benefits for standard workers, higher benefits for non-standard workers seem to erode work incentives in the long run by pushing up the reservation wage. The same calculations were also performed with the centralisation of wage bargaining as a further control which was insignificant in all estimations and consequently dropped.

Key to higher employment in non-dynamic services is thus a low minimum income, keeping the reservation wage down in combination with inclusive accessibility rules, exerting a markedly higher influence on employment than amount and duration of benefits. Greater accessibility obviously does not discourage the acceptance of less well paid jobs, but rather seems to be the largest source of additional work incentives, even if the benefits atypical employees can expect to receive are

slim. The mere prospect of being integrated in social security systems seems to represent an incentive sufficient to rise employment in a segment that otherwise would be considered unattractive. At least if benefits are not too generous—besides higher accessibility only benefits for standard employees have a weak positive effect on employment; financial support for atypical workers, by contrast, has a negative net effect, implying that benefits should primarily reward people who work longer while those with shorter hours and tenures should be handed less. Incentives stimulating work in non-dynamic services hence stem from an unemployment benefit system that is highly inclusive for atypical workers, opening up the perspective to become eligible to benefits quickly, yet with generosity being contingent on how much one has worked before. The minimum income should be low, making first-tier benefits more valuable. Just like manufacturing, non-dynamic services are prone to dualism in unemployment benefits, although the specific shape of dualism is exactly opposite: it manifests itself in a gap between benefits for standard and atypical workers as well as a stingy minimum income, only mitigated by comprehensive accessibility (not necessarily resulting in generous benefits, however).

Productivity in manufacturing has a negative long run multiplier contradicting Baumol's theory of cost disease. Since benefits are controlled for, we would have expected to see a positive sign of manufacturing productivity, indicating that manufacturing workers are

| | MANUFACTURING EMPLOYMENT | | NON-DYNAMIC SERVICE EMPLOYMENT | | DYNAMIC SERVICE EMPLOYMENT | | WELFARE SERVICE EMPLOYMENT | |
|---|-----------------------------|---------------------------|--------------------------------|---------------------------|----------------------------|--------------------------|----------------------------|--------------------------|
| | MODEL 1 | MODEL 2 | MODEL 1 | MODEL 2 | MODEL 1 | MODEL 2 | MODEL 1 | MODEL 2 |
| Lagged Dependent Variable | 0.825*** (0.04) | 0.825*** (0.04) | 0.819*** (0.043) | 0.812 *** (0.043) | 0.83 *** (0.035) | 0.83 *** (0.036) | 0.796 *** (0.042) | 0.799*** (0.041) |
| Δ Benefit for Standard Employees | 0.012 (0.046) | | 0.088** (0.039) | | 0.115 *** (0.033) | | 0.048 (0.032) | |
| Benefit for Standard Employees _{t-1} | -0.022 (0.022) | | 0.009 (0.026) | | -0.016 (0.019) | | 0.028 (0.024) | |
| Benefit for Standard Employees LRM | -0.126*** (0.024) | | 0.047* (0.026) | | -0.092*** (0.02) | | 0.124*** (0.04) | |
| Δ Benefit for Atypical Employees | | 0.004 (0.051) | | 0.082* (0.043) | | 0.085** (0.033) | | 0.067* (0.039) |
| Benefit for Atypical Employees _{t-1} | | -0.029 (0.028) | | -0.018 (0.029) | | -0.014 (0.021) | | -0.02 (0.026) |
| Benefit for Atypical Employees LRM | | -0.164*** (0.031) | | -0.095*** (0.028) | | -0.078*** (0.021) | | 0.002*** (0.005) |
| Δ Accessibility | 0.113*** (0.042) | 0.112*** (0.041) | 0.15*** (0.044) | 0.143*** (0.043) | -0.127 (0.029) | -0.0008 (0.03) | 0.04 (0.034) | 0.032 (0.034) |
| Accessibility _{t-1} | -0.031 (0.032) | -0.029 (0.032) | 0.078** (0.036) | 0.082** (0.036) | 0.018 (0.02) | 0.017 (0.021) | -0.018 (0.026) | -0.02 (0.026) |
| Accessibility LRM | -0.176*** (0.035) | -0.167*** (0.034) | 0.431*** (0.032) | 0.437*** (0.031) | 0.104*** (0.021) | 0.095*** (0.021) | -0.001 (0.0005) | -0.018 (0.046) |
| Δ Minimum Income | -0.019 (0.011) | -0.016 (0.011) | -0.018* (0.01) | -0.017* (0.01) | -0.002 (0.008) | -0.003 (0.008) | -0.009 (0.01) | -0.094 (0.01) |
| Minimum Income _{t-1} | 0.016 (0.008) | 0.017** (0.008) | -0.012** (0.005) | -0.011** (0.053) | 0.001 (0.005) | 0.001 (0.005) | 0.003 (0.007) | 0.002 (0.007) |
| Minimum Income LRM | 0.091*** (0.01) | 0.095*** (0.01) | -0.659*** (0.006) | -0.06** (0.006) | 0.006 (0.005) | 0.007 (0.005) | 0.015 (0.012) | 0.013 (0.011) |
| Δ Productivity in Manufacturing | -0.00001 (-0.000009) | -0.00001 (0.000009) | 0.00005 (0.000007) | 0.000004 (0.000007) | 0.000004 (0.000006) | 0.000003 (0.000006) | 0.000007 (0.000008) | 0.000007 (0.000008) |
| Productivity in Manufacturing _{t-1} | 0.0000024 (0.0000039) | -0.000002 (0.000004) | -0.000003 (0.00004) | -0.000003 (0.000004) | 0.000004* (0.000002) | 0.000004* (0.000002) | 0.00001*** (0.000004) | 0.00001*** (0.000004) |
| Productivity in Manufacturing LRM | -0.000014*** (0.0000038) | -0.00001*** (0.000004) | -0.00001*** (0.000004) | -0.00004*** (0.000004) | 0.00003*** (0.000003) | 0.00002*** (0.000003) | 0.00001* (0.000008) | 0.00001 (0.000008) |
| Δ State Consumption | -0.165*** (0.039) | -0.165*** (0.039) | -0.071* (0.032) | -0.068** (0.032) | -0.072*** (0.027) | -0.071*** (0.027) | 0.131*** (0.029) | 0.131*** (0.029) |
| State Consumption _{t-1} | -0.124*** (0.028) | -0.124*** (0.028) | -0.032** (0.19) | -0.036* (0.019) | -0.032* (0.02) | -0.034* (0.02) | 0.089*** (0.025) | 0.088*** (0.025) |
| State Consumption LRM | -0.709*** (0.03) | -0.715*** (0.03) | -0.179*** (0.02) | -0.19*** (0.02) | -0.2*** (0.02) | -0.2*** (0.021) | 0.191*** (0.043) | 0.191*** (0.043) |
| Centralisation of Bargaining | 0.012*** (0.004) | 0.012*** (0.004) | | | | | | |
| R ² | 0,73 | 0,73 | 0,67 | 0,67 | 0,67 | 0,67 | 0,99 | 0,99 |
| N | 299 | 299 | 299 | 299 | 299 | 299 | 299 | 299 |

