Taxes, Benefits and Financial Incentives to Work: The United Kingdom, Germany and Poland Compared

Abstract

We provide a detailed comparison of financial incentives to work resulting from the tax and benefit systems in three countries: the United Kingdom, Germany and Poland. Financial incentives to work are compared using a range of example family profiles under different assumptions concerning benefit eligibility, wage levels and work intensity. Consequences of the different design of taxes and benefits are discussed in detail from the perspective of attractiveness of employment.

Keywords: work incentives, replacement ratios, tax and benefit systems

JEL: J21, J38

Streszczenie

W artykule przedstawiono szczegółowe porównanie finansowych bodźców do pracy, wynikających z systemów podatkowo-świadczeniowych w trzech krajach – Wielkiej Brytanii, Niemczech i Polsce. Porównano finansowe bodźce do pracy, wykorzystując przykładowe profile rodzinne, różniące się dostępem do zasiłków, wysokością płac i intensywnością pracy. Szczegółowo omówiono konsekwencje różnych struktur podatkowo-świadczeniowych z perspektywy atrakcyjności zatrudnienia.

Słowa kluczowe: bodźce do podejmowania pracy, wskaźniki zastąpienia, systemy podatkowo-świadczeniowe

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1. Introduction

In this paper we conduct a detailed comparison of work incentives for a large set of stylised households between the United Kingdom, Germany and Poland. The three countries may be considered as representing three types of welfare regimes, which makes the comparison especially interesting. The UK and Germany represent two developed economies with the latter often quoted as one of the most generous welfare states and with the United Kingdom as an example of a more liberal economy, with less a generous welfare system. The tax and benefits systems in these two economies, and their effects on incentives to work, are compared to the system in Poland, a transition economy and a new member of the EU. The analysis presented in this paper shows results generated using three country-specific static tax and benefit micro-simulation models, respectively: the IFS model for the British system, the STSM model for Germany and the SIMPL model for Poland.¹

Our analysis aims to demonstrate the usefulness of comparative micro-simulation work for the purpose of identifying most important areas for reform relating to antipoverty measures and the labour market. While a large number of studies have used micro-simulation models for that purpose (see for example Haan, Myck 2007a; Bargain, Orsini 2006; and other studies), so far there has been little international analysis including the tax and benefit system in Poland (a recent exception is Haan, Myck 2007b) and we are not aware of comparative micro-simulation studies for the three systems analysed here.

While the type of analysis presented in this paper is in some sense restrictive, since we only look at a selected number of stylised families, the approach we take allows for interesting direct comparisons between family types. Moreover, the set of example families we choose is broad enough to give a very good feel of how the tax and benefit systems in the UK, Germany and Poland affect households’ financial situation. Our analysis focuses in particular on working-age families in the lower end of the income distribution. This is because it is this part of the population for which the problems of poverty alleviation and provision of strong work incentives are especially relevant and often difficult to address. Therefore, the analysis of work incentives provided below looks at the financial situation of the example families assuming that earners in these families receive either the 10th, the 25th or the 50th percentile wage. It is not surprising that work incentives strongly relate to the level of earnings, and – as we shall see in many cases – the financial reward from full-time employment can be extremely low relative to what families may receive when individuals remain out of the labour market.

The paper is structured as follows. In Section 2 we give an outline of the most important aspects of the tax and benefits systems in the UK, Germany and Poland. Section 3 provides some information about the stylised family types we use for our exercise and about the assumptions we make in the calculation of their disposable incomes. In Section 4 we introduce the way in which results have been presented and define replacement ratios (RRs) which are computed for the example families. Discussion of the details of the budget constraints our example families would face under respective tax and benefits systems is presented in Section 5. We focus the discussion on the key differences between the countries as far as the systems of means-tested benefits are concerned (Sections 5.1.1 and 5.1.2), on the most problematic elements of the systems leading to effective marginal tax rates in excess of 100% (Section 5.1.3), and the consequences of means-testing on how rapidly net incomes grow with increasing work intensity (Section 5.1.4). In Section 5.2 we provide a comparison of the main features of the tax and benefit systems which are targeted on families with children. Financial incentives to work are summarised using RRs in Section 6, in which we show how relative attractiveness of work differs between the three countries. We point to major differences between the countries in incentives to work for lone parents (6.1) and couples (6.2). Using RRs we also stress the importance of the effect of in-work support on financial attractiveness for second earners (6.3). Section 7 offers some conclusions and lessons from the analysis for tax and benefit policy in Poland.

2. Tax and Benefits systems - deductions from employment income and main benefits considered in the exercise

Below we describe some details of income taxation and benefit systems in the UK, Germany and Poland paying particular attention to the benefits we subsequently model in computing disposable incomes for the example families we focus on. The description of income taxation focuses on taxation of earnings and includes most important details of the personal income tax and social security contributions system. The benefits we look at are either universal child-related benefits or various forms of means-tested support which the families we consider could apply for. In the case of the UK we also include a description of work related means-tested payments, the so-called in-work credits. The system for each of the countries is described as of 2005. This is the system we use to model financial incentives of the example families in all three countries.

¹ For more details about the Polish model (SIMPL) see Bargain et al. (2007). Details of the German model (STSM) are presented in Steiner et al. (2005).
2.1. The United Kingdom

Income taxation
The taxation system in the UK is individual, and there is no income splitting among partners. Each individual receives an income tax allowance of 4,895 pounds per year. Incomes in the range of 4,895–6,985 pounds per year are taxed at 10%, then income up to 37,295 pounds per year is taxed at 22%, and all income above that at the rate of 40%. If income exceeds the level of the tax allowance (i.e. from the level of 94 pounds per week) individuals are liable to pay national insurance. Employees pay NI at the rate of 11% when their earnings are lower than 630 pounds per week. On income above this, the employee rate is 1%. Employers pay National Insurance at the rate of 12.8% (there is no ceiling on the payment of the employer NI). The basis for the computation of both the income tax and the national insurance is gross earnings defined as total labour cost minus employer’s national insurance contributions.

Transfer system
All children in the UK are eligible for the universal Child Benefit, which in 2005 was 73.95 pounds per month for the first child and 49.60 pounds per month for each subsequent child.\(^2\) Then depending on the family income families with children can receive support through the Child Tax Credit (CTC). This transfer, despite the name is not an integral part of the tax system, and operates more like a benefit. It depends on the total family income. The maximum amount of the CTC a family can get depends on its composition, and is computed as the sum of the Family Premium (45.60 pounds per month), and credits for each child of 141.40 pounds per month. The CTC is withdrawn at 37% of the total gross family income over the level of 13,910 pounds per month before the basic level of the family premium is reached. This is eventually also withdrawn, but only once total gross family income reaches 50,000 pounds per year (the family premium is then withdrawn at 6.7%).

The basic means-tested benefit system in the UK, available to all families, is composed of four major elements. The most basic support is provided through Income Support and Job Seekers’ Allowance (JSA). Low income households can also obtain rent rebates through Housing Benefit and reductions in council tax payments through Council Tax Benefit.

Income Support is paid to poorest families conditional on special circumstances (such as certain types of disability or being a single parent). The unemployed, who do not qualify for Income Support, can receive the Job Seekers’ Allowance, a benefit of the same value as Income Support but conditional on both a fortnightly confirmation of individuals’ readiness to work, and a level of resources. The basic amounts of Income Support in 2005 were: 244.45 pounds per month for a single person and 383.45 pounds per month for a couple. Slightly lower rates apply for individuals below the age of 18. For households whose net income exceeds 20 pounds a week, and where none of the members works more than 15 hours per week, for each 1 pound of extra net income, the amount of benefit paid through Income Support or Job Seeker’s Allowance is reduced by 1 pound. This implies a 100% withdrawal rate.

Housing Benefit and Council Tax Benefit (CTB) can be claimed regardless of the number of hours worked, but when household net income exceeds the level of IS/JSA eligibility, for each 1 pound of extra net income the value of the benefits is reduced by 0.65 pound. Values up to which families can claim these benefits correspond to the values of Income Support, with the exception that there are special premiums for children of 190.90 pounds per month for each child. These account for the fact that the CTC and Child Benefit are included in the computation of the Housing Benefit and the CTB. Income Support, Council Tax Benefit, Housing Benefit and non-contributory Job Seekers’ Allowance are based on weekly income assessment and are not time-limited. The same applies to the CTC and the Working Tax Credit we turn to below.

