Gender differences in unemployment insurance coverage –
a comparative analysis

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**Abstract**

Social insurance systems are known to reproduce gender inequalities in the labour market. They tend to favour workers with “standard employment contracts” (full-time, permanent, dependent) and often take into account the household constellation through means-testing or the concept of a dependent partner. The design of social insurance systems is thus disadvantageous for women who are more often part-time employed and who, in many systems, will have to rely on the partner’s income instead of an individual unemployment benefit income after a certain period of unemployment.

This paper will look at factors that potentially influence unequal outcomes in unemployment insurance coverage such as hours and earnings thresholds, minimum contribution requirements, methods of calculating benefit amounts that are geared closely to former earnings, and means testing.

In order to generate more representative results the paper will look at the employment situation and household constellation (part-time employment, mobility patterns, gender wage gap) of women in four countries, namely Denmark, Germany, Spain and the United Kingdom. In a second step, the characteristics of unemployment insurance systems are scrutinised that potentially are disadvantageous to women’s coverage rates or benefit levels. Based on the unemployment insurance regulations indicators are constructed from the European Community Household Panel data (ECHP) and used in regression models in order to illustrate how and to which degree the different unemployment benefit systems discriminate against women.

It is expected that individualised unemployment systems (Denmark) will generate more equal outcomes than systems that make early use of strict means-testing (United Kingdom) or that strongly rely on equivalence between income and benefits (Germany, Spain).
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1 Introduction

Social insurance systems are known to reproduce gender inequalities in the labour market. The reasons for this are manifold. First of all, social benefits tend to favour workers with “standard employment contracts” (full-time, permanent, dependent) and thus discriminate against women who more often work part-time. Furthermore, social benefits often take into account the household situation through means-testing and they sometimes still incorporate the concept of a dependent partner. Due to their specific household and labour market position, women thus are expected to be disadvantaged when it comes to entitlement to and level of unemployment benefits.

The following design features of unemployment systems can contribute to inequalities between men and women concerning access to and level of unemployment benefits:

- hours- or earnings thresholds
- minimum contribution periods
- means-testing
- proportionality between earnings and benefit levels

The first two features can restrict the access to benefits. Means-testing can have an influence on both access to and level of benefits. The proportionality between earnings and benefits will have an influence on the benefit levels.

First, hours- or earnings thresholds below which employers and employees do not pay contributions and employees do not receive benefits are detrimental to women’s entitlement to benefits because the share of women in (marginal) part-time employment is much larger than the share of men. Second, in some benefit systems part-time workers need more time to gain access to benefits than full-time workers. What’s more, women tend to change more often between employment and other activities such as household/carer activities and therefore might have greater difficulties to fulfil the minimum contribution requirement within the specific reference period. Third, via the household income the income of a partner can lead to the abolishment or downsizing of unemployment assistance benefits. And fourth, in many benefit systems benefit levels are calculated as a proportion of past earnings – part-time earnings but also the gender wage gap are therefore reproduced in the unemployment benefit system.

Unemployment benefit systems of different countries strongly vary in their aims and design features. It is therefore expected that coverage and benefit levels will be more equal in some countries than in others. In order to test this, the paper looks at four countries that strongly vary in their insurance principles, aims and design. Denmark has a highly individualised voluntary unemployment insur-
ance system with uniformly long-running insurance benefits and no unemployment assistance. Net replacement rates are higher for people with lower incomes. Germany, on the other hand, operates with high ceilings on earnings and benefits. This leads to a strong proportionality between former earnings and benefit levels. Depending on the contribution period, insurance benefits are usually not paid longer than one year. The basic benefit that replaced unemployment assistance is open for all employable people and is paid depending on household income and assets. The design of the Spanish unemployment benefit system is similar to the German one but it is less generous. Unemployment assistance receipt, in contrast to the German and the British means-tested basic benefit, is only paid for a short period. In the United Kingdom, non means-tested benefits are only paid to eligible recipients for a comparatively short period of 6 months. The basic benefit is open to all but means-testing is very strict. Both, the insurance and the basic benefit are paid on a uniform flat-rate basis.

The following paper will compare these four countries by focusing on the above features of benefit systems that potentially discriminate against women and thus lead to unequal outcomes in unemployment benefit coverage. It is expected that benefit systems that are more individualised (Denmark) and that stress welfare principles (Denmark and the UK) will generate more equal outcomes than systems that make early use of means-testing (UK) or that strongly rely on equivalence between contribution time, former earnings and benefit receipt (Germany, Spain). The hypothesis is tested by making use of the European Community Household Panel data (ECHP).

A discussion on the male breadwinner model will form the theoretical basis of the paper. In the second section, based on the European labour force survey data and the ECHP data differences between men and women in the extent of part-time employment, in mobility patterns and wages are discussed. All these factors potentially limit the entitlement of women to benefits. In a third step the unemployment insurance systems of the four countries are scrutinised. The discussion will focus on the design features that influence benefit entitlement and levels. The empirical section makes use of the ECHP data. The descriptive section shows coverage levels for men and women in the four countries and gives some insights into benefit levels. In a further step, indicators are constructed from the ECHP data which capture the design of the country’s benefit systems (hours and earnings thresholds, minimum contribution time and means-testing). They are introduced as independent variables into a random effect logistic regression model in order to exemplify in which ways the benefit systems of the countries restrict entitlement to benefits.
2 Male breadwinner and standard employment

Most information in this section is drawn from German studies – Germany being one of the prototypes of the male breadwinner model. Based on the concepts that are outlined making use of the German example, the other three countries will then be positioned.¹

Labour market institutions and social policies are drawn up in specific national settings. A country’s self-conception rests upon a more or less explicit social contract that is influenced by the traditions and values of a specific society and is therefore path dependent. The social contract is usually made up of a gender contract and an employment contract. In Germany, for example, the gender contract has traditionally been characterised by the male breadwinner model (male provider and housewife), the employment contract by ‘standard employment’ (Normalarbeitsverhältnis) which is dependent permanent full-time employment with high continuity and stability (for a comprehensive definition refer to Hinrichs, 1996: 103). In this constellation standard employment mainly applies to men. It is evident that this social contract no longer reflects reality adequately since women’s labour market participation has increased considerably. Depending on the country, today, one would rather use the labels male breadwinner and secondary earner (or male breadwinner plus) (West Germany), double earner/double carer (Netherlands) or double bread-winner with public service support (Scandinavia) (Holst and Maier, 1998: 515).

Many labour market and social institutions in Germany are still based on the traditional division between male labour and female household work and are therefore centred on standard employment contracts. German social insurance is usually beneficial for people in stable full-time employment, it often takes into account the household composition, and derived rights for married partners (mostly women) are frequent.² Similarly, for the British context, Sainsbury (1996: 55ff) states that the male breadwinner model left its imprint on post-war reforms: the adult dependent allowance and the possibility for married women to not pay national insurance contributions but to rely on their husband’s entitlements instead are recalled.³ Both have been abolished now.⁴ Social benefits that are based on standard employment and the concept of a dependent partner not only manifest women’s dependency and discriminate against deviating life styles but also set disincentives to labour market participation

¹ There is also a considerable amount of Anglo-American literature that criticises the gender bias of the welfare state (compare for example Sainsbury 1996, Rubery et al. 1998, Jepsen et al. 2002).
² In Germany health insurance for non-working partners of employees is free of charge, widow’s pensions exist, and tax splitting financially privileges households with only one worker. Additionally, replacement rates in unemployment insurance are higher for recipients with children.
³ By not paying contributions married women forfeited claims in their own right which resulted in a loss of pensions, sickness allowance, unemployment benefits, and the like. In the early 1970s about 3/4th of married women made use of this possibility.
⁴ The adult dependant allowance was phased out until April 1997; the possibility to opt out of national insurance was abolished in 1977.
and most important in the context of this paper can lead to unequal outcomes in social insurance coverage (compare for example Holst and Maier, 1998: 507ff; Bennett, 2005: 29ff).

Geissler (1998) carries this discussion somewhat further by terming the strong relationship between standard employment and statutory social insurance a particular German employment model of the industrial society. This employment model is socially constructed and encompasses three pillars: living standard security via equivalence between earnings and benefits, security of employment continuity via benefit receipt in times of transitions and derived from the continuity promise family and job planning security. At present more and more people do not fall under this employment model which leads to a shift from employment related security to second class security with welfare character, visible through growing numbers of social assistance recipients. The problem thus is merely transferred to the welfare system which is less centred on employment. The weaker position of women accordingly is not compensated but segmentation in the labour market is reinforced. On the other hand this division strengthens social insurance systems because it relieves them from ‘bad risks’ with discontinuous, low, and short contributions coupled with potentially long benefit receipt.

As can be seen, solutions that grant more encompassing and equal security to all employed people are complex, not only the design of benefits has to be modified but financing principles, and mechanisms also have to be challenged.

What are possible options that make social insurance systems more open? With reference to the German system the equivalence principle and therewith status maintenance are frequently called into question (Petersen, 1989: 95-99; Rolf et al., 1988: 527-531). Hinrichs (1996: 106f), for example, raises the question if more inclusive social insurance would not have to entail a lowering of ceilings in order to achieve financial sustainability. This would call for concessions of standard (male) workers so as to allow a broader group of employees to receive social insurance benefits.5

A further more radical possibility is basic or minimum insurance for all. But minimum insurance is problematic due to means-testing and thus non-compliance with more individualised benefit receipt. More women than men cannot establish entitlement to means-tested benefits because their partners’ earnings surpass the threshold (Luckhaus, 2000: 162). This not only strengthens dependence but by creating unemployment or inactivity traps means-testing can turn out to be more costly than universal benefits (Clasen and van Oorschot, 2002). Individualised benefits based on universal principles that encourage labour mobility and participation might thus be more suitable.