*p < 0.1; **p < 0.05; ***p < 0.01 Standard errors in parantheses

Table 7.10: Regression Results for Unemployment Benefits

absorbed by services. Yet this is not reflected in the data. According to the estimations, rising employment in non-dynamic services is no necessary outcome of growing manufacturing productivity. When the impacts of social protection measures and state consumption are controlled for, non-dynamic services rather appear as a way towards higher employment in all such economies where jobs in other, more productive segments—manufacturing or dynamic services—are not available. It fits into this picture that state consumption has negative short and long-term effects on non-dynamic services, reflecting the state's willingness to accommodate excess labour by public employment in social services.

We expect a much smaller influence of social protection on employment in dynamic services as these are not affected by the reservation wage and do not depend on specific skills. In fact, this is broadly reflected in the results of the estimations, showing a significant positive immediate effect of both the unemployment benefit for standard and atypical employees, which is cancelled out almost entirely by a long-run effect working in the opposite direction. The positive short term effect may be due to a transitory boost in motivation to accept jobs since rising benefits are perceived as a top-up to regular pay, but this effect is bound to fade out quickly. The total effect is nearly zero. Both kinds of benefits obviously are not crucial determinants of dynamic service employment. Accessibility has positive coefficients for all time periods, of which only the long-run multiplier is significant. This result is thus in accord with theory, positing that specific features of unemployment protection for atypical employees can serve to make atypical work more appealing relative to standard work. As we see here, just as we have seen with non-dynamic services, it is primarily accessibility that makes private service jobs—and presumptively mainly atypical jobs—more desirable rather than the amount and duration of potential benefits. The influence of minimum incomes is insignificant across all time periods which is just as expected. In a first version, centralisation of wage bargaining was included as additional control, but it turned out

to be insignificant in all estimations and therefore was dropped.

Rising productivity in manufacturing is significantly associated with higher employment shares in dynamic services in the long-run, also when social protection measures are controlled for. This suggests that more advanced industry production is also beneficial for the growth of dynamic services as both may complement each other. A surge of badly paid service jobs is hence not at all a necessary consequence of rising labour productivity in the industrial sector. The results confirm Wren's (2013) alternative argument that employment in dynamic services may turn out to be a viable high-road strategy out of the service transition trilemma should the state not be willing to compensate the losses in manufacturing with public employment (the coefficients of state consumption are negative and significant). Moreover, jobs in dynamic services do not require the existence of welfare dualism to prosper.

Welfare services are thought to be little dependent on social protection given that major parts are public employment governed by political decisions rather than market forces. Both regressions with welfare services as dependent variable yield the results that accessibility and minimum income have neither short nor long term impacts significantly distinct from zero. Only the benefit variables have a positive significant effect, slightly greater for atypical workers, lending tentative support to the hypothesis that greater benefits for atypical workers make this kind of employment more appealing and thereby support job growth in welfare services. In general, however, all social protection variables, regardless of their significance, have a positive long run effect in these estimations, suggesting that the significance of the benefit variables might be spurious, since a more munificent state may simultaneously spend more on public employment as well as on social support. As expected, the coefficient of state consumption is large, positive and highly significant both in the short and in the long term. Also the long run multiplier of productivity in manufacturing is significant in both estimations, con-

firming the assumption that welfare services can pick up some of the employment that is lost in manufacturing, provided that sufficient funding is made available by the public purse.

As a conclusion, more inclusive accessibility seems to help employment in all kinds of services other than welfare (although the effect may be quite low in dynamic services). Once minimum income is controlled for, the prospect to receive unemployment benefits turns out to have a motivating rather than a hampering effect on job seekers' willingness to accept a job on offer. More ambiguous are the results concerning benefits. In non-dynamic services, a combination of greater benefits for standard and slimmer benefits for atypical workers appear to reward the take-up of work while avoiding to drive up the reservation wage. As implied by high productivity, benefits in the long run are almost neutral in their impact on dynamic service employment. Only job growth in welfare services seems to be associated with higher benefits for standard and atypical employees.

