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Apply with Caution:
Introducing UK-Style In-work Support in Germany

Berlin, February 2006

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IMPRESSUM

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Apply with Caution: Introducing UK-Style In-work Support in Germany[1]

Berlin, Februar 2006

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Table of Content

Abstract

Estimates of labour supply effects of recent UK reforms in the area of direct taxes and benefits show that policy can have significant influence on the level of employment. We confirm this in a simulation of in-work support system introduced into the German tax and benefit system. Our simulation results suggest that introducing in-work Tax Credits in Germany would increase employment of single individuals by over 100,000 but it would result in a reduction of labour supply among individuals living in couples by about 70,000. We find that Tax Credits would result in significant reductions of labour supply both among women and men in two earner couples. The result found for men is especially important as it is markedly different from all results found for the UK, where the overall response among men has always been found positive. Our estimation results call for a high degree of caution as far as "importing" UK-style Tax Credits to Germany is concerned. In-work support based on family income would reinforce the existing work disincentives for secondary earners through joint income taxations, reducing the employment levels of both men and women living in couples.

Keywords: tax-benefit system, in-work benefits, microsimulation, household labour supply

JEL Classification: C25, C52, H31, J22

1 Introduction

This paper is a contribution confirming that financial incentives are of great importance for individual labour supply behaviour, and that careful changes in the design of the tax and benefit system may be an effective way towards increasing employment. We demonstrate this using a detailed comparison of employment statistics for Germany and Great Britain which reflects a high degree of heterogeneity in differences in employment rates between the two countries for different types of families. Since, regardless of individual family status, people in each country face similar labour market conditions (concerning labour demand and labour market regulations) these findings stress the importance which financial incentives play in determining the individual employment position. The role of financial incentives is also confirmed by the changes in employment status of certain family types in the UK (especially among lone parents and fathers of young children) following a series of reforms to the tax and benefit system during the years of the Labour Government.

We also demonstrate that, as far as generosity of the income support (social assistance) system is concerned, the "popular belief" that support at the lower end of the incomes distribution is significantly higher in Germany does not hold. We show this for a number of stylized households using two microsimulation models: TAXBEN for the UK, and STSM for Germany. What we find is in fact that it is often the case that the tax and benefit system is more generous in Germany than in the UK at *higher* levels of income but not at the *lowest* ones. This implies that if one were to use the UK as a "role model" for adjustments in the generosity of benefits in Germany, there is actually little room for manoeuvre at the lower end of the income distribution.

Finally, our analysis of budget constraints in Germany and the UK clearly reflects the two most important differences between the tax and benefit systems: the joint taxation of couples (Germany), and the in-work support (UK). The move from joint to individual taxation in the UK was completed in 1999 with the abolition of joint taxation and its replacement with a child-related tax credit in April 2000. In Germany couples can still file a joint tax claim. In a recent analysis, Steiner and Wrohlich (2004) show that the employment rate of secondary earners in Germany would markedly increase when moving from joint taxation to individual taxation.

The main part of our analysis focuses on the second difference between the tax and benefit systems in the two countries, namely in-work support. This fiscal instrument, which aims at subsidising low pay employment, has been operational in several countries (e.g. US, Canada and the UK) and there have been suggestions that in-work support could be used to make employment more attractive in Germany as well. We use a discrete choice labour supply model to estimate the labour market implications of introducing UK-style in-work support in Germany. Our model follows the analysis of Blundell et al. (2000) who estimate the labour supply effects of the WFTC in the UK. In a similar study for France, Germany and Finland, Bargain and Orsini (2005) simulate the effects of in-work credits on labour supply of women. We extend their analysis by allowing both men and women to respond to changes in financial incentives. This turns out to be of decisive importance as far as policy suggestions are concerned.