Eligibility to Income Support in the UK ends if the number of hours worked per week exceeds 15. Then, however, individuals and families become eligible for special additional means-tested benefits which specifically target low paid employees. Since the 2003 reform the role of the in-work support benefit in the UK is played by the Working Tax Credit (WTC). Unlike the in-work support mechanism which preceded the combination of the WTC and the CTC, namely the Working Families’ Tax Credit, the WTC is not limited only to families with children. However, conditions regarding the eligibility to WTC regarding the minimum required number of hours worked are different for those with and those without children. The minimum required number of hours of work for lone parents and for couples with children is 16, while for those without children the minimum is 30 hours per week. There is also an age requirement of 18 years for those with children and 25 for those without. The computation of the amount of WTC which a family is eligible for is similar to the process concerning the CTC. The maximum amount that families can receive is 268.90 pounds per month for lone parents and all couples (with or without children) and 135.50 pounds per month for each additional adult without children. On top of that families with children receive a full-time “bonus” of 55.20 pounds if either the lone parent or any of the partners in the couple works 30 hours per week.

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\(^2\) Most values for the British system are expressed in weekly values. In this paper to make the comparison easier between the three countries we discuss all values in terms of monthly equivalents, taking a monthly value to be equal to 4.35 times the weekly value.
income or more. The WTC is withdrawn at 37% of gross income once income exceeds 5,220 pounds per year. In addition to that, parents can also apply for childcare credits to support their childcare expenses. A couple to be eligible for the childcare credit needs to have both parents working at least 16 hours per week.

2.2. Germany

Income Taxation
In theory, the German income tax is based on the principle of comprehensive income taxation. That means that the sum of a household’s income from all sources is taxed at a single rate after several deductions have been applied. In practice, there are various exceptions to this rule, however, especially regarding the taxation of capital income and pensions. Since the beginning of the 1990s, households have been paying, in addition to the standard income taxes, the “Solidaritaetszuschlag” – a time limited tax supplement implemented in the course of the German reunification. For the year of interest, the year 2005, the supplement amounts to 5.5% of the standard income tax. Another distinguishing feature of the German tax system is the principle of joint taxation of households, whereby the income tax of a married couple is calculated by applying the tax function to half of the sum of the spouses’ incomes; this amount is then doubled to determine the tax amount of the couple. 3

Corneo (2005) provides an historical overview of income taxation in Germany and shows that since the mid-1980s progressivity of income taxation has declined. During the 1990s the German government implemented several minor reforms slightly reducing marginal tax rates and increasing the basis tax allowance. These reforms, however, are not comparable to the effect of the Tax Reform 2000 which determines the tax schedule in 2005. The Tax Reform 2000 reduced the marginal tax rates for all households. For a single household, the changes in marginal tax rates are relatively similar up to about 50,000 euros of taxable income. However, when taxable income reaches the top marginal tax rate the gains from the tax increase. This is due to the large drop of the top marginal tax rate from 51% to 42%. On the lower end, the increase in the tax allowance excludes households with taxable income below 7,664 euros from taxation. Before the reform, in the fiscal system of 2000, this threshold was at 6902 euros. Both, the increase in the tax allowance, and the decreasing marginal tax rates lead to a lower average tax rate over the entire distribution of taxable income.

In addition to taxes, working people pay social security contributions (SSCs). These include, unemployment (6.5% of gross earnings) and health insurance (about 17% of gross earnings) and pension contributions (19.5% of gross earnings). In general, employer and employee pay half of the contributions. The so called Mini/Medi-Job program excludes households with earnings lower than 400/800 euros from the SSCs.

Transfer System
The German transfer system consists of several different income-support programs. These programs have different target groups and vary in their design. In general, the German transfer system can be characterised as a traditional welfare system. Most benefits are targeted to individuals out of work, and the benefits are mostly withdrawn as soon as people start working. This implies that at the bottom of the earnings distribution, the marginal tax rates are very high, sometimes close to 100%. Except for a very minor program, the child supplement, in Germany there are no transfer programs conditional on work, such as in the UK or in the US. Next, we will briefly discuss the features of the main transfer programs. In this analysis we exclude the insurance based unemployment benefits (ALG I). Unemployed, who have worked for more than 12 months over the last three years, qualify for ALG I. This is a temporary benefit which depends on the previous net-earnings (60% of previous net income for a household without children). As ALG I is financed by the social security contributions of the working population it has a different character than the general tax financed transfers and is therefore excluded from this analysis.

• *Arbeitslosengeld* II (Social Assistance, ALGII): ALGII is a means-tested benefit. The basic amount for a single household is 345 euros for West and 331 euros for East Germany. A partner receives slightly less than 311 euros (West) and 298 euro (East) and for children the basic amount is roughly 200 euros depending on age and region. In addition to the basic amount, the household receives support for housing and heating. Thus, the major part of housing benefits is included in ALGII. ALGII is means-tested against all sources of income - taxes and social security contribution are deducted – including child benefits and maintenance payments. The withdrawal rate varies between 70% and 85% and above 1,200 euros per month (1,500 euros per month for those with children) the withdrawal rate is 100%. ALGII is only targeted at households which are ready to take up work. Households with individuals who are not part of the labour force, receive *Sozialhilfe*. The design of *Sozialhilfe* is very similar to ALGII with a slightly different withdrawal rate. The main difference is that in theory households can loose their eligibility for parts of ALGII when they are not actively looking for a job. However, this depends very much on personal and regional circumstances.

• *Kindergeld* (Child Benefit): Households receive child benefits for all children younger than 18 years. Children up to the age of 27 are eligible if they are
in full-time education. For the first 3 children the benefits amount to 154 euros per month, then for every additional child the benefit is 179 euros per month.

- **Child Supplement:** The Child Supplement is an in-work benefit for households with dependent children younger than 18. It amounts to 140 euros and is withdrawn at a rate of 70%. This instrument was partly introduced to decrease the gap of child support for those in- and out-of work. However, because of the design of this transfer with phasing-in and phasing-out range and relatively low payments, only few households benefit from it.

- **Housing Benefits:** In addition to the housing benefits, which are included in the ALG II, there exist general Housing Benefits (Wohngeld). The amount of benefits depends on region, year when the house was built, size of the flat, and number of household members. Eligibility criteria slightly differ from ALG II and so does the withdrawal rate. A household can receive either Wohngeld or ALG II.

- **Guaranteed Maintenance Payments:** When a missing parent cannot pay maintenance payments (for example because of the lack of resources or because the parent cannot be found), the government takes over with transfers between 110 and 170 euros depending on the region and age of the child.

- **Erziehungsgeld:** For children younger than 3 years, there is an additional child rearing benefit (“Erziehungsgeld”) of 300 euros per month which can be drawn for a maximum period of 24 months. This benefit is means-tested and is only granted if one of the parents is on parental leave, i.e. not working more than 30 hours per week. The income thresholds up to which this benefit is granted differ by age of the child and they amount to about 30,000 euros in the first six months after childbirth and are reduced to about 16,500 euros per year for children aged between 7 and 24 months. Above these income thresholds, the benefit is withdrawn at a rate of 62 percent based on household income. Given the assumptions made concerning the age of the children in the families we consider, the Erziehungsgeld is not included in our analysis.  

### 2.3. Poland

#### Income taxation

In Poland both the employer and the employee pay social security contributions. Old age pension insurance is paid at the rate of 9.76%, and disability/survivors’ pensions at the rate 6.5% by both the employee and the employer. On top of that employees pay insurance for sickness and maternity (2.45%) and employers pay work accident and occupational diseases insurance (from 0.97% to 3.86% depending on the nature of the job). Contributions to the Labour Fund (2.45%) and contributions to the Fund of Guaranteed Employees’ Benefits (0.15%). This gives the total rate of social security contributions of 40% (of gross earnings, defined as total labour cost minus the employer’s part of SSCs.).

Individuals also pay Health Insurance at the rate of 8.5% of taxable income (i.e. income after SSC contributions). Of these, the majority (7.75 percentage points) can be deducted from personal income tax.