In manufacturing, benefits for neither type of employees bolster employment, nor does greater accessibility. This is partly an expected result because strict accessibility and low payments are a disincentive to atypical work. What is surprising is that, at the same time, benefits for standard workers were decreasing without significantly damaging manufacturing employment, contradicting the concept of income protection.

One possible explanation may be that minimum income protection has taken over this function. Manufacturing and services then fundamentally differ from each other in the structure of social security needed to expand employment: manufacturing can do without generous unemployment benefits and merely requires a well established minimum income scheme, whereas services (particularly those with low productivity) flourish with a more restricted minimum income in combination with more accessible, but not necessarily more generous, unemployment benefits. Manufacturing and non-dynamic services then both have the inherent tendency to favour specific forms of welfare dualism whereas dynamic and welfare services may prove as segments allowing for more equal, yet not always more encompassing, social protection.

7.7.2. SICKNESS BENEFITS

The same calculations as with unemployment benefits have also been conducted with sickness benefits as independent variables (see tables 7.11 and 7.12). When the employment share of manufacturing is the dependent variable, we see that sick pay for standard workers has a strong positive and significant influence in the long-run, while the coefficient of accessibility is negative and significant across all time periods. If sick pay for non-stan-

| | STRICT ACCESSIBILITY | DIVERGENCE OF FIRST-TIER BENEFITS BETWEEN STANDARD AND ATYPICAL WORKERS | DIVERGENCE BETWEEN MINIMUM INCOMES AND FIRST-TIER BENEFITS FOR STANDARD WORKERS |
|----------------------|----------------------|---|---|
| Manufacturing | ↑ | ↑ | - |
| Non-dynamic Services | ↑ | ↑ | ↑ |
| Dynamic Services | ↓ | - | - |
| Welfare Services | - | - | - |

Legend:

Increasing dualisation helps Sectoral employment: ↑

Decreasing dualisation helps Sectoral employment: ↓

Dualisation has no discernable effect: -

Table 7.11: Sickness Benefits: Types of Dualisation Conducive to Sectoral Employment

| | MANUFACTURING EMPLOYMENT | | NON-DYNAMIC SERVICE EMPLOYMENT | | DYNAMIC SERVICE EMPLOYMENT | | WELFARE SERVICE EMPLOYMENT | |
|---|--------------------------|---------------------------|--------------------------------|---------------------------|----------------------------|--------------------------|----------------------------|--------------------------|
| | MODEL 1 | MODEL 2 | MODEL 1 | MODEL 2 | MODEL 1 | MODEL 2 | MODEL 1 | MODEL 2 |
| LAGGED DEPENDENT VARIABLE | 0.827*** (0.039) | 0.845*** (0.039) | 0.86*** (0.039) | 0.848*** (0.04) | 0.83*** (0.037) | 0.826*** (0.037) | 0.8*** (0.041) | 0.8*** (0.039) |
| Δ BENEFIT FOR STANDARD EMPLOYEES | 0.06 (0.08) | | -0.002 (0.089) | | -0.062 (0.075) | | 0.096 (0.062) | |
| BENEFIT FOR STANDARD EMPLOYEES _{T-1} | 0.225*** (0.058) | | 0.095 (0.064) | | 0.053 (0.072) | | 0.137** (0.059) | |
| BENEFIT FOR STANDARD EMPLOYEES LRM | 1.296*** (0.06) | | 0.677*** (0.074) | | 0.312*** (0.076) | | 0.086 (0.102) | |
| Δ BENEFIT FOR ATYPICAL EMPLOYEES | | 0.063 (0.047) | | 0.065 (0.051) | | -0.007 (0.032) | | 0.078** (0.039) |
| BENEFIT FOR ATYPICAL EMPLOYEES _{T-1} | | -0.04 (0.034) | | 0.011 (0.039) | | -0.002 (0.025) | | 0.02 (0.034) |
| BENEFIT FOR ATYPICAL EMPLOYEES LRM | | -0.259*** (0.038) | | 0.073* (0.039) | | -0.014 (0.025) | | 0.12** (0.057) |
| Δ ACCESSIBILITY | -0.145*** (0.069) | -0.133* (0.07) | -0.072 (0.076) | -0.089 (0.074) | -0.063 (0.05) | -0.031 (0.055) | 0.1 (0.062) | -0.055 (0.057) |
| ACCESSIBILITY _{T-1} | -0.133** (0.037) | -0.117*** (0.041) | -0.01 (0.036) | -0.011 (0.039) | 0.038 (0.027) | 0.044* (0.025) | 0.035 (0.031) | 0.02 (0.034) |
| ACCESSIBILITY LRM | -0.769*** (0.054) | -0.751*** (0.053) | -0.073** (0.035) | -0.071* (0.038) | 0.222*** (0.03) | 0.253*** (0.277) | 0.021 (0.064) | -0.06 (0.07) |
| Δ MINIMUM INCOME | -0.024** (0.011) | -0.205* (0.011) | -0.022** (0.01) | -0.021** (0.01) | -0.004 (0.008) | -0.004 (0.008) | -0.013 (0.01) | -0.012 (0.01) |
| MINIMUM INCOME _{T-1} | 0.012 (0.007) | 0.016** (0.008) | -0.011** (0.006) | -0.01* (0.006) | -0.00006 (0.005) | 0.008 (0.005) | 0.001 (0.007) | 0.002 (0.007) |
| MINIMUM INCOME LRM | 0.068*** (0.009) | 0.001*** (0.01) | -0.079*** (0.006) | -0.069*** (0.006) | -0.0003 (0.005) | 0.005 (0.005) | 0.013 (0.012) | 0.014 (0.012) |
| Δ PRODUCTIVITY IN MANUFACTURING | -0.00001 (0.000008) | -0.00001 (0.00001) | 0.000002 (0.000007) | 0.0000009 (0.000008) | 0.000002 (0.000006) | 0.000002 (0.000006) | 0.000007 (0.000008) | 0.000006 (0.000007) |
| PRODUCTIVITY IN MANUFACTURING _{T-1} | 0.000002 (0.000003) | -0.000002 (0.000004) | -0.000004 (0.000004) | -0.000005 (0.000004) | 0.000004* (0.000002) | 0.000003 (0.000002) | 0.00001** (0.000004) | 0.00001*** (0.000004) |
| PRODUCTIVITY IN MANUFACTURING LRM | 0.00001*** (0.000004) | -0.00002*** (0.000004) | -0.00003*** (0.000004) | -0.00004*** (0.000004) | 0.00002*** (0.000003) | 0.00002*** (0.000002) | 0.00001 (0.000008) | 0.00001 (0.000008) |
| Δ STATE CONSUMPTION | -0.154*** (0.037) | -0.155*** (0.038) | -0.075** (0.034) | -0.078** (0.033) | -0.076*** (0.026) | -0.078*** (0.027) | 0.127*** (0.03) | 0.124*** (0.029) |
| STATE CONSUMPTION _{T-1} | -0.112*** (0.028) | -0.107*** (0.029) | -0.034 (0.021) | -0.034* (0.021) | -0.034* (0.02) | -0.037* (0.02) | 0.084*** (0.026) | 0.087*** (0.025) |
| STATE CONSUMPTION LRM | -0.646** (0.268) | -0.68*** (0.029) | -0.239*** (0.023) | -0.226*** (0.023) | -0.203*** (0.02) | -0.21*** (0.021) | 0.193*** (0.043) | 0.196*** (0.042) |
| CENTRALISATION OF BARGAINING | 0.008* (0.004) | 0.009** (0.004) | | | | | | |
| R ² | 0,73 | 0,73 | 0,66 | 0,66 | 0,67 | 0,67 | 0,99 | 0,99 |
| N | 299 | 299 | 299 | 299 | 299 | 299 | 299 | 299 |