Our estimates show that because of important income effects on secondary earners the policies would have high negative implications for employment of individuals in couples – both men and women. These negative effects nearly outweigh the positive effects on lone parents; the total employment effect of introducing UK-style in-work support in Germany is positive but modest given the cost of the reform (in the range of about 40,000 individuals). This result together with some more detailed analysis of differences in employment rates between Britain and Germany leads us to conclude that changing the structure of financial incentives in Germany could certainly be used to encourage employment. However, given the strong negative employment response among couples, we conclude that in-work support based on total family incomes would not be an effective way of encouraging employment in Germany. A solution could come in the form of an individual tax credit integrated with some form of childcare subsidy. Simply "importing" the in-work support system from the UK will not "do the trick".

This paper is structured as follows: in Section 2 we present a comparison of employment statistics between Great Britain and Germany. This is followed by a comparison of budget constraints for several stylised family types in Section 3. In Section 4 we describe our approach to modelling labour supply in Germany and present details of how we model UK-style New Tax Credits in the German tax and benefit system. Results of simulating the introduction of NTCs in Germany are presented in Section 5. In section 6 we return to the comparison of employment statistics and budget constraints to identify welfare reforms which may be better suited for Germany than a UK-style in-work support system.

2 Britain and Germany compared – employment rates

International comparisons of economic indicators and statistics are complicated by, among other things, differences in institutional frameworks. Britain and Germany, for example, have very different education and pension systems and both of these strongly influence the resulting labour market statistics. Although we limit our analysis in this paper to individuals aged between 25 and 59, important differences in labour market outcomes due to institutional design exist between the two countries and these are presented below. Subsequently we focus on detailed comparisons of *employment rates,* defined as the share of dependently employed and self employed people over the whole population in this age group.[2] The institutional difference will obviously carry through to affect comparisons of employment rates. Yet, we believe that limiting the scope of analysis by further narrowing of the age criteria would risk making the analysis uninteresting from the policy point of view. On the other hand the population groups where we see highest differences in employment rates are unlikely to be either students or retired people.

Labour market status

Our analysis is based on the Family Resources Survey (FRS) for Great Britain and the Socio-Economic Panel (GSOEP) for Germany. The FRS is an annual cross sectional survey which contains information on about 25,000 households, representing the total of 24.5 million British households. The GSOEP is a representative sample of private households living in Germany and includes detailed information about the socio-economic situation of over 11,000 households (representing about 38.8 million households living in Germany). Both surveys contain detailed information on household incomes, hours worked and household structure.[3]

We compare data for the two countries for 2002/03.[4] Table 1 contains the basic breakdown by labour market status for Germany and Britain as a starting point for our analysis.

[2] The comparison of labour markets focuses on employment rates rather than on unemployment or labour force participation rates which are the two most obvious other measures, to limit the definitional and institutional differences existing between Britain and Germany concerning the unemployed.

[3] A description of the SOEP can be downloaded from www.diw.de/soep; see also Haisken-DeNew and Frick (2003).

[4] For Germany, we use the data colleted in 2003 as they contain the information about the fiscal year 2002. The FRS data is collected to overlap with the government budget calendar, i.e. from April to March. When we refer to a dataset as a 2002/03 data set this means that we consider the dataset for April 2002 – March 2003.

Table 1. Labour market status. UK and Germany, 2002/03.

	Breakdown in %			
	UK		Germany	
	men	women	men	women
Employees	70.09	64.7	68.46	61.54
Self-employed	12.74	5.07	10.86	5.20
Students	0.34	0.36	6.90	5.60
Retired	0.21	0.55	2.88	2.27
Unoccupied	16.63	29.32	10.90	25.39

Source: FRS 2002/03 and GSOEP 2003.

The overall employment rate in Britain (counting both the employees and the self-employed) is 3.5 percentage points higher for men and 3 percentage points higher for women in Britain than in Germany. At the same time however the proportion of students and early-retirees is much higher in Germany and this leads to lower proportion of individuals classified as "unoccupied".[5] Bearing in mind the differences in student and retiree status between the two countries in our chosen age group below we present employment rates separately for lone people and individuals living in couples (married and cohabiting).