Individualisation of entitlements could be achieved by way of abolishing derived rights. Benefits granted independent of family circumstances do not only free financial resources for more encompassing social insurance but, by countering possible disincentives to work, can also generate additional

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5 A possible downside often mentioned in this context could be lower legitimacy for social insurance and less willingness to pay contributions (Eisen 1988; Hinrichs 1996).
financial means. Gradual individualisation of social insurance entitlements are also called for in order to bring about a modern and egalitarian gender contract that would allow the establishment of a new standard employment situation within reach of men and women (Klammer, 2001: 152f). This new standard employment situation could entail more flexible elements as long as sufficiently high wages and social insurance benefits and therewith financial independence of women would be granted.6

Luckhaus (2000) argues that women are the main problem group if it comes to income security and social protection. Due to unpaid care activities a part of them is excluded from paid employment in the first place, social protection in this case is only possible via a breadwinner (derived rights). Sainsbury (1996: 72) identifies this dependence on the husband as the major shortcoming of the breadwinner model. Another group of women who lack income security are those who change between periods out of and periods in employment – often in part-time or low-paid work. Social insurance entitlements in this case can be restricted due to earnings or hours thresholds. Furthermore, if benefits are closely linked to former earnings social insurance payments will be low. Therefore social protection systems tend to reproduce disadvantages of women in the labour market – often brought about by care obligations – rather than to remove them.

Luckhaus (2000: 174ff) emerges with two possible notions of women’s social protection. The first takes up women’s disadvantages in social protection arising from their engagement in unpaid work, the second focuses on financial independence from a partner. Luckhaus criticises that in theoretical debates both principles are treated exclusively and are even pitted against each other. Concerning unpaid care work she argues against dependency-related provisions in social insurance and instead calls for caring credits, caring allowances, or improved child-care services that may be combined with individualisation of entitlement. Although this would generate a better and more stable position of women this combination would not provide a solution to the income insecurities experienced by part-time workers and low-paid which are not linked to unpaid work activities.

How can the four countries be characterised from a theoretical viewpoint if some of the above concepts are used?

Germany, as the prototype of continental European countries, seems to be especially ill-suited to more labour market flexibility (part-time work) and women’s economic independence (compare for example Esping-Andersen, 1995: 68). This is mainly due to the prevalence of the equivalence principle, derived rights, and benefits based on household composition. Relatively generous benefits are thus paid to labour market insiders while outsiders have to rely on minimal state support as a last resort

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6 Especially in the German context the focus should turn away from supporting non-employment through social policy and tax arrangements. This would set free money for better securing those who are willing or forced to take up non-standard employment in order to participate in the labour market. A new standard employment relationship would call for concessions by men who would have to trait some of their employment stability and employment extent against stronger participation in household and care activities.
The situation is similar in Spain: the male breadwinner model coupled with deficient child-care and low labour market participation of women is still very strong, according to Fassler-Ristic (1999) social insurance is heavily targeted on standard employment. In Denmark, on the other hand, equal rights of women to participate in standard employment have for a long time been supported through encompassing child-care and individualised entitlement (compare for example Holst and Maier, 1998: 507; Esping-Andersen, 1999). The United Kingdom’s social insurance system incorporates some elements of minimum insurance for example flat-rate unemployment benefits. Private insurance, with its discriminating effects on low income workers, is therefore more important here than in other countries (Fink, 1999b). Derived rights in social insurance have been common but have gradually been reduced since the mid 1990s (Jepsen and Meulders, 2002: 112ff). Strict means-testing, on the other hand, sets in at an early stage.

3 Women, employment and the household context

3.1 Part-time employment and employment rates

Part-time employment can contribute to disadvantages that women in comparison to men face in access to unemployment benefits and it can also negatively affect the level of unemployment benefits if they are calculated as a basis of the former income. In 2006, overall part-time employment rates in the countries that are analysed here are 12.1% in Spain, 22.9% in Denmark, 24.5% in the United Kingdom and 25.3% in Germany (Eurostat 2006). But in all four countries part-time employment shares are considerably higher if we exclusively look at women. About 45(42)% of German (British) women work part-time. In Denmark and Spain the shares are about 36% and 23%. Part-time employment as share of total employment is marginal among men slightly surpassing 10% only in Denmark. The fact that the level of education is inversely related to the part-time employment rate of women makes the situation even more worrisome. In Denmark and the United Kingdom the part-time employment rate of low qualified women is slightly above 50%, in Germany it’s close to 50%, in Spain it is 30% (Eurostat 2006). The concentration of workers with low educational attainment in part-time employment is especially problematic because the coupling of low hours and low hourly wages leaves them with marginal income which in many welfare states is carried forward into the benefit systems.

In 2006, average weekly hours of female part-time workers lay between 18 hours in Germany and 20.7 hours in Denmark. In all four countries women’s average part-time hours are somewhat

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7 The following statistics are based on the European Labour Force Survey data. They refer to the 2nd quarter of 2006. The distinction of full-time and part-time employment in the Labour Force Survey data is based on self-assessment of the interviewed persons and thus depends on whether a person perceives his employment contract as part-time or full-time.

8 In Denmark this result is driven by the fact that part-time employment is often used by students who have not yet reached their highest education level.
higher than men’s but only in Denmark is this difference considerable with average weekly part-time hours of men at only 14.1 hours.

In Spain and especially Denmark the share of part-time employment is highest among young people, in Germany, on the other hand, part-time employment increases with age, the part-time employment rate of middle aged women is about twice the rate of young employees. In the United Kingdom part-time employment of women is high among all age groups (Eurostat 2006). An important question is if part-time employment is exercised voluntarily or not. Figure 1 shows that only in Denmark a considerable share of part-time workers did not want a full-time job in the first place (about 40%) while in the other three countries this is only true for between 10% and 15% of part-time workers. In the United Kingdom and especially Germany the majority of the respondents work part-time because of family responsibilities – in the prime-age group of women the shares are about 70% in both countries. In Denmark and to a lesser degree Spain, family responsibilities are not an important reason for working part-time. In Denmark this can be lead back to high child-care facility coverage especially for very young children this will be regarded in the following section (Eichhorst et al., 2001: 414). In Spain, on the other hand, permanent withdrawal from the labour market after marriage or child birth is still common (OECD, 2002: 70-73). The fact that in contrast to Denmark and Spain in both, the United Kingdom and Germany, part-time workers are more likely to be married than the overall population further supports the existence of an extended male bread-winner model in the latter two countries.

**Figure 1: Reasons for women (15-64) to work part-time, 2006**

Source: Eurostat LFS data.

If we look at the influence of the presence of children on employment rates of women we see that the general patterns are similar in Germany, Spain, and the United Kingdom: employment rates are highest for women without children and decrease with the number of children. The differences between women without and women with two or more children are highest in Germany followed closely by the United Kingdom. The distribution in Spain is closer but employment rates among women are
generally very low. In Denmark, high women’s employment rates are even higher for women with one child than for women without children – the presence of two or more children does not have a negative influence on women’s labour market participation (OECD, 2002).9

Figure 2 reports which part of working mothers combine work and family via part-time employment. The part-time employment profile of mothers is very similar in the United Kingdom and Germany: children significantly increase part-time employment among women but further reduce already low part-time employment rates among men. Part-time employment among women with at least two children surpasses 60 percent whereas the part-time rates of women without children lie at about 20 percent. The results for Spain confirm that part-time employment fulfils a different function – part-time employment rates do not vary strongly between women without and women with children. The results for Denmark are in line with the non-importance of familiar or personal responsibilities as reason for working part-time. The number of children does not increase the part-time rate of women – to the contrary – women with one child not only have higher employment rates than women without children but they also work part-time less often.

**Figure 2: Part-time work among prime-age women by presence of children (under 15 years) in 2000**

![Graph showing part-time work among prime-age women by presence of children in 2000](image)


Why are Danish mothers able to work full-time? OECD (2001) demonstrates that there is a positive relationship across countries between policies designed to improve the reconciliation of work and family (formal child-care coverage and paid maternity leave policies) and women’s employment rates. Similarly, Lind et al. (1999: 223-226) argue that declining part-time rates in Denmark are due to the strong expansion of public child-care facilities that allow women to deliberately decide for full-

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9 In Europe there is today a positive correlation between fertility and women’s paid employment – the higher the rate of female employment, the greater the level of fertility. For more information refer to Esping-Andersen 1999.
time employment. For the United Kingdom, on the other hand, they argue that many women work part-time in order to fit in care for children in the absence of sufficient state provided child-care. Indeed, coverage with formal child-care facilities especially for very young children is much higher in Denmark (64% in 1998) than in the other three countries (OECD, 2001).\textsuperscript{10} If mothers or in the long run parents were free to choose between part-time and full-time employment, inadequate benefit coverage of part-time work would be less of a problem.

3.2 Mobility patterns among women and men

Figure 3 illustrates that except for Germany women are considerably more likely than men to exit employment.\textsuperscript{11} Figure 3 does not distinguish between different types of exit (unemployment, inactivity, housework, education or other activities). In Denmark and the United Kingdom, for example, after 15 month of employment about 28(21)% of women left employment at least for a short period while this is true for only about 20(15)% of men. Exit probabilities are considerably higher in Spain among both men and women – after 15 month of employment about half of all women have left the labour market at least for a short period.

Figure 3: Exits from employment for prime age male and female workers (cumulated failure rates)

Source: Own calculation based on ECHP data (1994-2001), multiple spells per individual are possible, age: 25-55.

\textsuperscript{10} In 2000, formal coverage rates for children younger than three are 34% in the UK and 10(5)% in Germany and Spain. For children from 3 to mandatory school ages formal coverage rates get closer between the countries but are still highest in Denmark.

\textsuperscript{11} Figures 3 and 4 are based on life tables which are commonly used to present results from event history analysis in a descriptive way. See annex 2 for more information on the method.
In all countries part-time workers are more likely to exit employment but countries vary markedly in the extent of the differences.\textsuperscript{12} Failure rates of full-time and part-time workers are closest in Germany, followed by the United Kingdom whereas part-time workers show much higher exit rates than full-time workers in Denmark and especially in Spain (compare Figure 4). The hazard of exit is very high during the first 24 month of recorded employment which might be especially problematic because people might not have spent enough time in employment to be entitled to unemployment benefits. After two years about 35 percent of part-time workers in Denmark and about 62 percent in Spain have left employment at least for a short period. The higher incidence of exits from employment to non-employment among part-time workers in Denmark and in Spain as compared to Germany and the United Kingdom might at least in part be due to the fact that part-time contracts in Denmark and especially in Spain are more often of a temporary nature.