*p < 0.1 **p < 0.05 ***p < 0.01 Standard errors in parantheses

Table 7.12: Regression Results for Sickness Benefits

standard workers is inserted into the estimation in place of the benefit for standard employees, the coefficients of accessibility do not change, but the coefficient of the benefit index: the effect turns negative. This means that a social security scheme is favourable for manufacturing that is designed in such a way that it hands out generous financial support to standard employees while atypical employees are either excluded through strict qualification criteria or, if they qualify, receive less. Theory had predicted this outcome. High benefits for standard workers serve as income protection expediting the otherwise risky decision to invest in specific skills vital for manufacturers to maintain their competitive advantage. For firms, on the other hand, it becomes more lucrative to focus on segments requiring well trained and highly productive staff rather than specialising in mass production of technically less sophisticated consumer goods. Atypical work is discouraged through lower benefits and strict accessibility, further strengthening incentives for individuals to seek standard employment and specific skills. At the same time, employers are relieved from extra costs incurred from sickness benefits for their atypical staff who constitute no integral part of their core workforce and can be replaced quickly. From the higher positive coefficient of sickness benefits for standard workers we can conclude however, that income protection weighs more heavily in promoting the competitive advantage of manufacturing than the cost-saving effect of less generous accessibility and benefits for atypical workers. The structure of dualism is similar to what we have already seen in unemployment benefits. Atypical employees get markedly worse terms than standard ones in first-tier schemes, but are somewhat compensated by a higher minimum income.

Minimum income, state consumption, and centralisation of wage bargaining show results similar to those we obtained from the estimations with unemployment benefits. The exception is the coefficient of productivity: if the sickness benefit index for atypical workers is included as independent variable, it is negative and significant as expected. Once sick pay for standard workers enters the calculation, the sign of productivity changes,

but stays significant. This change survives also when all other controls are dropped from the equation in a step-by-step procedure. In none of the other estimations such a change of signs occurs. Generally, with all other dependent variables, the coefficients of productivity remain insensitive to variations in the composition of independent variables. Nonetheless, in the case of manufacturing we must interpret the change of sign as a hint that the relationship between productivity and employment may not be too robust.

With non-dynamic services as dependent variable, minimum income, productivity, and state consumption are in congruence with the results from previous regressions. The effect of sickness benefits deviates somewhat from the effect of unemployment support, however. Sick pay for standard workers as well as for atypical workers exerts a positive significant long-run influence on non-dynamic service employment, the standard benefit more so than the non-standard benefit; the unemployment benefit, by contrast, has a similar impact only for standard employees. This result conflicts partly with theory which had predicted that lower benefits for standard employees would be conducive to employment. Obviously, additional incentives to work on atypical terms do not stem from smaller benefits for standard workers. Accessibility has a negative significant long-run multiplier, but is lower than for manufacturing or when the same calculations were performed with unemployment benefits. We can thus conclude that amount and duration of sick pay have no detrimental impact on the number of non-dynamic service jobs despite their possibly cost-increasing effect on employers. The positive impact of retaining staff over longer periods even when they fall sick seems to exceed the higher costs arising from wage continuation. While in manufacturing this link holds only for standard workers, in non-dynamic services it encompasses atypical ones as well, which is only logical given the much higher reliance on this type of work. Considering that the effect is smaller for atypical workers, it must be noted, that standard workers seem to be more essential for a firm's success. Yet the positive influence of sick pay emerges only in presence