Employment rates

The employment rates are presented for different family types, distinguished by the presence of children younger than 17 years. The picture that emerges from tables 2-4 is (unsurprisingly) that the patterns of employment are strongly related to family structure. What is striking though, is that there are important differences in employment conditional on these characteristics between the UK and Germany.

The overall employment rate in Germany for single people is slightly higher than in the UK (see Table 2), and this difference results from much higher employment rates of single women in Germany (4.3 percentage point difference).[6] Disaggregating employment statistics for single adults depending on whether they have children (below 17 years old) or not also gives higher employment rates for Germany, this time by over 10 percentage points. This could seem at odds with the existing in-work support system in the UK which provids incentives for labour market employment of lone parents. However, as table A1 in the Appendix

[5] These levels are consistent with OECD statistics on employment for the two countries (see OECD, 2005).

[6] This is mainly due to the higher labour market participation of women in east Germany. As documented in previous literature, due to the different history the labour market behaviour of women between east and west Germany is still quite different, see e.g. (Steiner and Haan, 2005).

shows, the employment rate for lone parents in the UK before the Labour Government's package of reforms was introduced was as low as 38.7%. This implies a remarkable increase in employment of this group of people of about 14 percentage points in the relatively short period of six years.

Table 2. Employment rates of single individuals - UK and Germany, 2002/03

	Employment rate in %	
	UK	**Germany**
All Singles	67.91	68.17
Male Singles	71.69	68.20
Female Singles	63.84	68.14
Singles without children <17	71.48	69.11
Singles with children <17	52.43	62.74

Source: FRS 2002/03 and GSOEP 2003.

Employment rates for people in couples (Table 3) are higher in the UK for both men and women, and this is the case for couples with and without children. An interesting similarity between the two countries is that the difference in employment rates between those with and without children is the same for both countries: about 5-6% for men and 11-12% for women.

Table 3. Employment rates of individuals in couples - UK and Germany, 2002/03

	Employment rate in %			
	UK		**Germany**	
	men	women	men	women
All couples	87.90	72.36	83.32	66.60
Couples without children <17	85.35	77.99	79.73	72.83
Couples with children <17	90.32	67.03	86.83	60.51

Source: FRS 2002/03 and GSOEP 2003.

In Table 4 we break down these employment rates at the level of the couples, by dividing couples into two-earner, one-earner (where either the woman or the man works) and no-earner couples. This sheds more light on the differences between the two countries. As we can see the proportion of two-earner couples is lower in Germany for all couples, regardless of whether they have children or not. The overall proportion of no-earner couples is very similar at about 7%. It is interesting to note that the proportion of couples where only the woman works is almost twice as high in Germany as it is in the UK.

The breakdown of employment rates by family type shows that the differences between the two labour markets are far from uniform. There are important groups in the two populations in which employment rates are either almost identical or are even higher in Germany than in Britain. This raises important questions related to labour market policy response in both countries. We think that it would be difficult to explain these differences in terms of labour demand factors. These could either be considered to be the same for all individuals regardless of their marital and family status, or at least to be the same for specific types of families. One could argue, for example, that employers would be less willing to employ individuals with parental obligations (for example because of the cost of child-related leave). This should however apply equally strongly to lone parents and parents living in couples. In this case the employment rates we presented show that, while lone parents are more likely to be employed in Germany (employment rate of 62.7% versus 52.4%), the rates for parents in couples are higher in Britain for men (90.3% versus 86.8%) and especially for women (67.0% versus 60.5%).

The above implies that differences in tax and social security burdens between Germany and Britain and the institutional arrangements which affect demand for labour are insufficient to explain the differences in employment patterns between the two countries. Explanation of differences between employment rates between different family types must therefore largely relate to the supply side of the labour market, and thus be a reflection of on the one hand people's preferences for leisure and on the other of differences in financial incentives to work. Here the common approach is to argue that the high generosity of the German benefit system is to blame for its lower employment rates. Below we look at some details of financial incentives which different types of families face in a range of employment scenarios.