The income tax system in Poland allows for joint taxation for couples and single parents. In these cases only half of the family income is subject to the tax schedule and the resulting tax liability is then multiplied by two. Each employee has a tax allowances for work costs (‘’revenue costs’’). The maximum allowance is 1,227 zlotys.

The tax schedule has three brackets with rates applied to these at: 19%, 30% and 40% (with thresholds at 37,024 and 74,048 zlotys per year - above the latter figure taxes are paid at 40%). Each individual also has a universal tax credit of 530.08 zlotys per year. As mentioned above a major part of Health Insurance payments is also treated as a tax credit.

#### Transfer system

In 2005, there were three major elements of the Polish means-tested benefits system: Zasiłek Rodzinny (Family Benefit, FB), Dodatek Mieszkaniowy (Housing Benefit, HB) and Pomoc Społeczna (Social Assistance, SA) and they have been described in detail in Bargain et al. (2007). The first of those is by far the most common with about 22.6% of all households receiving some form of the FB. The FBs are specific benefits for families with children and include the basic Family Allowance with additional supplements. These include: a Supplement for Child Birth, a Supplement for Lone Parents (SLP) paid to those lone parents who do not receive any support from the absent parent, a Supplement for Large Families which provides additional resources to families with three or more children, and a Supplement for the Start of School Year. The FBs are conditional on previous year’s income of the family and are paid if the average monthly income does not exceed 504 zlotys per capita. The amounts of the basic Family Allowance in 2005 were: 43 zlotys for the first and the second child in the family, 53 zlotys for the third child and 66 zlotys for the fourth and subsequent children. The average amount of the FA per child was 45.8 zlotys, and it was paid to about 5.2 million children. Out of the supplements

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4 In January 2007, the child rearing benefit was replaced by a new scheme of parental leave benefits called “Eltern geld”. This new benefit is not means-tested but rather related to pre-birth earnings of the parent who is on parental leave.

Parents who have not been working prior to the birth of their child receive a minimum amount of 300 euros per month. The means test has been abolished, however the maximum duration period has been reduced to 14 months.

5 In the calculations we assume the average rate of 2.42%.

6 This is a cut-off threshold, i.e. there is no phasing out of the benefit, but it is either paid in the full amount or not at all.
the SLP was by far the most commonly received (0.7 million families) and the most generous with the average monthly value of about 176 zlotys. The Housing Benefit was granted to approximately 0.76 million households in 2005, i.e. about 5.7% of all households and as its name suggests provided assistance related to housing expenses. The eligibility criteria include income and flat size which cannot exceed specified limits conditional on the number of people living in the household. The amounts of the HB relate to the cost of rent and other household expenses like electricity water and heating, though in most cases authorities use imputed values for both rent and expenses. In 2005, the average monthly amount of the HB was 135.10 zlotys per household among those who received the HB.

Social Assistance benefits play the role of the last resort safety net, and they are the least common of the means-tested benefits in Poland. Permanent Social Assistance (PAS) benefits are paid to those who are unable to work due to age or disability and who are not entitled to a social insurance disability or retirement pension. The Temporary Social Assistance (TSA) scheme - which is the benefit modelled in our exercise - is constructed as a top-up benefit, and the TSA is meant to be the last resort safety net for households in Poland. It is conditional on the family having “insufficient resources” and meeting certain social criteria which are, however, sufficiently broad to include most families in difficult financial situations. However, the criteria to be met with respect to “insufficient resources” are very strict and limit the number of recipients of the TSA to only about 0.3 million families. The amounts of the TSA paid to the poorest families in Poland are computed in reference to a legislated family-specific minimum income but in most cases do not represent the difference between actual income and the computed minimum.

The central SA legislation specifies the minimum income levels below which families’ disposable incomes ought not to fall. This amount depends on the demographic structure of the household. In 2005, the monthly value used for the calculation of the household level minimum was 316 zlotys per person, regardless of age, with the exception of single adult households in which case the value was 461 zlotys for the adult (and 316 zlotys for any child). The legislation implies that the actual amount of the TSA paid to families should cover the difference between the actual income and the specified minimum. This is a relatively common feature of Social Assistance schemes in many Western European countries – also in the UK and Germany – resulting in most cases in 100% withdrawal rates. However, the peculiarity of the Polish system is that the central government guarantees only a proportion of the difference between the legislated minimum and the actual family income. This proportion is 20% for multi-person households or 30% for single person households. The payment of the remaining 80% or 70% is left at the discretion of local governments, which often prefer to spend their resources differently.

The partial coverage of the minimum income, has two important consequences for the budget constraints. Naturally it significantly reduces the amounts of the benefits paid to families in the out-of-work scenarios. However, because the minimum income with reference to which the amounts get computed exceeds the amounts paid, the withdrawal rate of the TSA is significantly below 100% with respect to changes in net income prior to the SA assessment.

3. Family types and disposable income simulations

In this section we present a brief description of the family types we have selected for the comparative exercise. The analysis covers 8 types of families distinguished by demographic characteristics. For each of the broad demographic types we run calculations under different assumptions concerning individual wages, incomes from the missing spouse (in the case of lone parents) and eligibility for housing benefits. This gives us 13 family profiles and for each of these we compute incomes for three different wage levels of the adult whose work incentives we examine. The three different wage levels are the 10th, the 25th and the 50th percentile wage taken from the respective 2005 wage distributions (separately for men and women).

The details of the 13 family profiles are presented in Table 1. It provides information on the assumed number and ages of children, on whether we assume that the lone parent receives any maintenance support from the missing parent, and whether the family is eligible to claim the housing benefit. As we can see there are five family profiles of single adults (profile 1 without children, profiles 2-5 with children) and eight family profiles of couples (profiles 6, 10 and 11 without children and profiles 8, 9, 12 and 13 with children). For each of these profiles we compute incomes at specific work intensity (defined by hours of work per week) for

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7 There are separate element of Family Benefits which are not means-tested and are targeted at families with disabled children. These are the Nursing Allowance and the Parental Leave Allowance.

8 The income criterion in 2005 was 125% or 175% of the official Minimum Pension, which was 562.58 zlotys per capita for single and multi-person households respectively, and the amounts paid are withdrawn as income rises at rates which depend on household size and per capita income.

9 According to unpublished government statistics only about 18% of the total spending on the Temporary SA comes form the local governments.

10 If the families do not receive any Housing Benefit then these withdrawal rates correspond to the guaranteed rates of TSA payments.

11 Depending on the specific country this eligibility may depend on whether the person lives in rented accommodation, has a high level of assets, or lives in a large apartment.
one adult earner. In the case of couples, for profiles 6-9 it is assumed that one of the partners (the wife) does not work and incomes are computed for different work intensity of the man, while for profiles 10-13 we assume that the man works full-time and incomes are computed at different work intensity of the second earner (the woman). The difference between profiles 10 and 11 as well as 12 and 13 is the assumed income of the man at full-time hours. In the case of profiles 10 and 12 we assume that his hourly wage corresponds to the 25th percentile of male earnings, while in the case of family profiles 11 and 13 to the 50th percentile of male earnings.

Apart from assumptions concerning individual wages an analysis based on stylised families also requires the choice of other parameters which influence the level of disposable income these families will have at specific levels of work intensity. In particular, we have to make assumptions concerning the level of housing costs (for the families eligible to receive housing benefits), and the level of maintenance received from the absent parent (in the case of lone parents). In all these cases – similarly to the level of assumed individual wages – we choose to focus on families whose incomes and wealth are relatively low and set the levels of these parameters at the 25th percentile of respective country-specific distributions. The assumptions we make concerning these parameters together with the information on the individual wage are provided in Table 2.