**Figure 4: Exits from employment for prime age full-time and part-time workers (cumulated failure rates)**

Source: Own calculation based on ECHP data (1994-2001), multiple spells per individual are possible, age: 25-55.

If we compare year to year transitions of full-time and part-time workers between men and women we see that female full-time employment is less stable than male full-time employment in all countries whereas female part-time employment is much more stable than male part-time employment

\textsuperscript{12} The differences between countries are supported by the log-rank test for equality of survivor function. In all cases, the probability that subgroup differences occur by chance is less than 0.000. The null hypothesis of no subgroup differences in survivor functions can thus be rejected (StataCorp, 2005).
(compare Tables 1 and 2). The transition matrix actually reveals that part-time employment exercises a very different function for men and for women: not only are men more likely than women to change from part-time employment to unemployment (except for Germany) and especially education but they are also considerably more likely to make upward transitions to full-time employment. In contrast, in Denmark, Germany, and the United Kingdom around 50% of prime age female part-time workers in a given year are still part-time employed four years later, this is true for about 40% of female part-time workers in Spain (see annex 1, Table 9).

Table 1: Transitions from full-time and part-time employment for prime age women

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<tr>
<td></td>
<td>full-time</td>
<td>part-time</td>
</tr>
<tr>
<td>full-time</td>
<td>DK 91.13</td>
<td>3.46</td>
</tr>
<tr>
<td></td>
<td>DE 89.21</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>SP 85.42</td>
<td>4.02</td>
</tr>
<tr>
<td></td>
<td>UK 87.58</td>
<td>6.55</td>
</tr>
<tr>
<td>part-time</td>
<td>DK 17.42</td>
<td>72.16</td>
</tr>
<tr>
<td></td>
<td>DE 15.89</td>
<td>70.91</td>
</tr>
<tr>
<td></td>
<td>SP 24.12</td>
<td>51.96</td>
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<tr>
<td></td>
<td>UK 15.30</td>
<td>69.94</td>
</tr>
</tbody>
</table>

Source: own calculation; pooled and weighted ECHP data 1994-2001, employment refers to employment of more than 1 hour, age: 25-55 years.

Table 2: Transitions from full-time and part-time employment for prime age men

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<thead>
<tr>
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<tbody>
<tr>
<td></td>
<td>full-time</td>
<td>part-time</td>
</tr>
<tr>
<td>full-time</td>
<td>DK 96.20</td>
<td>0.77</td>
</tr>
<tr>
<td></td>
<td>DE 94.28</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>SP 92.79</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>UK 94.88</td>
<td>1.00</td>
</tr>
<tr>
<td>part-time</td>
<td>DK 46.01</td>
<td>40.42</td>
</tr>
<tr>
<td></td>
<td>DE 36.50</td>
<td>42.44</td>
</tr>
<tr>
<td></td>
<td>SP 53.34</td>
<td>28.48</td>
</tr>
<tr>
<td></td>
<td>UK 43.86</td>
<td>40.33</td>
</tr>
</tbody>
</table>

Source: own calculation; pooled and weighted ECHP data 1994-2001, employment refers to employment of more than 1 hour, age: 25-55 years.

We already saw above that in all four countries part-time workers are more likely to exit employment than full-time workers. Especially exits to inactivity which include household activities are much more important among part-time workers than among full-time workers. At about 2.5% compared to the other three countries year-to-year transitions of female part-time workers to inactivity are low in Denmark – they are almost 15% in Spain. Women full-time and part-time workers are considerably more likely to enter inactivity than men – this is especially true in Spain and the United Kingdom.

To sum up, continuous employment periods of women are not only shorter than those of men but on top men – who represent a much lower share of part-time workers – are more likely to exploit the stepping-stone function of part-time employment while women tend to remain in part-time employment over longer time periods.
3.3 The gender pay gap

If the differences between the relative pay of men and women are regarded without controlling for full-time and part-time employment in the four country groups of concern here (liberal, continental, social democratic, and Mediterranean) around half of all women are positioned in the bottom third of the earnings groups while this is true for only about 20% of men (Eurofound, 2007). Within part-time work, the differences in wages for male and female workers are relatively small but when full-time employment is regarded, the wage gap between men and women is very important. Women are especially underrepresented in the top third of the income scale (ibid).

In 2004, differences between women’s and men’s average gross hourly earnings – thus not taking into account the much higher shares of part-time employment among women – amount to 15% in Spain, 17% in Denmark, 22% in the United Kingdom and 23% in Germany (calculated as percentage of men’s average gross hourly earnings considering only paid employees). There are no clear trends towards a reduction of the gender pay gap. In contrast, in Denmark and Germany the gender pay gap even increased over the last 10 years. In 2001, in all countries, the gender pay gap was largest for the age group 55 to 64 but also present in the age group 16 to 24. Concerning educational attainment and the gender pay gap, there is no common trend: in Denmark the gender pay gap is highest for people with high educational attainment while in Germany and Spain it is highest for people with low educational attainment (no data for the UK) (European Commission, 2006a).

4 Unemployment insurance and part-time employment

Luckhaus (2000: 152) and Rubery et al. (1998: 156) recall different barriers that may restrict social insurance entitlements for part-time workers. First, the requirement of being in paid work for a certain number of hours or earning a certain amount per week, second, eligibility conditions which require a continuous employment history and third, a method of calculating benefit amounts that is geared closely to former earnings. These three design features of unemployment insurance systems will now be examined. Additionally, means-testing and specific legislation directly geared to part-time workers is considered. A general problem of describing insurance systems is that they are constantly evolving. The following sections will focus on the present situation and will in some points recall developments over the 1990s. Table 3 in the end of this chapter will give a synopsis of the unemployment insurance rules concerning part-time workers.

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13 Eight country groups based on a modified Esping-Andersen typology are used in the report for presenting the results, among them a liberal group (UK, IE), a continental group (DE, BE, FR, LU, AT), a social democratic group (DK, NL, FI, SE), and a Mediterranean group (ES, EI, IT, CY, MT, PT). No single country results are presented.
4.1 Main features of the unemployment insurance systems in the four countries

Unemployment insurance in **Denmark** is voluntary, about 80 percent of the labour force is insured against unemployment. There is no unemployment assistance schemes, the municipalities are responsible for labour market integration and social security of people who are not insured and people who do not qualify for insurance benefits. The Danish unemployment insurance system is administered by more than 30 independent unemployment insurance funds that cover different sectors and occupations and are closely associated with the trade unions but subject to directions by the Ministry of Employment. The unemployment insurance funds are not only open to employees but also to people who participate in apprenticeship training or military service (both groups receive reduced benefits), to civil servants and self-employed. Admission in one of the funds may take place on a full-time or a part-time basis, a minimum of one year membership is a precondition for access to unemployment benefits, self-employed have to fulfil a waiting period of four weeks before they can receive benefits (European Commission, 2004: 276-301). Unemployment insurance is state financed through the unemployment benefit fund the income of which derives from the following sources: income related contributions paid together with income tax by employees and self-employed and since 1997 also employers, contributions to the unemployment insurance funds plus an administration fee which are independent of income but dependent on status (full-time or part-time), contributions from employers in the form of a special value-added tax of three percent and transfers from the state. In 2000, total labour market contributions to the three labour market funds, one of which is the unemployment benefit fund, amounted to eight percent of earned income and profits from self-employment.\textsuperscript{14} Earnings-related contributions are also paid by non-insured persons (Danish Ministry of Labour, 2001). Although the benefit period has been shortened to four years (one passive year and three active years) in international comparison it is still very long (Braun, 2001: 659ff; Lind, 1999: 195ff).

In **Germany**, unemployment insurance is obligatory for all employees (manual, white-collar workers and trainees) who are not marginal workers. Civil servants and most groups of self-employed are excluded from unemployment insurance. The main responsibility for unemployment insurance and active labour market policies lies with the Federal Labour Agency (Bundesagentur für Arbeit). Regional labour directorates and local labour agencies are responsible for job placement and training. Unemployment benefits consist of unemployment insurance (Arbeitslosengeld I) and a minimum flat-rate benefit (Arbeitslosengeld II) for all unemployed who are capable of work and who are not or no longer eligible for unemployment insurance benefits. Unemployment insurance and a large part of active labour market policy measures are financed by employer and employee contributions which are

\textsuperscript{14} The rate of contribution payments as a proportion of earnings was very low before 1994 (about 2 percent of average earnings) and there was almost complete reliance on general taxation as a means of financing social security expenditure (Rubery et al. 1998).
presently fixed at 3.25 percent of the wage each, additionally, there is deficit financing by the state. Unemployment assistance used to be financed by the federal state; the new basic unemployment benefit is financed by both federal state and local authorities.

The modern Spanish unemployment insurance was established in 1980 by the Ley Básica de Empleo. The State Public Employment Service (Servicio Público de Empleo Estatal, SEPEE) manages the unemployment benefits. Social insurance is compulsory for employees and assimilated groups. Unemployment benefits consist of unemployment insurance (prestación contributiva por desempleo) and unemployment assistance (subsidio por desempleo). People not qualifying for unemployment benefits can gain access to social assistance which is administered by the autonomous communities and not uniform over the whole country. Unemployment benefits are financed by employers’ and employees’ contributions, contributions are usually 7.55 percent of which 1.55 percent is paid by the employee and six percent by the employer. The state covers some of the cost of unemployment benefits (European Commission, 2004: 89). Expenditure on passive and active labour market policies measured as share of the GDP is considerably lower than in Denmark and Germany – especially if the unemployment rate is taken into account – but higher than in the United Kingdom (OECD, 2003). Since 1997 employer’s enjoy reduced social insurance contributions if they hire people with specific characteristics on the basis of a permanent contracts (Bertelsmann Foundation, 2001: 40ff). The Spanish unemployment insurance was thoroughly revised in 1992 mainly due to financial strains of the system (Toharia and Malo, 2000: 320ff).