of one critical limitation: accessibility is restricted (indicated by a negative coefficient) so that it is available only to a privileged fraction of atypical employees who manage to meet the qualification requirements. That is, generous benefits are focused on those atypical employees who already have proven their value to the employer whereas others remain excluded, reducing the risk of atypical employees misusing sick pay for shirking. At the same time, it opens up an opportunity to employ a secondary group of atypical workers on less favourable terms, performing less crucial tasks and being easy to replace so that retaining them when sick has no benefit for the firm. In terms of dualism, this entails that a social protection arrangement is conducive to non-dynamic services once it largely excludes atypical employees from first-tier benefits and offers no compensation in the form of a higher minimum income. On the other hand, if atypical employees qualify nonetheless, their benefits are comparatively generous.

The picture looks different when employment in dynamic services is concerned. There are no significant immediate effects of any sick pay variable, but there is a positive significant long-run effect of accessibility and of benefits for standard employees. Benefits for atypical employees, by contrast, are negative and insignificant. Minimum income and controls have coefficients similar to those measured when unemployment benefits were part of the estimation. Once again, lower sickness benefits for standard workers seem not to be needed in order to increase the appeal of atypical employment. Rather, a generous benefit for standard employees gives incentives to retain highly productive, often college-educated employees, increasing firms' productivity. This argument even extends to comprise also a large proportion of atypical employees, as can be seen from the positive coefficient of accessibility. Therefore, it does not result in a financial disadvantage if atypical workers are covered by sick pay early on. It might also contribute to make atypical work more attractive and help to make sure that a sufficient number of atypical employees is available. In return for more inclusive accessibility, benefits paid out to non-standard employees might be somewhat lower

than to standard ones, yet this relationship is not significant. Even if the true effect is zero, it would be safe to conclude that it is not primarily amount and duration that make both employers retain atypical workers and job seekers accept non-standard job offers, but it is the prospect of being integrated into the scheme, even in spite of possibly relatively lower benefits. Dualism is thus no prerequisite to employment.

For welfare services the same pattern emerges as does when unemployment benefits are the regressors. Neither accessibility nor minimum income is significant in any of the estimations. Productivity is positive and borderline significant in the long-run, while state consumption exerts a highly positive influence both immediately as well as across future time periods. Standard sick pay is positive significant only in the short-term; shrinking it does not improve the attractiveness of atypical work. For non-standard employees, benefits are also significant in the long-run with the same sign. As with unemployment benefits, social protection schemes seem to play only a subordinate role in creating welfare service employment; the more decisive impact stems from the means the state is able to provide. The positive impact of sick pay may thus be spurious if a state's more pronounced willingness to social spending simultaneously leads to higher benefits and more extensive public employment.

It is clearly visible that manufacturing has the highest propensity to unequal treatment of atypical workers because it is the least dependent on flexible work arrangements, with atypical workers accounting for only a small proportion of total staff. It is reliant instead on a high number of standard workers covered by high sickness benefits, serving as income protection, whereas their non-standard counterparts are frequently excluded or receive less generous benefits. In all service sectors the situation looks more favourable to atypical employees: since fixed term and especially part-time work is pervasive and crucial for each of these segments, it is profitable for firms to perceive non-standard employees as part of their core workforce and to retain at least a fraction of them for longer periods. In low productivity services this seems to be achieved by higher benefits

targeted towards a limited group of atypical employees who meet tough qualification requirements. Atypical workers who fail to do so, however, remain excluded. This way, employers are able to keep some atypical employees as core workers while they can still exploit other atypical employees as a resource of flexible and cheap labour. In dynamic services with higher productivity, cost considerations play a smaller role so that firms can more easily afford to pay sickness benefits and to retain atypical workers. Hence, accessibility of sickness bene-

fits can be high without damaging employment growth; the possibility to leave a fraction of atypical workers without protection to cut costs is limited. In welfare services only amount and duration of benefits can help to increase the employment share. It follows that higher benefits for everyone in combination with greater accessibility are most conducive (or at least not harmful) to dynamic and welfare services. Manufacturing and non-dynamic services, on the other hand, require sickness benefits to be more dualised.

8. CONCLUSION

The patterns of rules by which countries structure their social protection systems are manifold. Breaking these patterns down into their various, constitutive parts opens up a novel, more detailed perspective on the design and evolution of social security. This has become necessary since the economic and societal environment in which such schemes operate has profoundly changed through the growth of service jobs and the associated increase in atypical employment, posing a new challenge to the provision of welfare and thus for research on it. A more traditional approach to comparative analysis of social policy is to focus primarily on replacement rates—the major concern of standard workers. The quality of social security for atypical employees, however, hinges on several more factors, determining whether or not a scheme is beneficial for them. One of these is accessibility, deciding how much volume of work and contributions is needed for successfully filing a claim; another is whether benefits reach the same level of generosity for atypical as for standard workers. And finally, it is minimum incomes, as a complement to contribution based benefits, which are serving as the only financial support many atypical employees will possibly receive. The specific combinations of these four aspects form what is called a social protection arrangement, the analysis of which tells much about a welfare system's capacity to accommodate the needs of different types of employees and the perhaps unequal treatment of standard and atypical workers referred to as dualism.