### Table 1. Family profiles considered in the exercise

<table>
<thead>
<tr>
<th>Family profile</th>
<th>Description</th>
<th>Age of children</th>
<th>Maintenance</th>
<th>Housing Benefit</th>
<th>Percentile wage, female</th>
<th>Percentile wage, male</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Single female no children</td>
<td>n.a.</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Single female, one child</td>
<td>5</td>
<td>No</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Single female, one child</td>
<td>5</td>
<td>Yes</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Single female, one child</td>
<td>5</td>
<td>Yes</td>
<td>No</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Single female, two children</td>
<td>5 and 8</td>
<td>Yes</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Couple, male earner, no children</td>
<td>n.a.</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Couple, male earner, one child</td>
<td>5</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Couple, male earner, one child</td>
<td>5</td>
<td>n.a.</td>
<td>No</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Couple, male earner, two children</td>
<td>5 and 8</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Couple, two earners, no children</td>
<td>n.a.</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td>FT @ 25</td>
</tr>
<tr>
<td>11</td>
<td>Couple, two earners, no children</td>
<td>n.a.</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td>FT @ 50</td>
</tr>
<tr>
<td>12</td>
<td>Couple, two earners, two children</td>
<td>5 and 8</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td>FT @ 25</td>
</tr>
<tr>
<td>13</td>
<td>Couple, two earners, two children</td>
<td>5 and 8</td>
<td>n.a.</td>
<td>Yes</td>
<td>10, 25, 50</td>
<td>FT @ 50</td>
</tr>
</tbody>
</table>

Note: In case of two-earner couples we assume fixed full-time employment of the man and vary the hours of work of the woman.

Source: Authors’ compilation.

The aim of the article is to present the consequences the tax and benefit systems in the three countries have on disposable incomes of the selected families. We do this by means of computing disposable incomes at different intensity of work, which is represented by different numbers of hours worked per week. This gives us family-specific benefit systems and allows us to calculate replacement ratios at different work intensity. In each case the budget constraints are drafted for the hours range of 0–45 for one earner. In cases of couples we first draw the budget lines for the different number of hours worked by the man, i.e. assuming that the woman does not work (family profiles 6–9), and then for the woman, assuming that the man works full-time (family profiles 10–13). At each hour point the budget lines show the disposable income of the family at this specific work intensity. Budget constraints for the 13 family profiles are presented in Figures 1 to 13. In the case of each Figure we show the results for the UK (panels A and B), Germany (panels C and D) and Poland (panels E and F). For every country the first panel (panels A, C, E) shows the different components of the budget constraint drafted under the assumption of the 25th percentile of the male (family profiles 6–9) or female (profiles 1–5 and 10–13) country specific wage distribution. The second panel (panels B, D, F) shows only the total disposable incomes but under three different assumptions concerning the individual wage (i.e. the 10th, 25th and 50th percentile of the distribution). Detailed description of Figures 1 to 13 is given in Section 5.

A useful way of summarising the effect of the tax and benefit system on the incentives to work is an analysis of replacement ratios (RRs), which are ratios of disposable income in the out-of-work scenario to the disposable income in the in-work scenario. This is done below in

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12 See for example Nickell (2001).
Section 6 for each of the 13 family profiles, in each case using the three chosen hourly wages. The advantage of presenting the results in the form of replacement ratios on top of detailed analysis of the shape of the budget constraint lies primarily in the relative nature of these measures. This means that on the one hand, we can make direct and straightforward comparisons of attractiveness to work within countries for different types of families. On the other hand, from the point of view of the international comparison, RRs allow easier comparative analysis since the relative measures are independent of exchange rates and purchasing power assumptions.

RRs for single individuals are computed as:

$$RR_s = \frac{Y_{j|(\text{h}=0)}}{Y_{j|(\text{h}=1)}} \quad (1)$$

where \(Y_{j|(\text{h}=0)}\) is out-of-work income and \(Y_{j|(\text{h}=1)}\) is in-work income of a single adult family \(j\). The results presented here are computed under two in-work scenarios of part-time (20 hours) and full-time (40 hours) work. For couples in family profiles 6–9 RRs are computed as:

$$RR_{c|1} = \frac{Y_{j|(\text{h}=0, \text{h}=0)}}{Y_{j|(\text{h}=1, \text{h}=1)}} \quad (2)$$

where \(Y_{j|(\text{h}=0, \text{h}=0)}\) is income when both partners are out of work and \(Y_{j|(\text{h}=1, \text{h}=1)}\) is income in work when the man works \(t\) hours and the woman does not work. The results are again computed under two in-work scenarios for the man, of part-time (20 hours) and full-time (40 hours) work.

Similarly for couples in family profiles 10–13 RRs are computed as:

$$RR_{c|2} = \frac{Y_{j|(\text{h}=0, \text{h}=0|1)}}{Y_{j|(\text{h}=1, \text{h}=1|1)}} \quad (3)$$

where \(Y_{j|(\text{h}=0, \text{h}=0|1)}\) is income when the man works full-time and the woman does not work and \(Y_{j|(\text{h}=1, \text{h}=1|1)}\) is in-work income when the man works full-time and the woman works \(t\) hours per week (again computed under two in-work scenarios of part-time (20 hours) and full-time (40 hours) work). Computed replacement ratios are given in Table 3 for part-time work and Table 4 for full-time work, and detailed discussion of replacement ratios is presented in Section 6.13

5. Results – budget constraints

In this section we provide a detailed description of the budget constraints generated for the thirteen family profiles for each of the countries presented in Figures 1 to 13. A general overview of the results is given in Section 5.1. Then, in Section 5.2 we focus more specifically on the type of support extended to families with children.

In panels A, C and E of the thirteen figures we present the different elements of disposable incomes. Where possible we have tried to mark similar components of income with the same colours to make the comparisons easier. Thus, net earnings are represented by the black

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Table 2. Country specific input parameters used for micro-simulation

<table>
<thead>
<tr>
<th>Wages</th>
<th>UK (pound)</th>
<th>Germany (euro)</th>
<th>Poland (zloty)</th>
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<tbody>
<tr>
<td>Female:</td>
<td>hourly</td>
<td>hourly</td>
<td>monthly</td>
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<tr>
<td>– 10 percentile</td>
<td>4.82</td>
<td>5.98</td>
<td>852</td>
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<tr>
<td>– 25 percentile</td>
<td>6.02</td>
<td>8.5</td>
<td>1084</td>
</tr>
<tr>
<td>– 50 percentile</td>
<td>8.39</td>
<td>12.53</td>
<td>1480</td>
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<tr>
<td>Male:</td>
<td>hourly</td>
<td>hourly</td>
<td>monthly</td>
</tr>
<tr>
<td>– 10 percentile</td>
<td>5.63</td>
<td>8.13</td>
<td>928</td>
</tr>
<tr>
<td>– 25 percentile</td>
<td>7.54</td>
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</tr>
<tr>
<td>– 50 percentile</td>
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<table>
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<tr>
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<th>monthly</th>
<th>monthly</th>
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<tr>
<td>– 25 percentile</td>
<td>198.4</td>
<td>216</td>
<td>3.12*32m2</td>
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<td>– 25 percentile for multiple adult renting HH</td>
<td>212.5</td>
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<td>3.12*42m2</td>
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<table>
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<th>Bills:</th>
<th>monthly</th>
<th>monthly</th>
<th>monthly</th>
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<td>– 25 percentile for single adult renting HH</td>
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<td>47</td>
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<tr>
<td>– 25 percentile for multiple adult renting HH</td>
<td>-</td>
<td>86</td>
<td>265</td>
</tr>
</tbody>
</table>

Maintenance from absent parent: | monthly | monthly | monthly |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>– 25 percentile</td>
<td>130.5</td>
<td>312</td>
<td>230</td>
</tr>
</tbody>
</table>

Note: Percentiles for wages, maintenance and housing costs come from: Family Resources Survey 2003/04 (indexed to 2005) for the UK, German Socio-Economic Panel (GSOEP) 2005 for Germany, and Household Budget Survey (HIES) 2005 for Poland.

Source: Authors’ calculations.

13 Details of the absolute levels of disposable incomes used for the calculations of replacement ratios are available from the authors upon request.
bars, maintenance payments from the absent partner are marked in light grey, basic child or family benefits are marked in dark green, housing related benefits are marked in blue, and social assistance is represented as white bars. The legend to each of the figures presents the details including the various country-specific components of the disposable income.

An important point needs to be clarified concerning the results for Poland which relates to the way we model Temporary Social Assistance (TSA). As mentioned in Section 2.3 only a proportion of the TSA is guaranteed by the central budget and the rest of the payment a family is eligible for according to the Social Assistance legislation (which is 70% for single-person households and 80% for larger households) remains at the discretion of local authorities. More often than not these payments are not received by families. To account for this in the budget constraints drafted for Poland we separate out the central (white bars) and the municipal (dark grey bars) parts of the TSA in panels E of Figures 1 to 13. In panels F of the figures we present the budget lines which result from including only that part of the TSA which the families can be sure to receive, i.e. the centrally guaranteed element. This way of presenting the results, on the one hand, allows to see the degree of generosity of the TSA legislation, and on the other, shows the actual, guaranteed financial incentives that the families face in the labour market. It also makes the results more consistent from the comparative point of view.