The present British insurance system is based on the Jobseeker’s Act of 1995 which replaced unemployment insurance and social assistance by the so-called Jobseeker’s Allowance (JSA) which is granted to all people who are capable of work. Jobseeker’s Allowance consists of two different benefits: contribution-based Jobseeker’s Allowance and income-based Jobseeker’s Allowance. In the United Kingdom all employees are compulsory insured. Self-employed who become unemployed can claim means-tested income-based Jobseeker’s Allowance. Means-tested benefits predominate because contribution-based benefits are only paid for a period of six month. The financing of unemployment insurance takes place via employers’ and employees’ income related contributions to National Insurance and subsidies by the state. Due to the fact that social insurance contributions are not directly attributable to a certain benefit and that benefits are paid out on a flat-rate basis, the insurance principle is very weak in the UK (Schmid and Reissert, 1996: 243).

4.1.1 Hours and earnings thresholds limiting access to benefits

In many countries hours and/or earnings thresholds are specified that exclude people who work low hours or earn wages below the threshold from contributions to social insurance and accordingly also from access to benefits. Employment of this kind is usually referred to as marginal employment. For international comparison a 15 hours threshold is often defined although there are variations be-
tween countries and also within countries over time. Marginal employment is for the most part taken up by women. At present, income related rules for marginal employment exist in the United Kingdom and Germany, working time related rules used to exist in all four countries but were abolished (see synopsis, Table 3).

In Denmark, until January 1994 part-time workers needed at least 15 hours of weekly employment during the past ten weeks before being accepted as part-time member of an unemployment insurance fund (Fink, 1999a: 101; Delsen, 1995: 118). Now, basically, access to unemployment insurance funds is possible from the first hour of work on, in reality entitlement is limited though by minimum qualifying requirements as will be seen in the subsequent part (Braun, 2001: 651f). In Germany, with the recent Hartz reforms, the 15 hours limit for unemployment insurance liability has been abolished but the maximum earnings for marginal part-time workers that are not liable to social insurance contributions have been raised to €400 (Bundesgesetzblatt, 30. Dezember 2002). The hours threshold of 12 hours a week that has been introduced in Spain in 1993 was abolished again in 1998. Part-time workers are entitled to unemployment insurance benefits in proportion to their working hours irrespective of how little time they work (Royal Decree No. 15/1998). In the United Kingdom earnings thresholds apply to social insurance contributions and receipts. In 2006/2007 the lower earnings limit is £84 (€124) a week; the primary earnings threshold is £97 (€143) a week (Law Centre, 2006). Earnings below the lower earnings limit are not liable to National Insurance contributions and do not give access to unemployment insurance benefits (contribution-based Jobseeker’s Allowance). For wages between the lower earnings limit and the earnings threshold no contributions are paid but employees gain entitlement to contribution-based unemployment insurance benefits.

4.1.2 Minimum contribution period as access barrier

The European Foundation (2003: 69) based on comprehensive country studies argues that the contribution period needed for entitlement or re-entitlement to benefits plays an important part in access to unemployment insurance for workers on flexible contracts. In particular calculation methods based on full days of work risk putting part-time workers at a severe disadvantage.

In Denmark, since 1997 the contribution period is 52 weeks of employment (usually full-time hours within the industry) within a reference period of three years. Additionally a one year membership in an unemployment insurance fund is required. For part-time employees (part-time insured) the employment requirement is 34 weeks of full-time equivalent employment (Rubery et al., 1998: 158; Fink, 1999a: 100). This requires continuous employment of eight hours a week during the three preceding years or shorter work periods at higher hours. Renewal of rights to unemployment insurance

15 Full-time equivalent is defined as full normal working hours within the trade or occupational field. In most cases this are 37 hours.
benefits is possible after 26 (17) weeks of work within the last three years (Hansen, 2002: 28ff). In Germany, since January 2006, the minimum eligibility requirement for unemployment insurance benefit receipt is twelve months of contributory employment within two years preceding the onset of unemployment (SGB III, § 123, 124). Due to the fact that months and not days or hours of employment are the basis of the eligibility requirement in Germany, part-time workers who surpass the earnings threshold and thus pay social security contributions have the same chance as full-time employees to qualify for benefits. In Spain a minimum of 360 days of work are required during the six years immediately preceding unemployment. From 1994 on qualifying for unemployment insurance benefits was more difficult for part-time workers and especially for those with low hours because real working time instead of working days was counted as contribution period. Since 1999 unemployment insurance entitlement is once again based on days worked (Fassler-Ristic, 1999: 374-379). Entitlement rules which are based on working days instead of weeks or months render access to benefits more difficult for part-time workers who work less than five days a week. Due to the application of the proportionality rule (contribution time to benefit time) this also affects the duration of benefit receipt in Spain (Ministerio de Trabajo y Asuntos Sociales, 2006a). In the United Kingdom, the qualifying criteria for contribution-based Jobseeker’s Allowance stipulate that in one of the two tax years prior to the calendar year in which the claim is made contributions must have been paid that amount to at least 25 times the minimum contribution (lower earnings limit) for that year. As a further requirement contributions paid or credited in each of the two tax years have to amount to at least 50 times the minimum contribution (European Commission, 2004: 845; Hansen, 2002: 27, 28). Contribution requirements are thus more difficult to fulfil for persons with low earnings (for instance part-time workers). Especially problematic is a combination of low earnings and discontinuous employment.

4.1.3 Net replacement rates

There is a range of possibilities for calculating replacement rates and adapting them for part-time workers. Unemployment benefits are often determined as a percentage of the former wage (Germany, Spain), another possibility are maximum unemployment benefits that vary between former full-time and part-time workers (Denmark). Uniform unemployment insurance benefits of a flat-rate nature (United Kingdom) are seldom. Groups with low average earnings such as part-time workers, low qualified, and on average also women, receive lower benefits than high-wage groups in countries where benefits are calculated as a direct proportion of previous earnings. Upper thresholds that cap the

16 Recently, Spain’s Constitutional Court ruled that present regulations on contributions required for getting access to social security benefits discriminate against part-time workers and indirectly also against women. The court called for an annulment of the corresponding legislation (Albarracín 2005).

17 Contribution credits are added to the contribution record when a person is unemployed, not capable of work, on a carer allowance or on Statutory Maternity pay and the like. Contribution credits are often not granted automatically and furthermore do not in all cases count towards the contribution requirement for contribution-based Jobseeker’s Allowance (Social Security Regulations, No. 2367).
benefit level at a specific point can modify this effect and redistribute benefits towards lower income
groups (Denmark). More equitable treatment of lower income groups takes place in systems where
benefits are paid as a fixed amount or where a minimum or maximum replacement income is granted.
Equitable compensation as such does not have to be an appropriate measure though because in the
case where it is very low which is usually the case with flat-rate benefits it is unfavourable to all
groups (compare Rubery et al., 1998: 168ff).

If benefit levels are strongly linked to past income, part-time workers risk finding themselves
with an income that does not enable them to make ends meet. This problem can be attenuated through
high replacement rates decreasing with growing income or by way of a guaranteed minimum benefit
amount that can either be granted directly via the unemployment insurance system or indirectly by
way of supplementing insurance benefits with social assistance. What are the specific rules governing
the calculation of net replacement rates in the countries under observation – are they beneficial for
former part-time workers or do they grant only low replacement income?

In Denmark net replacement rates are high for former low income workers. 90 percent of the
reference earnings are granted. There are no ceilings for contribution payments but the maximum
benefit amount is currently DKK 3335 (€447) per week which leads to net replacement rates that de-
crease with growing former income (European Commission, 2006b: 110). Part-time insured persons
pay two-thirds of the contributions to the unemployment insurance fund, the ceiling for their benefits
lies at two-thirds of the maximum rate of a full-time insured person (Parsons et al., 2003: 16; Jensen,
1999: 2). At present the ceiling for part-time insured is DKK 2225 (€298) per week (The National Di-
rectorate of Labour, 2006 (February): 10). In Germany net replacement rates vary with the family
circumstances. People without family obligations receive 60 percent of former net earnings; people
with children receive 67 percent. Compared to Denmark earnings ceilings are very high at €5150
(€4350) per month in the old (new) Länder (European Commission, 2004: 284). Whereas in Denmark
net replacement rates visibly decrease with growing former earnings (low income is rewarded with
higher net replacement rates), high ceilings in Germany lead to constant net replacement rates over a
large income margin. In Spain the replacement ratio is 70 percent which is paid for the first six
months of unemployment and is then decreased to 60 percent (Bover et al., 2002: 258). As in Germany
unemployment insurance benefits do not only take into account the former income but also the family
situation. There are minimum and maximum unemployment insurance benefits. The minimum unem-
ployment insurance benefit for part-time workers is reduced proportionally to the hours that have been
worked (Ministerio de Trabajo y Asuntos Sociales, 2006a). The United Kingdom grants flat-rate un-
employment benefits (usually in combination with housing benefits) instead of replacement income
related to previous earnings. In the case of unemployment insurance (contribution-based Jobseeker’s
Allowance) the amount of the flat-rate benefit exclusively depends on the age of the recipient; the
benefit is lower for recipients who are younger than 25 years. The level of the flat-rate compensation
does not vary between former full-time and eligible former part-time workers but is very low in international comparison (Mohr, 2004: 294-298).