The set-up of social protection arrangements in the realm of unemployment benefits follows some general patterns. One is that accessibility and minimum incomes serve as functional equivalents, i.e. if access to benefits is heavily restricted, it is often counterbalanced by more extended basic incomes and *vice versa*. Another pattern is the relative conformity of both benefits for

standard and for atypical workers. Substantially lower benefits, specifically targeted to non-standard employees, are thus rather uncommon and not a major source of dualisation. Subtle divergences in benefit amounts and duration do occur, however: more restrictive qualification requirements tend to result in somewhat higher standard benefits and slightly lower benefits for atypical employees, discriminating latter group twice by closing the path to first-tier benefits and, in the less likely case non-standard employees qualify nevertheless, granting them smaller payments. Yet this effect is only small given that benefits are generally similar. High dualisation through tight accessibility rules is therefore only weakly reinforced by divergences in benefits between standard and atypical workers, and mitigated by more extensive basic incomes. The Continental European Cluster with Restricted Protection (Finland, Germany, the Netherlands, Norway) in 2006 or the Exclusive Continental Cluster (Belgium, Denmark, Finland, Germany, Sweden) in 1991 closely match this pattern. A different logic applies to the correlation of benefits for atypical employees with access conditions: they rise in tandem with each other. If accessibility is accommodating, benefits for atypical employees tend to be so as well; the main source of dualisation is then the marginal level of minimum income support. In both 1991 and 2006, it is the Anglo-Saxon and Mediterranean cluster which is paradigmatic for this kind of social protection arrangement.

Against a theoretical backdrop of Esping-Anderse's three worlds it is safe to state that significant shifts happened between 1991 and 2006. In 1991 the three regimes had been clearly discernible; 15 years later they were profoundly transformed. First, the social democratic cluster has ceased to exist as cuts to minimum income support question universalism. The social democratic cluster thus has assumed more conservative

traits. The conservative clusters, on their part, have taken on a novel shape that cannot be easily interpreted in terms of the three worlds typology. Their trajectory has been marked by retrenched accessibility and first-tier benefits, partly compensated for by rising minimum incomes. Insurance based benefits hence increasingly have lost their capacity to status preservation in conservative regimes. Given the relatively high level of basic incomes, they do not simply converge with the liberal model, but rather form something entirely new. I will later in this chapter give some possible political explanations as to why the clusters have evolved the way they have.

How social security is arranged is not a merely academic question. Rather, the shape and evolution of any social protection arrangement has serious repercussions on an economy's employment structure and therefore is capable of releasing significant institutional and functional synergies as well as frictions. The regression analysis discerned several such complementarities in the realm of unemployment benefits. Regarding the manufacturing sector in the period between 1990 and 2008, the retrenchment of first-tier benefits, i.e. accessibility and benefits for both standard and atypical employees, did not result in job losses, even though the hypothesis of unemployment benefits needed as income protection had predicted it. Instead, a hike in minimum incomes turned out to prop up manufacturing employment, suggesting that income protection, securing workers' investments in specific skills, is increasingly provided by basic incomes rather than first-tier benefits. In this context, it turns out that most conducive to manufacturing is a social protection arrangement that is strongly dualised in terms of restrictive accessibility rules, but less dualised in terms of benefits, as a convergence of first and second-tier benefits seems to help employment in this sector.

If the employment share of non-dynamic services is observed, the key result is that, under certain circumstances, unemployment benefits can act as a further reward for otherwise unattractive jobs. For this to happen, benefits need to be easy to come by, yet to be handed out only for a short while and in small amounts, un-

less volume and tenure of previous work grow larger. Minimum incomes need to be universally low. This way, work incentives are not undermined by overly generous wage replacements; rather, if stepping up working time is increasingly compensated for by the entitlement to receive larger benefits, it makes work appear more appealing. Moreover, this affects particularly atypical jobs which become more desirable once they are integrated in unemployment schemes. The specific kind of dualisation promoting employment in non-dynamic services is thus quite different from the sort that is beneficial to manufacturing. It does not result from excluding atypical workers, but from granting better financial support to those who work more, while those who work less also receive less.

Services with higher labour productivity are less affected by the design of social protection arrangements. Employment both in dynamic and welfare services is not hurt by increases in any part of social security considered here.

Sickness benefits take a somewhat different shape. The major difference is that accessibility and minimum incomes do not share a negative correlation, and thus cannot be interpreted as functional equivalents. Instead, they reinforce each other which renders them inherently prone to dualism, since atypical employees who, by strict contribution conditions, are often excluded from first-tier benefits cannot expect a higher minimum income as compensation. A further source of dualism, as already seen in unemployment benefits, is the link between accessibility and benefits, with tighter access leading to slightly lower handouts to atypical workers and *vice versa*. Both types of first-tier benefits are positively correlated, however, limiting the scale of dualisation. In 1991, the cluster consisting of Denmark, Finland, the Netherlands, and Norway is typical for this pattern in that it combines high accessibility with high minimum incomes and moderate benefits for standard workers. On the other side of the spectrum in 1991, it is France, Ireland, and Japan which are tying more generous benefits for standard workers to strict access requirements, supplemented by a comparatively slim minimum in-

come. In 2006, the cluster of Belgium, France, and Spain best fits this pattern.

Altogether, in 1991 sickness benefits can be categorised in accordance with the three worlds typology. There is something like a social-democratic regime with generally extensive benefits, but without strict accessibility rules. The conservative world comes in varying forms: one creates dualisation by means of low minimum incomes, the other one by restricted accessibility

and differences between benefits for standard and non-standard workers. A liberal world exists as well, characterised by equally ungenerous first and second-tier benefits. 15 years onwards, no fundamentally new type of world has emerged as changes to sickness benefits were smaller in scale and frequency than to unemployment benefits. Only Japan and New Zealand form a peculiar own world with surprisingly extended basic incomes and very reduced first-tier benefits. Liberal principles have been on the rise in almost all clusters which manifest themselves in the downward convergence of first and second-tier benefits.