Another point to note in the case of the figures drawn for the UK are the Council Tax (CT) payments, which are represented in panels A by the red bars. The CT values are then subtracted from the total family incomes for the purpose of drawing the budget lines in panels B.

5.1.1. In-work support

An important element which differentiates the UK from the other two countries is the in-work support system, which in panels A is represented by the brown bars. The difference in the generosity of the Working Tax Credit between those with and those without children is also quite clear, for example when we compare panels A in Figure 1 with those in Figures 2 to 5. What is also rather striking is the relative high level of support for families with children in the UK through the combination of the Child Benefit and the Child Tax Credit. It is interesting to note that the CTC extends relatively high up the income distribution. The families are eligible to receive relatively high amounts of the CTC even in scenarios when one partner is working full-time and the other part time, and the family-premium part of the CTC is also received by the family in which both partners work full-time (see panel A of Figure 13).14 What is also an important feature of the British system is the fact that eligibility for social assistance (in the form of Income Support) ends at relatively low levels of income. This is the case both for singles and for couples, and is partly related to the maximum working hours limit (15) but partly also to the relatively high levels of payments through the CTC.

5.1.2. Social Assistance and Housing Benefit

Eligibility for social assistance seems to end at low levels of income also in Poland, but this is the case only for single-adult families. Couples in Poland, and especially those with children, are eligible to receive the TSA even at relatively high levels of wage income. This can be seen on panel E of Figures 7, 8 and 9. In Figure 7E we can see that the family is eligible for Social Assistance even when the man in the couple works full-time (at 25th percentile earnings). In Germany eligibility for social assistance (ALGII) extends relatively high up the earning scale for both singles and couples, but part of the explanation for that is the fact that the ALGII also includes the housing benefit. Thus, for example, if we compare the budget constraints of two families - one which is eligible to receive the Housing Benefit and the other which is not (see Figures 7D and 8D) we can see that the ALGII ends relatively early - at about half-time earnings of the man in the couple. In Poland the means-test for the TSA also includes the Housing Benefit, and so when the family is not eligible for the HB the eligibility for the TSA extends further (compare Figures 7E and 8E). Such high level of TSA eligibility for couples in Poland clearly stands out in our analysis.

The eligibility rules concerning the Housing Benefit in Poland are also related to the earlier point. Neither in the UK, nor in Germany the eligibility to the benefits related to housing expenses extends as high up the relative earnings distribution as in Poland. As we can see on the figures, the Polish HB rules imply that a single woman working full-time at 25th percentile female earnings would still be eligible to claim the HB regardless of whether she does or does not have children. The same applies to all one-earner couples in which the man works at the 25th percentile male wage. On Figures 10, 12 and 13 we can see that the eligibility does not end even if the second partner begins to work part-time. If the earnings of the man are low (Figure 12) and we consider a couple with two children, the

14 At 50th percentiles earnings of the man and at 25th percentile earnings of the woman.
eligibility to the HB does not end even in the situation when both partners work full-time.

5.1.3. Means-tested benefits and Effective Marginal Tax Rates

The budget constraints presented in this paper also allow to identify elements of the tax and benefit systems which may need particular attention of policy makers with respect to the labour market incentives the systems provide. This refers particularly to the features of the systems which lead to effective marginal tax rates (EMTRs) in excess of 100%. In the figures these can be identified as points on the budget lines where the level of the disposable income falls despite the fact that work intensity (and thus gross earnings) increase.

Getting rid of EMTRs in excess of 100% was one of the aims of the tax and benefit reforms in the UK introduced since the early 1990s, and all recent changes to taxes and benefits have been conducted in such a way so as to avoid these effects. As we can see on panels A and B of Figures 1 to 13, increases in gross earnings never lead to reductions in disposable incomes. There are parts of the budget lines which are “flat” implying EMTRs of 100%, but there are no points on the budget lines suggesting rates in excess of these. This is not the case when we look at the budget lines generated by the German and the Polish system.

EMTRs in excess of 100% – Germany

The German system introduces EMTRs in excess of 100% as a result of the so called Mini-jobs. As outlined in Section 2.2, employees pay no Social Security Contributions on earnings of less than 400 euros per month. However, once the level of earnings exceeds this limit, SSCs have to be paid not only on the earnings over and above the 400 euros, but also on the initial 400. This implies that exceeding this level of gross earnings results in a reduction of disposable income. As we can see on Figures 10-13 the combination of the tax and the SSCs systems implies that this applies especially to the work of second earners in couples. Depending on the level of earnings the woman the 400 euros threshold is reached at different levels of work intensity, but the negative work incentives can be seen in the case of budget lines drawn for all second earners. EMTRs in Germany result also from the combination of tax and SSC payments with the withdrawal of the Child Supplement – this can be seen in Figures 7, 8, and 9 on panels C and D.

EMTRs in excess of 100% – Poland

In Poland the EMTRs exceeding 100% are related to two elements of the benefit system, namely the Housing Benefits and the Family Benefits. In the case of the Housing Benefits while the level of the payments is gradually withdrawn as net incomes rise, the benefit is withdrawn entirely at the point when the income considered for the means-test exceeds a certain threshold value. The effect of such withdrawal can be seen in Figures 1, 2, 3, 4 and 6 on panels F for the case of the disposable income computed at 50th percentile wage.

The same effects are also present in Figure 10 at all three wage levels of the second partner. The effects of withdrawing the Single-Parent Supplement of Family Benefits can be seen in Figure 2 (panels E and F). In Figure 2E we can see that the family exceeds the threshold for the higher level of the supplement when the woman begins to work more than 14 hours per week. This effect happens at lower work intensity for the 50th percentile wage and at higher work intensity for the 10th percentile wage (Figure 2F), but in all cases working an extra hour leads to a lower level of the benefit. On the figures we can also identify three profiles of families for which a certain level of earnings the Family Benefits are fully withdrawn. This can be seen in Figures 2 and 3 (panels F) for the case of the disposable income with 50th percentile wage. For this level of the wage Family Benefits are withdrawn at work intensity of about 35 hours per week. The result of this is a reduction in disposable income in response to higher level of earnings. Since the eligibility threshold for the FB is computed per capita (including the adults in the family), couples with children are eligible for the benefits even at relatively high level of earnings. Of all the budget constraints drafted for couples the withdrawal of Family Benefits can be noticed only in the case of the family profile 13, where both partners work at 50th percentile wage and the man works full-time (Figure 13F). At the point when the woman’s work intensity increases to about 35 hours per week, the family is no longer eligible to receive the Family Benefits. The negative effects on work incentives which are the consequence of the existence of very high EMTRs will also be reflected in the replacement ratios, the analysis of which is presented below in Section 6.

5.1.4. Work intensity and income gains

The budget lines presented in panels B, D and F also provide a good intuitive reflection of how strong are the labour market incentives generated by the respective tax and benefit systems. This is given by the slope of the budget lines at various levels of work intensity, which shows how fast disposable incomes grow in response to increases in hours of work and thus gross earnings.

The assumptions made for Poland concerning the payments of Temporary Social Assistance imply low levels of support through the TSA but also relatively low withdrawal rates of the benefit and this in turn means that disposable incomes generally grow as earnings rise even at the lowest levels of earnings. In Germany and in the UK, on the other hand withdrawal rates of social assistance benefits (ALGII and Income Support) at low levels of earnings imply very low increases in disposable
incomes or in some cases no increases at all (i.e. 100% EMTRs). This is very clearly demonstrated, for example in Figures 1 and 7.

It is also important to note that in the UK in the cases of several families, earnings grow at lower rates – compared to Germany or Poland – even beyond the points where social assistance and housing benefits have been withdrawn. This result relates to the withdrawal of the WTC. On the one hand, the payments of the WTC encourage taking up employment. On the other hand though, because of the extension of the earnings range over which some benefits are withdrawn, the WTC reduces incentives to increase work intensity or in fact to increase productivity at the same work intensity. The effect of the WTC as far as the contribution of earnings to the level of disposable income is concerned can be seen very clearly when comparing Figures 1B and 2B, which are drafted for the same levels of gross earnings. We can see that in the case where the woman receives no WTC (the line of the disposable income with 50th percentile wage in Figure 1B) disposable incomes grow faster compared to the rate of increase of earnings for the woman with the same level of earnings but who is eligible to receive the WTC (Figure 2B). Interesting differences between the three tax and benefit systems in terms of the rate of increase in the disposable income in response to growing gross earnings can also be seen for example in Figures 3, 4, 6 and 8.