4.1.4 Unemployment assistance and means-testing

In contrast to unemployment insurance, unemployment assistance and social assistance benefits are usually means-tested; in most countries they do not give rise to the same range of active labour market policies as insurance benefits. Compared to other West European countries Denmark is characterised by a very long duration of insurance benefit payments that are coupled with obligatory participation in active labour market policies. There is no unemployment assistance in Denmark but people who are not insured or who do not fulfil the eligibility criteria for unemployment insurance benefits can claim means-tested social assistance benefits which are administered by the municipalities. The level is higher for recipients with children. In Germany, since 2003, the minimum duration for unemployment insurance benefits is 6 months the maximum duration 12 months (18 months for people above 55 years with long contribution records). The benefit period depends on the contribution record. People who exhaust their insurance benefits or who are not eligible to insurance benefits receive a low flat-rate basic allowance (Arbeitslosengeld II) which is subject to means-testing. The level depends on the family situation. Until 1999 people who had been employed subject to social insurance contribution for at least 150 days within the reference period were entitled to income-related means-tested unemployment assistance. From 2000 until the end of 2004 unemployment assistance was only granted to those who had exhausted their unemployment insurance entitlement. In Spain, insurance benefits are paid between 4 months and 2 years depending on the contribution period. The minimum contribution period of twelve months gives rise to four months of benefit receipt. Means-tested unemployment assistance is granted either as a follow-up benefit or in the case that a person is not eligible for insurance benefits. Eligibility depends on the contribution record; the level and duration of benefits additionally depends on age, and family responsibilities of the beneficiary. The duration of unemployment assistance ranges from 3 to 30 months (Ministerio de Trabajo y Asuntos Sociales, 2006b). In the United Kingdom the uniform duration of unemployment insurance benefits (contribution-based Jobseeker’s Allowance) was cut from twelve to six months in 1996. Means-tested income-based Jobseeker’s Allowance can be granted as follow-up or alternative benefit for an unlimited period. The level generally is the same as for unemployment insurance but the household situation is taken into account and means-testing applies. It is only granted if the partner of the recipient does not work more than 24 hours and savings do not exceed £8000 (Department for Work and Pensions 2006). In order to ensure consistent activation of all employable groups, it is administered by the same authority as contribution-based Jobseeker’s Allowance.\(^\text{18}\)

\(^{\text{18}}\) For information on the specific rules of means-testing that apply to the four countries refer to (European Commission, 2006b).
4.1.5 Specific legislation benefiting former part-time workers

In some countries special rules which are beneficial to part-time workers are in place in relation to unemployment insurance benefit receipt. A prominent example is the possibility to base unemployment benefits on former full-time employment earnings instead of the actual part-time earnings for a transitional period (Germany). This possibility has been introduced in some countries to encourage full-time employees to switch to part-time employment. Furthermore, often specific rules exist that allow the combination of unemployment benefit receipt and part-time employment. In Denmark, for example, a person who becomes partially unemployed or who starts a part-time job may receive complementary unemployment benefits if he is available for full-time work (or for employment of 30 hours if he is part-time insured) (The National Directorate of Labour, 2006: 11). In Germany, a person who exercises two jobs under compulsory insurance coverage, loses one of them, and searches for a new additional part-time or full-time job has a right to six months of supplementary unemployment benefits. These rules are usually rather restrictive in order to prevent abuse or disincentives.

Table 3 gives a synopsis of the unemployment insurance rules in the four countries that potentially influence the access to or level of benefits for part-time workers.

### Table 3: Synopsis of unemployment insurance rules concerning part-time workers

<table>
<thead>
<tr>
<th>hours or wage level threshold</th>
<th>Denmark</th>
<th>Germany</th>
<th>Spain</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>access</td>
<td>✪ until 1994 membership in UI fund was not possible for persons who were employed for less than 15 hours a week</td>
<td>✪ until 1997 hours threshold at 18 hours for UI and UA**</td>
<td>✪ before 1993 no hours threshold applied</td>
<td>✪ an earnings threshold applies (adapted yearly)</td>
</tr>
<tr>
<td></td>
<td>✪ at present membership is possible from the first hour onwards</td>
<td>✪ since April 1997 threshold at 15 hours and possibility to add up employment for access</td>
<td>✪ between 1994 and 1998 part-time employment below 12 hours was excluded from unemployment insurance benefit receipt</td>
<td>✪ since 2000 there is a small earnings bracket in which persons do not have to pay National Insurance Contributions but gain entitlement to benefits</td>
</tr>
<tr>
<td></td>
<td>✪ if UI: 12 months of insured employment during last 3 years, since 2006 during last 2 years</td>
<td>✪ since 1999: 150 calendar days of insured employment, until the end of 2004 only as follow-up benefit</td>
<td>✪ it was re-included in the end of 1998 (pro rata temporis)</td>
<td>✪ in 2006/2007 the lower earnings limit is £84, the primary earnings threshold is £97</td>
</tr>
<tr>
<td></td>
<td>✪ if UA: until 1999 membership in UI fund</td>
<td>✪ since 2005 low means-tested flat-rate benefit (ALG II) for all employable without contribution requirement part-time workers:</td>
<td>✪ if UI: at least 360 days of insured employment in the 6 preceding years</td>
<td>✪ UI: 25% of minimum contribution to benefit</td>
</tr>
<tr>
<td></td>
<td>✪ if UI: employment, renewal of rights after 26 weeks part-time insured:</td>
<td>✪ Alan Jardine: 30 calendar days of insured employment, at least 30% of previous earnings</td>
<td>✪ if UA: at least 90 days (means-tested part-time workers):</td>
<td>✪ part-time workers:</td>
</tr>
<tr>
<td></td>
<td>✪ if UA: unemployment, renewal of rights after 26 weeks part-time insured:</td>
<td>✪ if UI: employment, until the end of 2004 only as follow-up benefit</td>
<td>✪ from 1994 on, benefit is based on time actually worked</td>
<td>✪ no direct disadvantages but difficulty to gain entitlement to contribution-based JSA*** for persons with low earnings (part-time) and/or discontinuous employment</td>
</tr>
<tr>
<td></td>
<td>✪ before 1997 uniform 26 weeks</td>
<td>✪ since 2005 low means-tested flat-rate benefit (ALG II) for all employable without contribution requirement part-time workers:</td>
<td>✪ since 1999 every working day counts towards contribution period independent of hours worked (more difficult to enter for those who work less than 5 days per week)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✪ since 1997 52 weeks in last 3 years (full-time employment), renewal of rights after 26 weeks part-time insured:</td>
<td>✪ no disadvantages</td>
<td>✪ if UI: at least 360 days of insured employment in the 6 preceding years</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✪ before 1997 uniform 26 weeks</td>
<td></td>
<td>✪ if UA: at least 90 days (means-tested part-time workers):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✪ since 1997 34 weeks full-time equivalent instead of 52 weeks, renewal of rights after 17 weeks part-time insured:</td>
<td></td>
<td>✪ from 1994 on, benefit is based on time actually worked</td>
<td></td>
</tr>
<tr>
<td>minimum contribution period</td>
<td>general: one year membership in UI fund</td>
<td>general: 12 months of insured employment during last 3 years, since 2006 during last 2 years</td>
<td>general: at least 360 days of insured employment in the 6 preceding years</td>
<td>general: 25% of minimum contribution in the preceding year, additionally, in the two preceding years at least 50 times the minimum contribution</td>
</tr>
<tr>
<td>access</td>
<td>✪ until 1996 26 weeks insured employment within preceding 3 years after joining fund</td>
<td>✪ since 1997 membership in UI fund</td>
<td>✪ if UA: at least 90 days (means-tested part-time workers):</td>
<td>✪ if no conditions but low flat-rate benefits</td>
</tr>
<tr>
<td></td>
<td>✪ since 1997 52 weeks in last 3 years (full-time employment), renewal of rights after 26 weeks part-time insured:</td>
<td>✪ since 2005 membership in UI fund</td>
<td>✪ from 1994 on, benefit is based on time actually worked</td>
<td>✪ part-time workers:</td>
</tr>
<tr>
<td></td>
<td>✪ before 1997 uniform 26 weeks</td>
<td>✪ since 2005 low means-tested flat-rate benefit (ALG II) for all employable without contribution requirement part-time workers:</td>
<td>✪ since 1999 every working day counts towards contribution period independent of hours worked (more difficult to enter for those who work less than 5 days per week)</td>
<td>✪ no direct disadvantages but difficulty to gain entitlement to contribution-based JSA*** for persons with low earnings (part-time) and/or discontinuous employment</td>
</tr>
<tr>
<td></td>
<td>✪ since 1997 34 weeks full-time equivalent instead of 52 weeks, renewal of rights after 17 weeks part-time insured:</td>
<td>✪ no disadvantages</td>
<td>✪ if UI: at least 360 days of insured employment in the 6 preceding years</td>
<td></td>
</tr>
<tr>
<td>dependence on former wage level</td>
<td>yes, replacement rate is 90% combined with low ceilings part-time insured: can at the highest receive 2/3 of maximum benefit; the minimum benefit does not apply to former part-time employed; low ceilings lead to redistribution from high to low incomes</td>
<td>yes, UI: 67% (60% without children) combined with high ceilings</td>
<td>yes, UI: 70%, after 6 months 60%, no: UI: between 80% and 225% of IPREM depending on age, contribution time and children</td>
<td>yes, UI and UA are low flat rate benefits</td>
</tr>
<tr>
<td>level</td>
<td></td>
<td></td>
<td>no: UA: between 80% and 225% of IPREM depending on age, contribution time and children</td>
<td>In 2006 unemployed aged 25 or over receive £57.45 per week, unemployed 18 to 24 receive £45.50 and unemployed aged 16 to 17 receive £34.60 per week</td>
</tr>
</tbody>
</table>
By making use of the ECHP data this section will first present some descriptive results on the entitlement of men and women to benefits, their average benefit levels and the distribution of benefit levels. In a further step it is tried to incorporate the above information on the benefit systems in the analysis by way of constructing proxies for the institutional configurations of the four country’s unemployment insurance systems from the ECHP data. The data does not allow distinguishing between unemployment insurance and unemployment assistance benefits.