Sick pay has a significant impact on sectoral employment structures, affecting incentives through the channel of employers' costs. In manufacturing, it proves most favourable if sickness benefits are targeted on standard employees, with accessibility being strict and handouts to atypical workers small. Minimum incomes should be large. Through this specific social protection arrangement, the acquisition of specific skills is encouraged as well as the take up of standard work; at the same time, it is accepted that higher dualism through the discrimination of atypical employees in first-tier schemes is a necessary consequence of this strategy.

Similarly, sick pay with restricted access and generous first-tier benefits is supportive also for jobs in non-dynamic services. In contrast to manufacturing, benefits for standard workers may be high without hampering employment growth, while minimum incomes should be low. Employers hence face incentives to retain both standard and a certain number of privileged atypical workers. Thanks to restrictive accessibility, however, large parts of the atypical, non-core workforce remain

excluded from benefits, ensuring that employers' personnel costs do not become excessive. Therefore, the specific form of dualism beneficial for this kind of low productivity service is based on tight access requirements and slim basic support, but is not founded on disparities in first-tier benefits. Neither dynamic nor welfare services exhibit a related propensity towards dualisation.

In summary, the intensified focus on the treatment of atypical workers in social security schemes, first and second-tier, has opened up a promising new perspective in comparative research. Economies combine different dimensions of welfare systems in distinct ways, leading to a large variety of outcomes. Taking these dimension, such as accessibility, minimum incomes etc., explicitly into account, gives a more nuanced view of social protection than one single aggregate figure like the decommodification index. While such a single index can be useful for a whole range of specific research questions, others can be better answered by various, more differentiated measures. Single aspects like accessibility, for example, may have impacts different from benefits'. Even more likely, the distinct combination and interaction of these dimensions may be crucial to the outcomes of a welfare scheme. This has become particularly obvious when the relation of access requirements to unemployment benefits and minimum incomes were examined, which were found to act as functional equivalents. If, for instance, the impact of social security on unemployment is to be analysed, this interaction must be considered: curtailing accessibility is unlikely to result in more employment if minimum income support is still significantly above the reservation wage.

Since this study only aimed at describing the patterns of change and their outcomes, it has remained unanswered why countries have undergone welfare reforms in so varying ways. I present some hypotheses here that might help explain the causes of distinct trajectories. For reasons of clarity, I have illustrated these trajectories on the basis of two particularly characteristic countries, namely Germany and Britain. The latter country is instructive for reforms in a liberal way, lead-

ing to low manufacturing and high non-dynamic service employment: between 1990 and 2008, accessibility of unemployment benefits slightly increased (from 7.2 to 7.5), benefits for atypical workers decreased (from 1.6 to 0.7) as well as the basic income (from 0.29 to 0.25). Unemployment benefits for standard workers did not increase as predicted, yet their further retrenchment in absolute terms was smaller than the retrenchment of atypical workers' benefits (from 0.7 to 0.1). Similar was the evolution of sick pay in Britain: both kinds of benefits were significantly trimmed (benefits for atypical workers from 2.4 to 1.6, benefits for standard employees from 1.2 to 0.6), accessibility remained virtually unchanged. At the same time, broadly in line with the results from the regressions, the share of non-dynamic services increased from an already high number of 28% to 29%; the share of manufacturing declined from 18% to 10%. On the other side, there is Germany, retaining a manufacturing share of 27% (1991) and 18% (2008) which is high by international standards. It is also paradigmatic for the specific way of welfare entitlement reforms in conservative states: over the 1990s, accessibility was becoming slightly more generous, but eventually curtailed over the course of the 2000s, taking it back to the level of 1991 (5.7). Benefits were dramatically retrenched (non-standard benefits from 7.1 to 1.9, standard benefits from 8.3 to 2.1). Basic incomes, however, rose from 0.51 to 0.53. With regard to sick pay, accessibility was made tougher, falling from universal access (10) to much more restrained access (6.8). Benefits went down, but only by a small margin (6.5 to 6.1 for atypical employees, 6.8 to 6.6 for standard ones). All in all, Germany and Britain, as paradigmatic examples of the conservative and liberal world, conducted reforms that would help the former to maintain a high manufacturing share and the latter to have a high proportion of non-dynamic services. The question is, why exactly these countries were following their respective routes.

Starting with Britain and the liberal world, it was Esping-Andersen who argued in 1990 that entitlements were too modest to create broad support to the welfare state among the middle classes (Esping-Andersen 1990:

26). Therefore, in an economic environment marked by polarisation between well-paid, high productivity services and badly-paid, low productivity services, it is convenient to secure an electoral majority in favour of welfare state retrenchment because this allows to more easily push people off the dole and into employment in non-dynamic services. Coinciding with a steep decline in union bargaining power, the wage floor for low-qualified workers becomes substantially lower. Indeed, the withdrawal of support for the welfare state among the middle-class is most conspicuously illustrated by centre-left parties catering increasingly towards the interests of white-collar workers and appealing less to manual workers (Gingrich / Häusermann 2015). As a result, decommodification is no longer pursued as a vital goal of social and labour policy, but replaced by activation. To this aim, benefits and terms of receipt are cut on a large scale. Accessibility, on the other hand, can even be made more accommodating to enhance the incentives to work in atypical jobs necessary for non-dynamic services. Since entitlements are slim, there is no risk that broader accessibility may compromise work incentives or trigger further redistribution. Given the low general level of welfare entitlements, there is no room for and no advantage in reforms increasing dualism. The task to insure against risks of unemployment and illness is more and more taken over by privately organised insurances. These developments altogether may cause what comes close to a vicious circle in the liberal world in which benefit retrenchment leads to further polarisation on the labour market which further promotes welfare cuts. The final point may be the further erosion of the middle-class if no far-reaching measures to promote productivity are taken.