5.2. Budget constraints - support for families with children

For several important reasons the financial incentives on the labour market for families with children deserve some special attention. One of these is the fact that the trade-off between efficiency and equity in the case of families with children is especially difficult. On the one hand, child poverty is an important policy concern and poverty among children may have significant long-term social and economic implications. On the other hand, since families with children represent a large proportion of the population, maintaining overall high employment levels would be impossible without encouraging parents to take up work.

Parents’ employment, apart from economic implications for the households, may also have positive effects on child development and the child’s outcomes such as school achievements and health. However, providing sufficient resources in out-of-work scenarios, combined with higher costs of working for families with children (among other things in the form of childcare) implies that providing strong financial incentives to work is far from straightforward. Tax and benefit treatment of families with children is therefore a very important issue on the agenda of most governments.

The British government has for a long time made reduction of child poverty one of the top priorities. The reduction was to be achieved by increasing the generosity of government transfers for families with children and, at the same time, increasing the attractiveness of employment to parents by making work pay more. The first tool through which this was supposed to be achieved was the Working Families’ Tax Credit (WFTC), introduced in October 1999 – a reform which increased the relative generosity of in-work transfers. This mechanism was subsequently replaced by the Children’s Tax Credit and the Working Tax Credit in March 2003. The first of those combined several child-related elements of the tax and benefit system, while the other was to preserve the greater financial attractiveness of work which was present in the WFTC.

While the WFTC reform improved financial incentives to work, the overall package of reforms introduced by the British government since 1997 has had mixed effects on the attractiveness of employment. The recent reforms and proposals of reforms of the tax and benefit systems in Germany and Poland also signal that the issues of financial attractiveness of employment for parents is an important concern. In Germany the focus of attention has been the issue of parental leave after childbirth and the problem of appropriate provision and affordable cost of childcare.

In Poland on the other hand, the recent discussions focused on the provision of tax allowances for families with children thereby making work pay more for parents. These recent government proposals as well as the structure of the 2005 systems presented in our analysis show different approaches to supporting families with children, and the different solutions adopted offer potential cross-country lessons. Below we use the example families to discuss the operation of the benefit design with special attention to families with children.

5.2.1. Support for lone-parent families

Figures 2-5 show some important differences in the treatment of lone parents in the tax and benefit systems in the three countries. One of the more striking points of the analysis of our examples is the fact that financial incentives to work are not much stronger for the lone parents who receive maintenance support from the missing partners (compare FP2 and FP3). This is something we could expect since this support counts as income for the computation of means-tested benefits, and so out-of-work income should not be much different, while in-work income should be higher for the parents receiving maintenance. This, however is counteracted in

15 This is reflected in the “kinks” in the budget lines at 16 and 30 hours of work per week, which are the eligibility points for the WTC and for the full-time premium.
16 For more details on the British reforms see for example Clark et al. (2002); Blundell (2000), and Brewer (2003).
17 See for example Brewer et al. (2006), Blundell et al. (2005) or Myck, Reed (2006).
Germany and Poland by additional payments in the form of state-financed maintenance payments or a special supplement in Family Benefits, respectively. In-work incomes are higher in the UK for the families which do receive maintenance, and so these families have stronger incentives to work than lone parents who do not receive support from the absent parent. What is also noteworthy when looking at the budget constraint charts is the very big difference in disposable incomes of lone parents who are not eligible for Housing Benefit compared to those who do receive the HB (Figures 2 and 3). It is also interesting to point out that unlike in the UK and Germany where Social Assistance is treated separately from the Housing Benefit (in the sense that the Housing Benefit is not treated as income for the Social Assistance means-test), in Poland the family profiles 2 and 3 – in theory, i.e. according to the legislated minimum income - are eligible for the same level of support at zero hours of work. Moreover, the effect of the Working Tax Credit in the UK is most pronounced (see Figures 3A and 4A) especially in the case of lone parents who cannot claim the HB. This effect will also be quite clear in the more detailed analysis of replacement ratios below.

5.2.2. Support for couples with children

As we can see in Figures 7, 8, 9, 12 and 13 the generosity of the basic support for families with children in couples is much higher in Germany compared to the UK and Poland. An important difference which cannot be seen on the pictures presented here is the fact that the Polish family support is means-tested, while both in the UK and Germany it is universal, i.e. independent of the level of family income. While in the UK the Child Benefit is supplemented by payments through the Children’s Tax Credit and the Working Tax Credit (which is more generous for those with children), in Poland the families received no further child-related support from the state in 2005.

6. Results – replacement ratios

In this section we discuss the results presented in Tables 3 and 4 which show replacement ratios computed for the 13 family profiles for each of the three assumed wage rates using the formulae discussed in Section 4. From the point of view of the labour market it is especially important how financial incentives – here expressed in the form of RRs – differ by family profile for the same level of relative earnings and how they differ for a given family profile for different levels of earnings, i.e. how strong is the progression of the disposable income as earnings rise.

Given the low level of out of work means-tested support in Poland (we assume that the families receive only the centrally guaranteed proportion of Temporary Social Assistance) it is not surprising that in most cases financial incentives to work as reflected in the RRs are strongest in Poland. This is the case especially for single adults without children (family profile, FP1) and first earners in couples without children (FP6). For these family profiles financial incentives to take up employment are significantly stronger in Poland, compared to the UK and Germany. Financial incentives to part-time work in Poland are similar in magnitude to those related to full-time employment in the other two countries. As far as the comparison between the UK and Germany is concerned it is worth noting that while incentives to part-time work in the UK are very low (due to the very high benefits withdrawal rates at low incomes), this is no longer the case for full-time work, which at all wage levels is financially more attractive in the UK compared to Germany. This is the case both for singles and couples without children.

6.1. Financial incentives for lone-parents

For lone parents the comparison between the UK and Germany proves to go very strongly in favour of the UK, where financial incentives to work for family profiles 2, 3, 4 and 5, all except one imply higher attractiveness of employment at all three wage levels. Financial incentives are especially strong in the UK in the case of a lone parent with one child who is not eligible to receive the Housing Benefit (FP4). In this case in fact, financial incentives to part-time work at the two lower wage rates are even stronger in the UK than in Poland. This is the effect of the additional benefits which lone parents in the UK receive in the form of in-work support. The high level of this support at part-time work can also be noticed in Figure 4. It is interesting to note, though, that once the WTC is withdrawn (at higher levels of earnings) the difference in financial attractiveness of work diminishes and in fact the full-time RR (Table 4) for the 50th percentile wage is lower in Germany than in the UK (0.354 relative to 0.363). Owing to the Working Tax Credit employment is also significantly more attractive in the UK compared to Germany for family profile 5. For this family profile the effect of the in-work support is such that the RRs computed for the UK are very close to those calculated in the case of the respective family under the Polish system.