5.1 Descriptive analysis

Figure 5 compares benefit coverage between registered men and women and all men and women who are looking for a job (registered and not registered). The data refers to 2000 and 2001.\footnote{Pooling of both years is necessary because case numbers for Denmark and the United Kingdom are very low.} The strategy to look at both registered unemployed and all unemployed is for example suggested by Atkinson et al. (1991: 1683) because only looking at the coverage rate of registered unemployed might give a false picture of true benefit coverage if people who do not expect any benefit receipt decide to not register at the employment office in the first place. As expected, coverage rates of registered unemployed (fond) are in all countries higher than coverage rates of all jobless people looking for a job (stripes). Denmark with its highly individualised unemployment system that grants benefits independent of means-testing for a long period fares best, women have even somewhat higher coverage rates than men. In the other three countries there are clear differences in coverage levels between men and women; if coverage rates of all people who are looking for a job are regarded the share of women that is covered by unemployment benefits is only half as large as the share of men. Different explanations for non-coverage are possible. Besides insufficient contribution records, working hours below the hours threshold or earnings below the earnings threshold, this group can also consist of long-term unemployed who are not receiving unemployment assistance benefits due to means-testing or of people who want to return to the labour market after a child-care break for example.
Figure 5: Unemployment receipt for men and women (comparison of registered unemployed and all unemployed looking for a job) (pooled data for 2000 and 2001)


Average monthly benefit levels expressed in purchasing power parities (PPPs)\(^\text{20}\) are highest in Denmark followed by Germany and Spain. The UK with its flat rate benefit system fares worst. Average benefit levels are in all countries somewhat higher for men than for women but high gender differences are evident only in Spain (compare Table 4).

Table 4: Mean benefit levels for men and women in PPPs (2001/2002 data)

<table>
<thead>
<tr>
<th></th>
<th>men</th>
<th>women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>864</td>
<td>845</td>
</tr>
<tr>
<td>Germany</td>
<td>758</td>
<td>708</td>
</tr>
<tr>
<td>Spain</td>
<td>512</td>
<td>379</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>298</td>
<td>278</td>
</tr>
</tbody>
</table>

Source: own calculation based, on weighted ECHP data for 2000 and 2001. The table refers to unemployment benefit recipients with between 3 and 12 months of unemployment. At 80 case numbers for UK women are relatively low.

Comparing the benefit distribution between men and women, except for the United Kingdom, in all countries the median and the lower quartile are lower for women than for men and the distribution is wider for women than for men (compare Figure 6). The distribution of benefits is by far widest in

\(^{20}\) Purchasing Power Parities (PPPs) are currency conversion rates that both convert to a common currency and equalise the purchasing power of different currencies. In other words, they eliminate the differences in price levels between countries.
Germany which is due to the strong relationship between earnings and benefits that is enforced by high upper ceilings on earnings.

**Figure 6: Comparison of distribution of monthly benefit levels between men and women, pooled data for 2000 and 2001**

Source: own calculation, based on weighted ECHP data for 2000 and 2001. The figure refers to unemployment benefit recipients with between 3 and 12 months of unemployment. Case numbers for UK women are relatively low (80).

If we compare average unemployment benefit levels and average former wage levels in the ECHP data it becomes evident that in all countries except for Spain net replacement rates of women are higher than those of men (compare Table 5).

**Table 5: Net replacement rates (2000/2001 data)**

<table>
<thead>
<tr>
<th></th>
<th>men</th>
<th>women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denmark</td>
<td>49</td>
<td>64</td>
</tr>
<tr>
<td>Germany</td>
<td>51</td>
<td>69</td>
</tr>
<tr>
<td>Spain</td>
<td>41</td>
<td>42</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>19</td>
<td>27</td>
</tr>
</tbody>
</table>

Source: own calculation, based on ECHP data for 2000 and 2001. The figure shows average unemployment benefits (at least one month of unemployment) as share of average net wage.

Differences between women and men are largest in Denmark and Germany and non-existent in Spain. Net replacement rates are generally lowest in the United Kingdom which operates with flat rate benefits. This finding suggests that some redistribution towards women happens. Redistribution can take place either through flat-rate benefits, the fixation of maximum or minimum benefits or through specific preferential benefit rules for certain groups such as part-time workers.
5.2 Multivariate analysis

This section will first look at the direct effects of being a woman and of working part-time on entitlement to benefits. Individual predicted probabilities of benefit receipt will be compared for part-time and full-time working women. Since lower entitlement of women to benefits is not brought about by gender as such but by design features of the benefit systems (means-testing, hours or earnings thresholds, and contribution requirements) that are often disadvantageous to women due to their position in the household or the characteristics of the jobs they are exercising, in a second step, a range of ECHP variables are transformed so that they reflect regulations of the benefit systems that potentially restrict the access to benefits.

5.2.1 Benefit entitlement of women

Even if we control for part-time work and other individual, household and job characteristics, apart from Denmark, women have considerably lower odds of receiving benefits than men (compare Table 6). This points to the importance of means-testing in restricting access of women to benefits. In Denmark, with its highly individualised unemployment system, the effect on women is not significant whereas it is especially great in the United Kingdom where means-testing sets in comparatively early. Former part-time workers if compared with their full-time employed counterparts have significantly lower odds of receiving benefits in Denmark and the United Kingdom (about 1/3rd) as well as in Germany (about 1/2) even if factors such as age, qualification level, household characteristics (composition and income) and job related characteristics (former personal wage) are controlled for. Although the coefficient for women is highly significant in Spain, the part-time coefficient for Spain is not significant. In fact, the model controls if the individuals have been temporary employed before the onset of unemployment. In Spain, the majority of part-time employment is of a temporary nature (Fassler-Ristic, 1999: 371; Cebrián et al., 2000: 213) and as we will see below the minimum contribution requirement that is harder to achieve in case of a temporary contract plays an important role in Spain in restricting access to benefits.
Table 6: Random effects logit model – access of non-standard workers to unemployment benefits

<table>
<thead>
<tr>
<th>dependent variable: unemployment benefit receipt (no/yes)</th>
<th>Denmark</th>
<th>Germany</th>
<th>Spain</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>odds ratios</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>female</td>
<td>1.56</td>
<td>0.58*</td>
<td>0.43**</td>
<td>0.36*</td>
</tr>
<tr>
<td>last job part-time</td>
<td>0.32**</td>
<td>0.47**</td>
<td>0.80</td>
<td>0.29**</td>
</tr>
<tr>
<td>monthly net wage and salary earnings year prior to survey</td>
<td>1.06**</td>
<td>1.12**</td>
<td>1.07**</td>
<td>1.01</td>
</tr>
<tr>
<td>current net monthly household wage/salary income</td>
<td>0.98</td>
<td>0.94**</td>
<td>0.96**</td>
<td>0.98</td>
</tr>
<tr>
<td>observations</td>
<td>892</td>
<td>2266</td>
<td>4200</td>
<td>588</td>
</tr>
<tr>
<td>number of groups</td>
<td>562</td>
<td>967</td>
<td>2280</td>
<td>417</td>
</tr>
<tr>
<td>Wald chi2(35) (Germany(27))</td>
<td>151.61</td>
<td>301.71</td>
<td>449.22</td>
<td>76.52</td>
</tr>
<tr>
<td>Prob &gt; chi2</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Prob &gt;= chibar2</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Further variables included in models but not shown here: age, household type, qualification level, last job temporary, occupation last job (except for Germany), length of unemployment, and year dummies

+ significant at 10%; * significant at 5%; ** significant at 1%; p-values in parentheses

Source: Own calculation based on ECHP data, all those without a job, looking for a job.

In order to illustrate the above results we look at individual predicted probabilities for part-time and full-time workers (compare Table 7). If women with medium qualification levels in couples without children, with mean former wage income, mean current household income, and mean length of unemployment (about ten months) are regarded predicted probabilities for benefit receipt are in all countries lower for former part-time than for former full-time workers. For Denmark, for example, we are 95% confident that the predicted probability of receiving benefits for former part-time workers lies between 0.40 and 0.84. Probabilities to receive benefits are very low for part-time workers in the other three countries and also remain below 0.30 for former full-time workers with the above stated profile (not registered unemployed but all unemployed who are looking for a job are the basis).

Table 7: Individual predicted probabilities of benefit receipt for typical non-standard and standard workers

<table>
<thead>
<tr>
<th>Ideal type*</th>
<th>Denmark</th>
<th>Germany</th>
<th>Spain</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>part-time women in couple without kids</td>
<td>0.62 (0.40-0.84)</td>
<td>0.14 (0.07-0.20)</td>
<td>0.23 (0.15-0.30)</td>
<td>0.11 (0.03-0.19)</td>
</tr>
<tr>
<td>full-time women in couple without kids</td>
<td>0.83 (0.71-0.95)</td>
<td>0.24 (0.16-0.32)</td>
<td>0.27 (0.20-0.34)</td>
<td>0.18 (0.06-0.30)</td>
</tr>
</tbody>
</table>

Source: Own calculation based on ECHP data, adapted from Long et al. (2006: 162).

* Age, former wage, current household income, and length of unemployment are set to their mean; a medium qualification level (ISCED 3) applies. The table refers to all unemployed looking for a job.

21 The regression models that this table is based on do not control for former contract type. This is so because there are relatively high missings on both former contract type and former working time that lead to a matrix with missing values – based on this matrix with missing values the individual predicted probabilities cannot be calculated.
5.2.2 The design of benefit systems and their effects on entitlement

In this section, some ECHP variables are transformed so that they reflect regulations of the countries’ benefit systems that potentially restrict the access of workers with non-standard contracts to benefits.\(^\text{22}\)

There is no information on social security contribution in the data. In order to capture contribution time within a specific reference period nevertheless, the employment information from the calendar of events is used. There is monthly employment spell information from January 1993 to December 2000. Since we also know in which month a person has been interviewed we can construct a variable that counts the number of months during which a specific person was employed before his last interview.\(^\text{23}\) Every employment month within a 36 months reference period is counted; this corresponds to the Danish and the (pre-reform) German reference period.\(^\text{24}\) Since at least three years of previous calendar information are necessary to reach the maximum spell length of 36 months only persons who have at the earliest been interviewed in December 1995 will be able to reach the maximum spell length. A similar problem exists for persons interviewed in 2001 and early 2002 because the calendar of events stops in December 2000.

**Hours or earnings thresholds** can be approached by using information on the number of hours that an unemployed person worked in his last job and on the wages he earned.\(^\text{25}\) No retrospective information on working hours is collected in the survey. In order to compensate for this problem the information on usual working hours from the previous two survey waves is used. The information from t-2 is only used if the information on working hours is missing in t-1. Based on the lagged hours variable four hours’ groups are generated: marginal part-time employment with 1 to 14 hours (the German hours threshold used to be 15 hours, the Spanish 12), intermediate part-time employment with 15 to 19 hours, high hours part-time work with 20 to 29 hours and full-time employment with more than 30 hours. The assumption is that discrimination in access to benefits will be stronger the lower the working hours.