In Germany, the starting position is different. Strong benefit entitlements safeguard the living standard of the middle-class and entrenched unions provide for a more egalitarian wage structure. In this situation, researchers often referred to Germany and other conservative countries as a 'frozen welfare landscapes' unable and unwilling to profound reform. Yet this study has shown that change has been taking place. The reasons

for this are, as Clasen / Clegg (2006) and Clegg (2007) argue, that the welfare state hit its financial limits. With unemployment figures rising, generous benefits for unemployed became unsustainable. Moreover, the welfare state seemed ill-prepared for the equally rising number of atypical workers whose level of social protection through social insurances was trailing far behind that of standard workers. The existing protection schemes were seen as creating a situation of benefit overreach and undershoot, undermining work incentives for the unemployed while withholding proper benefits to the really needy. Persisting unemployment in combination with reinforced financial strains and a perceived unfairness of the existing system then create a political environment that, at least gradually, becomes amenable to reform.

The reform strategy that was pursued is called *re-calibration* by Clegg (2007), i.e. streamlining first and second-tier benefits. In practice, insurance-based benefits were curtailed and basic incomes raised. This way, going back to work becomes more worthwhile for recipients of first-tier benefits and minimum income support is better able to protect those who do not qualify for other kinds of financial support. The main obstacle to more employment was less seen in overly lavish social assistance, but in an insurance system that-sometimes infinitely-protected the living standard of former well-paid employees. A reform strategy of better matching first and second-tier benefits then originates from a logic that, on the one hand, aims to allow for more wage differentiation and, on the other hand, wants to preserve the functionality of a system encouraging heavy employer and employee investments in specific skills. What is searched for is a new balance between activation, sufficient social security to provide for firm-specific skills, and more accommodating support for atypical employees. The outcome, in Germany and elsewhere in the conservative world, is a system maintaining a heavy dualism based on restrictive accessibility, but a mitigated dualism based on lower first-tier and higher second-tier benefits. It is no wonder then, that this sort of reform has frequently been conducted by Social-democratic parties, trying to reconcile the

entrenched interests of the middle-class with the need for more employment without forgetting about atypical employees. It remains to be seen, however, whether or not the conservative model is substantially weakened by the cuts to status preservation; if for this reason the welfare states becomes less favourable to the middle-class it may set in motion a process leading to further erosion of entitlements and a convergence of the liberal model where there are only minor differences between first and second-tier benefits.

Besides unemployment and sickness benefits, there are many more schemes that deserve to be analysed in a similar way. One of them is certainly pensions, being under heavy financial pressure due to demographic change and subject to profound reform efforts in almost all developed countries. Since pensions contribute a great deal to overall tax burdens, they are likely to have a major effect on employment. It thus appears highly promising to develop comparable composite indices assessing pension entitlements of standard relative to atypical employees and their specific forms of dualism. The same applies to schemes such as maternity pay, disability pensions, or paid holidays.

In context of the indices proposed in this thesis, there are several more aspects that need to be scrutinised in more detail. One of them certainly is household size. For reasons of simplicity and practicability, this study has assumed a middle-aged single worker, although a large proportion of workers in fact live with families. Further studies therefore should take into account the presence of a spouse and children. The consideration of additional years, i.e. a longer time series, is also a deserving subject for future studies because many welfare systems had already reached their climax in terms of coverage and generosity in the 1970s and 1980s which were not included in this thesis. A more prolonged time series would allow us to examine whether the social protection of atypical employees was reformed in ways intentionally differing from that of standard workers, whether the relation of both has changed over the years and with it the resulting forms of dualism, and whether there were turning points where the protection of stand-

ard and atypical workers took diverging or converging directions.

Finally, what can governments do to reconcile comprehensive social security with high employment? As we have seen, manufacturing and non-dynamic services both share the drawbacks of being prone to dualisation, albeit in different forms. If in times of advancing tertiarisation a high standard of welfare entitlements is to be preserved without inducing too much dualism, non-dynamic services are not the route to follow. Instead, Anne Wren's argument has been confirmed that high productivity services provide a way out of the service economy trilemma, not only by allowing for more evenly spread wages, but also by allowing for the exist-

ence of a welfare state with universally high benefits, unaffected by the need to selectively exclude specific groups of employees. Moreover, it shows that a deliberate strategy of slowing down service growth in order to retain large manufacturing employment is not the best solution either, as jobs in the industry sector depend on specific skills and standard work, calling for very exclusive welfare schemes. Increasing employment in dynamic services or public jobs, however, makes it possible to unite inclusiveness and generous benefits. Stepping up efforts to increase college education and expanding the range of social services provided by the state thus seems to be the most effective remedy against welfare dualism.

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CHRISTOPHER GATZ

Social Protection of Atypical Employees

Atypical work, i.e. part-time and fixed term employment, has become the new norm in many industrialised countries. Welfare states, however, were traditionally designed to accommodate the needs of standard workers in manufacturing.

This study examines to what extent welfare states have adapted to the proliferation of atypical work in the period of 1990 to 2008. Since the rise of atypical work is closely related to deindustrialisation and an increasing role of services in developed economies, the study also deals with the question how the specific design of welfare schemes has incentivised growth or stagnation of various service sectors.



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