6.2. Financial incentives for first and second earners in couples

In the case of first earners in couples (i.e. family profiles 6-9) the pattern is relatively similar, with relatively strong effects of in-work support in the UK, especially for families with children in the cases of low assumed
Table 3. Replacement ratios at part-time work (20 hours per week)

<table>
<thead>
<tr>
<th>Family profile</th>
<th>UK</th>
<th>Germany</th>
<th>Poland</th>
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<tbody>
<tr>
<td></td>
<td>FT-10pc</td>
<td>PT-25pc</td>
<td>PT-50pc</td>
</tr>
<tr>
<td>Family profile 1</td>
<td>0.909</td>
<td>0.866</td>
<td>0.777</td>
</tr>
<tr>
<td>Family profile 2</td>
<td>0.787</td>
<td>0.766</td>
<td>0.713</td>
</tr>
<tr>
<td>Family profile 3</td>
<td>0.721</td>
<td>0.666</td>
<td>0.618</td>
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<td>Family profile 4</td>
<td>0.523</td>
<td>0.483</td>
<td>0.448</td>
</tr>
<tr>
<td>Family profile 5</td>
<td>0.781</td>
<td>0.731</td>
<td>0.685</td>
</tr>
<tr>
<td>Family profile 6</td>
<td>0.922</td>
<td>0.896</td>
<td>0.838</td>
</tr>
<tr>
<td>Family profile 7</td>
<td>0.877</td>
<td>0.869</td>
<td>0.827</td>
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<td>Family profile 8</td>
<td>0.714</td>
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<td>Family profile 9</td>
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<td>0.892</td>
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<td>Family profile 10</td>
<td>0.691</td>
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<td>Family profile 11</td>
<td>0.758</td>
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<td>Family profile 12</td>
<td>0.641</td>
<td>0.619</td>
<td>0.787</td>
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<tr>
<td>Family profile 13</td>
<td>0.820</td>
<td>0.786</td>
<td>0.732</td>
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</table>

Note: FT-10pc - part time replacement ratio for the 10\textsuperscript{th} percentile wage.
Source: Authors’ calculations.

Table 4. Replacement ratios at full-time work (40 hours per week)

<table>
<thead>
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<th>Family profile</th>
<th>UK</th>
<th>Germany</th>
<th>Poland</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>FT-10pc</td>
<td>FT-25pc</td>
<td>FT-50pc</td>
</tr>
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<td>Family profile 1</td>
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<td>Family profile 2</td>
<td>0.655</td>
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<td>Family profile 3</td>
<td>0.574</td>
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<td>0.500</td>
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<td>0.417</td>
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<td>Family profile 5</td>
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<td>0.617</td>
<td>0.570</td>
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<td>Family profile 6</td>
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<td>0.637</td>
<td>0.456</td>
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<td>0.719</td>
<td>0.602</td>
</tr>
<tr>
<td>Family profile 8</td>
<td>0.601</td>
<td>0.551</td>
<td>0.462</td>
</tr>
<tr>
<td>Family profile 9</td>
<td>0.818</td>
<td>0.760</td>
<td>0.678</td>
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<tr>
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<td>0.521</td>
<td>0.452</td>
</tr>
<tr>
<td>Family profile 11</td>
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<td>0.604</td>
<td>0.536</td>
</tr>
<tr>
<td>Family profile 12</td>
<td>0.761</td>
<td>0.707</td>
<td>0.620</td>
</tr>
<tr>
<td>Family profile 13</td>
<td>0.708</td>
<td>0.666</td>
<td>0.595</td>
</tr>
</tbody>
</table>

Note: FT-10pc - full time replacement ratio for the 10\textsuperscript{th} percentile wage.
Source: Authors’ calculations.

earnings. It is worth noting, though, how important for employment incentives for the first earner in the case of Germany is the family tax-splitting system. For the first earner in the couple in family profiles FP7, FP8 and FP9 at relatively high earnings (50\textsuperscript{th} percentile) financial incentives to work are stronger in Germany than in the UK. The incentives are very close also at the 25\textsuperscript{th} percentiles wage. Joint taxation, which in a progressive tax system gives preferential tax treatment to first earners in couples, is one of the most likely explanations of this fact. In the case of a single-earner couple the benefit of this treatment is higher, the higher is the level of earnings.

For second earners in couples (FP10-FP13) the RRs for the family profiles we focus on are in general no longer affected by Social Assistance systems. They are therefore much more similar for all three countries. For second earners in couples without children financial incentives to work for second earners are strongest in the UK. This may be to some extent related to the overall level of taxation, but one of the determining factors here may be the joint taxation system operating in Poland and Germany. This is because tax splitting generally implies relatively higher tax burden on the second earner. The RRs for second earners are especially high in Germany in the case of FP11 (both part and full-time) – a couple without children where the first earner works full-time at 50\textsuperscript{th} percentile wages. For the Polish system the difference between RRs for couples without children (FP10 and FP11) is very small – this relates to the fact...
that at this level of earnings both partners are taxed at the same tax rate. The only advantage of joint taxation for the first earner is therefore the universal tax credit.

In Poland the differences are slightly higher for the family profiles with children (FP12 and FP13) which in the scenario when the second earner does not work are eligible for the Housing Benefit. Moreover, when both partners earn the 50th percentile wage and work full-time then they are no longer eligible to receive Family Benefits. This leads to a much higher replacement ratio for the second earner at full-time 50th percentile earnings for FP13 compared to FP12 (0.661 compared to 0.569).

6.3. Drawbacks of in-work support

We have discussed above the positive effects of in-work support on financial incentives to work for lone parents and first earners in couples in the British system. A comparison of the RRs, however, is also instructive in demonstrating the negative consequences of in-work support on the labour market, namely lower return to the growth of gross earnings, and lower work incentives for second earners.

As we mentioned above one of the implications of in-work support is the fact that the return to work as gross earnings rise is lower than in the absence of such support. In-work support is means-tested and thus withdrawn as income rises. Because of this withdrawal the difference in disposable income in response to growing gross earnings (as a result of higher wages or more hours of work) for the recipients of in-work support is lower than for those who do not receive it. This can be demonstrated using family profiles 3 and 7, by looking at how full-time RRs change as we consider different levels of gross earnings (Table 4).

Focusing on FP3 – as earnings rise from 10th to 25th to 50th percentile in the UK the full-time RRs change from 0.570 to 0.547 to 0.500, a change respectively by 2.3, and 4.7 percentage points. In Germany the RRs change from 0.780, to 0.702, to 0.569, i.e. by 7.8 and 13.3 percentage points. The difference in the RRs for FP7 in the case of the UK is 6.5 and 11.7, while in Germany it is 10.9 and 15.1. These effects are consequences of the generous in-work support.19

The negative effect of in-work support on the financial incentives of second earners can be seen in the comparison of incentives in the UK for couples with and without children (i.e. by comparing FP10 with FP12 and FP11 with FP13 for both part-time and full-time work of the second earner). While the differences in Germany are relatively low, those in the UK are much higher. For example at full-time 25th percentile earnings the difference in RRs between FP12 and FP10 in Germany is 3.6 percentage points, and in the UK it is 18.6 percentage points. The reason for such differences between the two countries is the fact that in the UK families with children (i.e. FP12 and FP13) are eligible for relatively high values of in-work support in the case where the second earner does not work. This makes employment of the second earner much less financially attractive, since as the second earner enters employment – and family earnings rise as a result – the WTC is withdrawn. Such negative effects on financial attractiveness of work resulting from the British style in work support have often been discussed in the labour market literature.20 In a recent paper Haan and Myck (2007a) showed that while introducing a British-style in-work support in Germany would have strong positive effects on employment of single people and of first earners in couples, it would have very high negative effects on employment of second earners.

7. Conclusion

In this paper we have presented a comprehensive comparison of work incentives between the UK, Germany and Poland using a set of stylised families. Labour market incentives resulting from the combination of gross wages and the rules of respective tax and benefit systems have been analysed by looking at the detailed components of disposable incomes and the shapes of the budget constraints as well as by comparing replacement ratios computed at part and full-time hours of work. For each of the 13 family profiles analysed in this paper we have computed disposable incomes at different work intensity levels, taking their gross wages to correspond to the 10th, 25th and 50th percentile of the gross wage distribution.

The analysis provided in this paper gives a summary of labour market incentives generated by the three tax and benefit systems and could constitute a background for considering potential improvements to the design of taxes and benefits in either of the countries from the point of view of incentives to take-up employment. At the same time, however, it provides a simplified picture of the incentives actually faced by individuals. This applies especially strongly to the Polish case for two reasons.

The first of these is a result of the eligibility criteria for Social Assistance benefits. In our analysis for all countries we have assumed that – conditional on passing the income means-test – the stylised families we examined were eligible for Social Assistance. In reality, this will not always be the case, since in all three countries the families have to pass an additional wealth test. While in the UK and Germany this relates to the level of assets, in Poland it is conducted without specific

19 Though here part of the difference may also be due to the joint taxation of couples in Germany.
20 See for example the classical paper by van Soest (1993), or Blundell et al. (2000) and Myck, Reed (2006) on the British reforms.
reference to assets in the form of an informal assessment by a representative of the local Social Assistance Centre, and according to a recent analysis implies a very restrictive approach to the wealth-related eligibility criteria. As Haan and Myck (2007b) demonstrated using replacement ratios computed for representative samples of the German and Polish populations (respectively using the GSOEP-2005 and BBGD-2005 data) the restrictiveness of the wealth criteria in Poland implies very low RR for a much larger number of families compared to Germany, and thus suggests very strong work incentives in the Polish system.