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\(^{22}\) The existence of a range of specific rules that apply to part-time workers cannot be adequately treated in the analysis but they have to be kept in mind when assessing the outcomes. Another problem for data analysis is that unemployment insurance regulations are frequently amended – an attractive strategy would be the use of dummies capturing these changes – but the sample size severely restricts such undertakings.

\(^{23}\) It would have been more correct to use the month the last job was stopped as a reference point instead of the most recent interview. This was not possible because there are very high missing on this variable in all the countries ranging from 25 to 54 percent.

\(^{24}\) The reference period in Spain is even longer (six years), in the United Kingdom the two tax years preceding the year the claim is being made are taken into account when deciding about a person’s access to benefits based on paid contributions.

\(^{25}\) Only the yearly individual net wage and salary income from the year prior to the survey is recorded in the data. In order to get a better proxy of former monthly wage income this amount is divided by the number of months a person has been employed. If the yearly wage income is zero for t-1 it is replaced by the information from t-2.
Means-testing can be captured via using information on the current household income or income of a partner. Here, the current net monthly wage and salary household income is used as a proxy for means-testing.

A random effects logit model is calculated in order to take account of the panel structure of the data – responses of the same individual (at different time points) are not independent of each other (Rabe-Hesketh and Everitt, 2004: 151ff). Since in general, the estimated parameters from binary regression models do not provide directly useful information for understanding the relationship between the independent variables and the outcome, odds ratios, predicted probabilities and graphical display of predicted probabilities are used below for the presentation of results.

Table 8 shows the odds ratios for the benefit system proxy variables. The models that are calculated separately for each country are all significant. The following reference categories were chosen: full-time hours (30+) for the hours’ threshold indicator, a very long contribution period of 25 to 36 month for the indicator on the contribution requirement and a former wage of more than 1000 Euro-PPP for the earnings threshold indicator. The current monthly net wage and salary income of the household that captures means-testing and the indicator that captures unemployment duration to control for long-term unemployment are metric variables.

Concerning the institutional features that can prevent access to benefits, Table 8 shows that the low hours threshold clearly plays a role in all countries – the odds to receive benefits among people with very low former hours are significantly lower than the odds of former full-time employees. The odds to receive benefits increase with the number of hours worked. Whereas hours thresholds are (were) clearly defined in the German and the Spanish unemployment insurance system they seem to work indirectly also in the British and the Danish systems. In the United Kingdom this is probably due to the earnings threshold. The earnings threshold proxy for low earnings in Table 8 indeed points in the right direction but it is not significant for the United Kingdom except for zero earnings. In Denmark, the strong negative influence of very low hours on access to benefits could either be due to the voluntary nature of the unemployment insurance programme – there is evidence that people who expect low benefit levels are less likely to insure because they can expect similar benefit levels from social assistance (Parsons et al., 2003). Or it could be due to the fact that minimum contribution requirements among part-time workers in Denmark are easier to achieve if working hours are higher.

26 The rho statistic displayed at the bottom of Table 7 confirms the use of a random effects model that takes into account the panel structure of the data. If rho were zero, the panel level variance component would be unimportant, and the panel estimator would not be different from the pooled estimator (StataCorp 2005). According to the likelihood ratio test which formally compares the pooled estimator (logit) with the panel estimator except for Denmark, the panel estimator is clearly more suitable than the pooled estimator.

27 Long et al. (2006) provide very helpful information on how to use post-estimation commands in Stata and on how to present regression outcomes graphically.

28 The prob>chi2 statistic which is based on the Wald test shows for each country that we can reject the hypothesis that all coefficients are zero at the .01 level.
Regarding the **contribution period** zero months of contributions within the last three years clearly restrict the access to benefits in all countries, least so in the United Kingdom which is most likely due to the income-based Jobseeker’s Allowance that is open to all unemployed depending on means-testing. Low contributions of less than six months significantly restrict access to benefits if compared to very long contribution periods in all countries least though in the United Kingdom and Denmark. In Germany and Spain the odds to receive benefits significantly rise with length of contribution time but always stay below the ones of people with very long contribution periods. For Denmark this is only true for contribution times below twelve months. The coefficients for the United Kingdom are not significant which could be due to the fact that the access rules to unemployment benefits are more complicated than in the other countries and might not be proxied well by the variables constructed here. Furthermore, the variable on unemployment benefit receipt in the ECHP does not distinguish between insurance and assistance benefits and the access to income-based Jobseeker’s Allowance (unemployment assistance) in the United Kingdom is only conditional on means-testing and not on the length of previous contribution times.

**Table 8: Random effects logistic regression on unemployment benefit receipt**

<table>
<thead>
<tr>
<th>dependent variable: unemployment benefit receipt (no/yes)</th>
<th>Denmark</th>
<th>Germany</th>
<th>Spain</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>REFERENCE: hours threshold: 30+ hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>hours threshold: 1-14 hours</td>
<td>0.17**</td>
<td>0.32**</td>
<td>0.49**</td>
<td>0.39**</td>
</tr>
<tr>
<td>hours threshold: 15-19 hours</td>
<td>0.47+</td>
<td>0.35**</td>
<td>0.32**</td>
<td>0.41**</td>
</tr>
<tr>
<td>hours threshold: 20-29 hours</td>
<td>0.71</td>
<td>0.52**</td>
<td>0.43**</td>
<td>0.54+</td>
</tr>
<tr>
<td>REFERENCE: contribution period: 25-36 month</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>contribution period: 0 month</td>
<td>0.15**</td>
<td>0.09**</td>
<td>0.11**</td>
<td>0.42**</td>
</tr>
<tr>
<td>contribution period: 1-6 month</td>
<td>0.36**</td>
<td>0.15**</td>
<td>0.11**</td>
<td>0.58+</td>
</tr>
<tr>
<td>contribution period: 7-12 month</td>
<td>0.49*</td>
<td>0.27**</td>
<td>0.20**</td>
<td>0.61</td>
</tr>
<tr>
<td>contribution period: 13-18 month</td>
<td>0.71</td>
<td>0.31**</td>
<td>0.43**</td>
<td>0.85</td>
</tr>
<tr>
<td>contribution period: 19-24 month</td>
<td>0.71</td>
<td>0.58**</td>
<td>0.68*</td>
<td>0.61+</td>
</tr>
<tr>
<td>household wage/100* (means-testing)</td>
<td>0.98+</td>
<td>0.96**</td>
<td>0.95**</td>
<td>0.98+</td>
</tr>
<tr>
<td>REFERENCE: &gt;1000 € PPP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>earnings threshold proxy: 0</td>
<td>1.91*</td>
<td>0.46**</td>
<td>0.14**</td>
<td>0.34**</td>
</tr>
<tr>
<td>earnings threshold proxy: &lt;300 € PPP</td>
<td>0.44</td>
<td>0.40**</td>
<td>0.12**</td>
<td>0.67</td>
</tr>
<tr>
<td>earnings threshold proxy: &lt;800 € PPP</td>
<td>0.56+</td>
<td>1.04</td>
<td>0.37**</td>
<td>0.68</td>
</tr>
<tr>
<td>earnings threshold proxy: &lt;1000 € PPP</td>
<td>1.44</td>
<td>1.15</td>
<td>0.99</td>
<td>1.21</td>
</tr>
<tr>
<td>unemployment duration proxy</td>
<td>1.09**</td>
<td>1.10**</td>
<td>1.01+</td>
<td>1.05**</td>
</tr>
<tr>
<td>observations</td>
<td>925</td>
<td>4302</td>
<td>4286</td>
<td>1082</td>
</tr>
<tr>
<td>number of groups</td>
<td>674</td>
<td>2761</td>
<td>2837</td>
<td>875</td>
</tr>
<tr>
<td>wald chi2 (14)</td>
<td>89.93</td>
<td>797.35</td>
<td>646.29</td>
<td>84.81</td>
</tr>
<tr>
<td>prob &gt; chi2</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>rho</td>
<td>.03</td>
<td>.20</td>
<td>.14</td>
<td>.37</td>
</tr>
<tr>
<td>likelihood ratio test of rho=0; prob&gt;=chibar2</td>
<td>0.403</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>+ significant at 10%; * significant at 5%; ** significant at 1%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Own calculation based on ECHP data. The sample taken into account are all persons with no job looking for a job. The Stata command xtlogit is used to fit this model.

*The household wage and salary income is divided by 100 to facilitate interpretation.

In order to illustrate the effects and interplay of contribution time and hours thresholds on benefit entitlement we can use the above regression results in order to create a table of probabilities for ideal types or profiles of people (compare Long and Freese, 2006: 160ff). Household income is set to
its mean and it is assumed that the individuals have formerly earned between 601 and 1000 Euro-PPP a month; earnings thresholds should thus not be a problem. Table 9 shows that the average probability of all unemployed who are looking for a job to receive unemployment benefits is 0.62 in Denmark even if they worked low hours before and have short contribution times. A combination of former full-time hours and long contribution times increases the average probability to about 0.80. The differences in the United Kingdom are of a similar size but coverage levels are much lower – long contribution times and full-time hours lead to predicted probabilities to receive benefits of only about 0.26 (both registered and not registered unemployed are regarded). In Germany and Spain, low working hours and short contribution periods clearly are problematic in that they limit access to benefits dramatically. Unemployed persons with relatively long contribution periods and full-time hours have much higher predicted probabilities to receive benefits at unemployment than unemployed with low hours and short contribution records. In some cases, especially at low contribution times in Denmark and in the United Kingdom, the confidence intervals have large ranges.

Table 9: Individual predicted probabilities of benefit receipt for ideal types (based on regression results in Table 8)

<table>
<thead>
<tr>
<th>Ideal type*</th>
<th>Denmark</th>
<th>Germany</th>
<th>Spain</th>
<th>United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>contributions of 7 to 12 months and low hours (15-19)</td>
<td>0.62 (0.40-0.83)</td>
<td>0.11 (0.05-0.17)</td>
<td>0.03 (0.01-0.06)</td>
<td>0.14 (0.04-0.24)</td>
</tr>
<tr>
<td>contributions of 13 to 18 months and low hours (15-19)</td>
<td>0.68 (0.46-0.90)</td>
<td>0.11 (0.05-0.18)</td>
<td>0.05 (0.02-0.09)</td>
<td>0.16 (0.05-0.28)</td>
</tr>
<tr>
<td>contributions of 7 to 12 months and high part-time hours (20-29)</td>
<td>0.71 (0.56-0.86)</td>
<td>0.14 (0.10-0.20)</td>
<td>0.04 (0.03-0.06)</td>
<td>0.16 (0.06-0.25)</td>
</tr>
<tr>
<td>contributions of 19 to 24 months and full-time hours (30+)</td>
<td>0.82 (0.71-0.93)</td>
<td>0.38 (0.30-0.45)</td>
<td>0.17 (0.13-0.22)</td>
<td>0.26 (0.16-0.37)</td>
</tr>
</tbody>
</table>

Source: Own calculation based on ECHP data.

*The above results are conditional on a mean household income and wages between 601 and 1000 Euro-PPP. We not only look at registered unemployed but at all unemployed who are looking for a job.

Reading example: For row one and Denmark: at contribution periods of seven to twelve months, part-time hours between 15 and 19, former wages of 601 to 1000 and a mean household income, the mean probably to receive benefits lies at 0.62. We are 95% confident that the probability of receiving benefits lies between 0.40 and 0.83 (compare Long and Freese, 2006: 160ff).

Means-testing, introduced into the model via the household wage income, plays a role in limiting access to benefits (compare Table 8). Higher household wages are associated with somewhat lower odds to receive unemployment benefits. Since the coefficients are not very informative Figure 7 highlights the relationship between means-testing and benefit receipt for long-term unemployed by showing the predicted probabilities as a function of the household wage. The idea is to draw a curve showing how the model’s prediction of y (unemployment benefit receipt) changes as a function of one

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29 The confidence intervals tell us that we can be 95% confident that the probability of receiving benefits lies within the values given in the brackets.

30 The post-estimation commands (conditional effect plots and individual predicted probabilities) are based on pooled cross-sections (logistic regression that adjusts for repeated measurement of the same person); the post-estimation commands used here do not work on the panel models. Results of both models are quite close.
x variable (household income), holding the other variables in the model at their mean. The below results are important in so far as we can expect that especially in countries where the male breadwinner plus model plays an important role part-time employees will often live in a household context with a full-time working partner. This can lead to the total abolishment of unemployment benefit entitlements (of course this is also true for couples with a full-time earner and an unemployed person who was formerly full-time employed).

Means-testing does not play a role in the highly individualised Danish system, unemployment benefits are paid for a long period independent of the income situation of the recipient and his family, and unemployment assistance does not exist. In the other three countries means-testing for long-term unemployed is evident. While it sets in very slowly with growing household income in Germany it sets in rapidly in Spain and relatively fast in the United Kingdom. In Spain a high household income is associated with total abolishment of benefit entitlement a similar trend is observable in the United Kingdom if the confidence intervals (dashed lines) are taken into account. This is not the case in Germany which probably is due to the fact that non-means-tested unemployment insurance benefits were formerly paid for long periods depending on age and length of contribution period.

**Figure 7: Conditional effect plot on the probability of receiving unemployment benefits conditional on the current household income among long-term unemployed (based on regression results in Table 7)**

Source: Own calculation based on ECHP data. For description of the method refer to Long et al. (2006: 166-168). All other dependent variables from the regression model are set to their mean.
**Reading example:** Germany: For long-term unemployed with all other characteristics from Table 7 at their mean, the predicted probabilities for benefit receipt start at a high of .90 on average at a household income of zero and then slowly decrease with rising household income to about .40 on average at a household income of €8000. The confidence interval increases with rising income.

The wage proxy in the regression analysis captures **earnings thresholds** and indirectly also hours thresholds since lower hours usually come about with lower earnings. Earnings below 300 Euro-PPP in the former year imply lower odds to receive benefits than very high earnings (compare Table 8). Denmark is the only exception – the high and significant coefficient on zero earnings could be due to the very long period that benefits are granted in Denmark without being subject to means-testing. The positive coefficient on a zero wage income during the previous two years might thus only point to ongoing benefit receipt that already started some time ago. As expected, as soon as the earnings pass a certain level, access restriction no longer are in place. Plotting the predicted probabilities of benefit receipt as a function of the former earnings with all other institutional variables at their mean is more enlightening than the results from Table 8. Figure 8 shows the predicted probabilities to receive benefits as a function of the former wage level. The level of former earnings does not have an influence in Denmark whereas in the other countries former earnings have a positive influence on the probability to receive benefits – the higher the former earnings the higher the probability to receive benefits.

**Figure 8:** Conditional effects plot on the probability of receiving unemployment benefits conditional on the former wage (based on regression results in Table 7)

Source: Own calculation based on ECHP data. All other dependent variables from the regression model are set to their mean.
6 Conclusion

The gendered division of labour in the family and in society leads to gender stratification in entitlement as workers (Sainsbury, 1996). This is due to differences in labour market participation and wages that are reproduced in benefit systems through features such as hours or earnings thresholds, minimum contribution periods, means-testing and proportionality between earnings and benefit levels.

While for men standard employment forms have been the norm in the past and, for the majority, also remain the norm at present, rising employment rates of women have been going hand in hand with increasing part-time employment. In countries that unlike Denmark do not provide extensive public services, traditional family roles and responsibilities of women and men are thus reproduced in the labour market through either non-participation in the labour market (Spain) or involuntary or inevitable part-time employment of mothers (Germany and the United Kingdom). In this regard, the fact that unemployment benefit systems mirror standard employment – admittedly to varying degrees – leads to unequal outcomes between men and women.

The analysis showed that in order to get a true picture of benefit coverage rates and differences between men and women it is of utmost importance to look at all unemployed persons who are looking for a job and not only at those who are registered at the employment office.

Women are disadvantaged in access to benefits as compared to men in all countries but Denmark which makes use of highly individualised benefits that are paid independent of the household income/income of a partner for a long period. Those women who have access to benefits only receive slightly lower benefits than men with the exception of Spain where differences are substantial. In Denmark, Germany and the UK women’s average net replacement rates are thus higher than men’s which points to the existence of redistribution. In the UK redistribution takes place through flat rate benefits, in Denmark low ceilings lead to a system that accords higher replacement rates to people with lower former earnings, in Germany, special rules are in place for those that change from full-time to part-time employment: for a certain period they can receive UI benefits dependent on their former wage.

Part-time employment seems to be an important reason for lower entitlement to benefits among women if compared to men. The analysis showed that hours and/or earnings thresholds play an important role in restricting access to benefits. In the United Kingdom this discrimination not only takes place directly through the earnings threshold but also indirectly in that the contribution requirement rule takes into account not only contribution times but also earnings levels. In fact, Bennett (2005) on behalf of the British Equal Opportunities Commission suggests that the contribution rules should be re-examined including the relative speed at which higher-paid as opposed to low-paid workers build up entitlement. In Denmark, part-time employment has a negative effect on benefit coverage whereas this does not lead to differences in coverage rates between men and women. Hours thresholds only work indirectly in Denmark via the minimum contribution requirement and as a matter of fact average
part-time hours are considerably lower among men than among women. In Spain, part-time employment does not seem to contribute directly to lower unemployment benefit coverage rates of women. Instead, minimum contribution requirements represent a problem in Spain, where the share of temporary contracts is exceptionally high and part-time employment (exercised considerably more often by women) in the majority of cases goes hand in hand with temporary employment.

The other important reason for reduced access of women to benefits is means-testing. In Germany, Spain and the United Kingdom, (long-term) unemployed are less likely to receive unemployment benefits the higher their household income is. Since the household constellation with a full-time working male spouse is still much more common than a household constellation with a full-time working female spouse, means-testing over proportionally effects women and thus deprives them of an independent replacement income at unemployment.

All in all it is questionable if the ongoing support of male breadwinner constellations through tax regulations and exemptions from contributions of marginal employment is socially and financially sustainable. As the Danish example shows extensive provision of services (especially child-care) and strong individualisation of benefits does not only allow both women and men to actively participate in the labour market but also to freely choose their employment form. Concerning the division between male and female labour, policy measures should thus support a more equal distribution of household and care responsibilities and should foster equal labour market opportunities for men and women. Some caution is necessary though, attitudes and practices are only slowly changing, and therefore assumptions on complete independence are not likely to be advantageous for women. Caring credits, caring allowances, or other measures that are targeted at unpaid work for non-employed and peripheral employed persons might be necessary for a transitional period until services have been expanded sufficiently.

It is evident that the security situation of women requires further investigation. Questions of financing more encompassing social insurance schemes in an equitable and adequate way preventing possible incentive problems will have to take centre stage in further investigation.
Annex 1

Table 10: Longer-term transitions from full-time and part-time employment for prime age women

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Annex 2

Event history analysis

Event history methods allow simultaneous analysis of observed and censored event times. Life tables are the primary tool for describing event occurrence data. They follow the event histories of a sample of individuals from the beginning through the end of the data collection and include information on people who are eligible to experience the event (risk set), on people who experience the event and on people who were censored at the end of the interval (Singer et al. 2003). In order to summarise and present the information from the life tables failure functions (inverse of the survivor function) can be used. The failure function cumulates period-by-period risks of event occurrence to assess the probability that a randomly selected individual will experience the event (Singer et al. 2003). The estimated failure function provides maximum likelihood estimates of the probability that an individual randomly selected from the population will fail (make an exit from employment). There will be a difference between the percentage of workers that is still employed (not necessarily by the same employer) at the end of the data collection and the estimate of the percentage of workers that is still employed – this is exactly because censoring is adjusted for (estimation is done indirectly via the individuals who remain in the risk set). Under the assumption of independent censoring, one can thus use the risk set to estimate what would have happened to the entire remaining population had there been no censoring. The results might be somewhat distorted by the fact that many interviewed people were already employed at the start of the survey and we do not know the real length of their employment spell (left censoring).
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