The second aspect which could not be addressed in this paper, and which is also important for Poland is within-household sharing of resources among several families. While multi-family households are rather rare in Germany and in the UK, in Poland about 27% of households include more than one family (defined as a single adult or a couple with or without dependent children). The likely sharing of resources within households implies that although we may calculate very low incomes in out-of-work scenarios (assuming a single-family household) the family may in fact be able to fall back on some income of other families it shares the household with. In consequence, the replacement ratio for such a family would be higher, particularly in the case when income earned in the in-work scenario were also to be shared with other families in the household.

Another thing that cannot be accounted for in such a simple analysis is the fact that the different systems have varying administrative procedures. This applies, for example, to the income considered for specific benefits, and the period for which the benefits are granted. All this will also have an effect on labour market incentives, through the dynamic aspect of the system and the uncertainty the systems introduce as far as eligibility is concerned. And yet, despite these arguments which call for some caution concerning the interpretation of our results, there are several important conclusions which follow from our analysis. In the paragraphs below we focus on the most important implications for Poland.

The first of those is the relatively liberal eligibility rules concerning the Housing Benefit in Poland, which imply that families at relatively high levels of incomes may fulfil the criteria to receive this support. The payments of HB seem to extend far beyond the relative income levels when we compare them with Germany or the UK (see e.g. Figures 7 or 12). Secondly, the levels of the legislated minimum incomes – especially for couples – seem to be relatively high, even in comparison with Germany. Even if it is true that families in most cases do not receive the full legislated amount, it is still a fact that officially they may claim some Social Assistance even at relatively high levels of employment income (see Figure 8).

An important difference between Poland and both the UK and Germany is that the receipt of Housing Benefit limits the eligibility for Social Assistance. This means that those with high housing cost in Poland would have lower after-housing-costs disposable incomes (i.e. incomes after the payment of housing costs) – even if they receive the Housing Benefit to cover these costs (compare Figures 7E and 8E).

Two other important points to stress are: (i) the lack of universal child-related support in Poland, and the low (also in relative terms) levels of the basic means-tested child-related benefits (Zasiłek Rodzinny), and (ii) the low incentives to work for second earners which result partly from the joint system of taxation which still operates in Germany and Poland.

Finally, the in-work support reforms in the UK show that such an instrument as the Working Tax Credit can prove effective in encouraging employment while at the same time reducing poverty. Although such instruments ought to be implemented “with caution” (see Haan, Myck 2007a) they can be designed in such a way as to improve financial attractiveness of work.

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21 According to Myck (2007) only about 5% of all households would pass the wealth-test criterion in 2005.
References

Appendix. Figures

Figure 1. Budget constraints for stylised households: Family 1 - Single female without children, 2005

1A - United Kingdom, 25th perc. wage
1B - United Kingdom, 10th, 25th and 50th perc. wage
1C - Germany, 25th perc. wage
1D - Germany, 10th, 25th and 50th perc. wage
1E - Poland, 25th perc. wage
1F - Poland, 10th, 25th and 50th perc. wage

Note: All values in local currencies in 2005 prices. Polish budget constraints drafted assuming that only centrally guaranteed Temporary SA amounts are paid out. For details concerning assumed wages, maintenance, housing costs, etc. see Table 2.

Source: Authors’ calculations.
Figure 2. Budget constraints for stylised households: Family 2 - Single female with one child, 2005

2A - United Kingdom, 25th perc. wage

2B - United Kingdom, 10th, 25th and 50th perc. wage

2C - Germany, 25th perc. wage

2D - Germany, 10th, 25th and 50th perc. wage

2E - Poland, 25th perc. wage

2F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors’ calculations.
Figure 3. Budget constraints for stylised households: Family 3 - Single female with one child, 2005

3A - United Kingdom, 25th perc. wage

3B - United Kingdom, 10th, 25th and 50th perc. wage

3C - Germany, 25th perc. wage

3D - Germany, 10th, 25th and 50th perc. wage

3E - Poland, 25th perc. wage

3F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors’ calculations.
Figure 4. Budget constraints for stylised households: Family 4 - Single female with one child, 2005

4A - United Kingdom, 25th perc. wage

4B - United Kingdom, 10th, 25th and 50th perc. wage

4C - Germany, 25th perc. wage

4D - Germany, 10th, 25th and 50th perc. wage

4E - Poland, 25th perc. wage

4F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors' calculations.
Figure 5. Budget constraints for stylised households: Family 5 - Single female with two children, 2005

5A - United Kingdom, 25th perc. wage
5B - United Kingdom, 10th, 25th and 50th perc. wage

5C - Germany, 25th perc. wage
5D - Germany, 10th, 25th and 50th perc. wage

5E - Poland, 25th perc. wage
5F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors’ calculations.
Figure 6. Budget constraints for stylised households: Family 6 - One earner couple without children, 2005

6A - United Kingdom, 25th perc. wage

6B - United Kingdom, 10th, 25th and 50th perc. wage

6C - Germany, 25th perc. wage

6D - Germany, 10th, 25th and 50th perc. wage

6E - Poland, 25th perc. wage

6F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.

Source: Authors’ calculations.
Figure 7. Budget constraints for stylised households: Family 7 - One earner couple with one child, 2005

7A - United Kingdom, 25th perc. wage

7B - United Kingdom, 10th, 25th and 50th perc. wage

7C - Germany, 25th perc. wage

7D - Germany, 10th, 25th and 50th

7E - Poland, 25th perc. wage

7F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors’ calculations.
Figure 8. Budget constraints for stylised households: Family 8 - One earner couples with one child, 2005

8A - United Kingdom, 25th perc. wage

8B - United Kingdom, 10th, 25th and 50th perc. wage

8C - Germany, 25th perc. wage

8D - Germany, 10th, 25th and 50th perc. wage

8E - Poland, 25th perc. wage

8F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors’ calculations.
Figure 9. Budget constraints for stylised households: Family 9 - One earner couple with two children, 2005

9A - United Kingdom, 25th perc. wage

9B - United Kingdom, 10th, 25th and 50th perc. wage

9C - Germany, 25th perc. wage

9D - Germany, 10th, 25th and 50th perc. wage

9E - Poland, 25th perc. wage

9F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors’ calculations.
Figure 10. Budget constraints for stylised households: Family 10 - Two earner couple without children, 2005

10A - United Kingdom, 25th perc. wage

10B - United Kingdom, 10th, 25th and 50th perc. wage.

10C - Germany, 25th perc. wage

10D - Germany, 10th, 25th and 50th perc. wage

10E - Poland, 25th perc. wage

10F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.

Source: Authors’ calculations.
Figure 11. Budget constraints for stylised households: Family 11 - Two earner couple without children, 2005

11A - United Kingdom, 25th perc. wage

11B - United Kingdom, 10th, 25th and 50th perc.

11C - Germany, 25th perc. wage

11D - Germany, 10th, 25th and 50th perc. wage

11E - Poland, 25th perc. wage

11F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.

Source: Authors’ calculations.
Figure 12. Budget constraints for stylised households: Family 12 - Two earner couple with two children, 2005

12A - United Kingdom, 25th perc. wage

12B - United Kingdom, 10th, 25th and 50th perc. wage

12C - Germany, 25th perc. wage

12D - Germany, 10th, 25th and 50th perc. wage

12E - Poland, 25th perc. wage

12F - Poland, 10th, 25th and 50th perc. wage

Note: See notes for Figure 1.
Source: Authors’ calculations.
Figure 13. Budget constraints for stylised households: Family 13 - Two earner couple with two children, 2005

13A - United Kingdom, 25th perc. wage

13B - United Kingdom, 10th, 25th and 50th perc. wage.

13C - Germany, 25th perc. wage

13D - Germany, 10th, 25th and 50th perc. wage.

13E - Poland, 25th perc. wage

13F - Poland, 10th, 25th and 50th perc. wage.

Note: See notes for Figure 1.

Source: Authors' calculations.