Table 4. Employment rates of individuals in couples. UK and Germany, 2002/03.

Proportion by employment status:	All couples	No child<17 in family	Child <17 in family
UK:			
Two-earner	67.17	71.08	63.46
Single earner – man employed	20.73	14.27	26.86
Single earner – woman employed	5.20	6.91	3.57
No-earner	6.90	7.74	6.11
Germany:			
Two-earner	56.80	59.75	53.91
Single earner – man employed	26.52	19.99	32.91
Single earner – woman employed	9.81	13.08	6.60
No-earner	6.88	7.19	6.57

Source: FRS 2002/03 and GSOEP 2003.

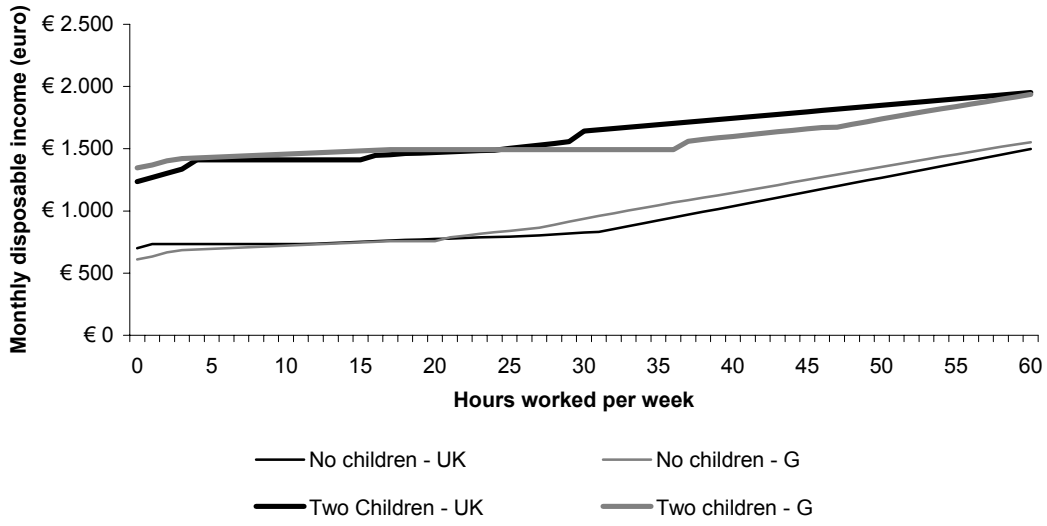
3 Britain and Germany compared – incentives to work

In this section we look at examples of budget constraints which different types of families face in Germany and the UK. We focus on the tax and benefit system of the year 2002/03 as the above presented statistics represent the population during that year. The analysis sheds some doubt on the popular belief that the levels of social assistance in Germany are significantly higher. We show that disposable incomes at various levels of employment intensity are very similar between the two countries.[7] The only noticeable differences in the "shape" of the budget constraint are for second earners in couples and at points of highest generosity of in-work support in the UK. We return to this issue at the end of this section. Note, this comparison needs to be interpreted carefully as we focus only on the tax and benefit system but leave out a comparison of important institutions, such as labour market institutions, the educational system, the generosity and quality of public health care and other types of public expenditure. For better comparison, we assume in all examples for Germany that individuals are not eligible for the insurance based unemployment benefit (Arbeitslosengeld) as this is not a permanent transfer. Instead, households receive means tested social benefits which are the equivalent to the UK Income Support.

[7] Monetary values used for comparative purposes are expressed in euros using the exchange rate of *€/£ = 0.6821*. To express weekly values of net incomes and benefits (as is standard practice in the UK) in monthly terms (as is standard in Germany) we multiply weekly values by a factor of 4.35 – the average number of weeks in a month. (=365.25/12/7).

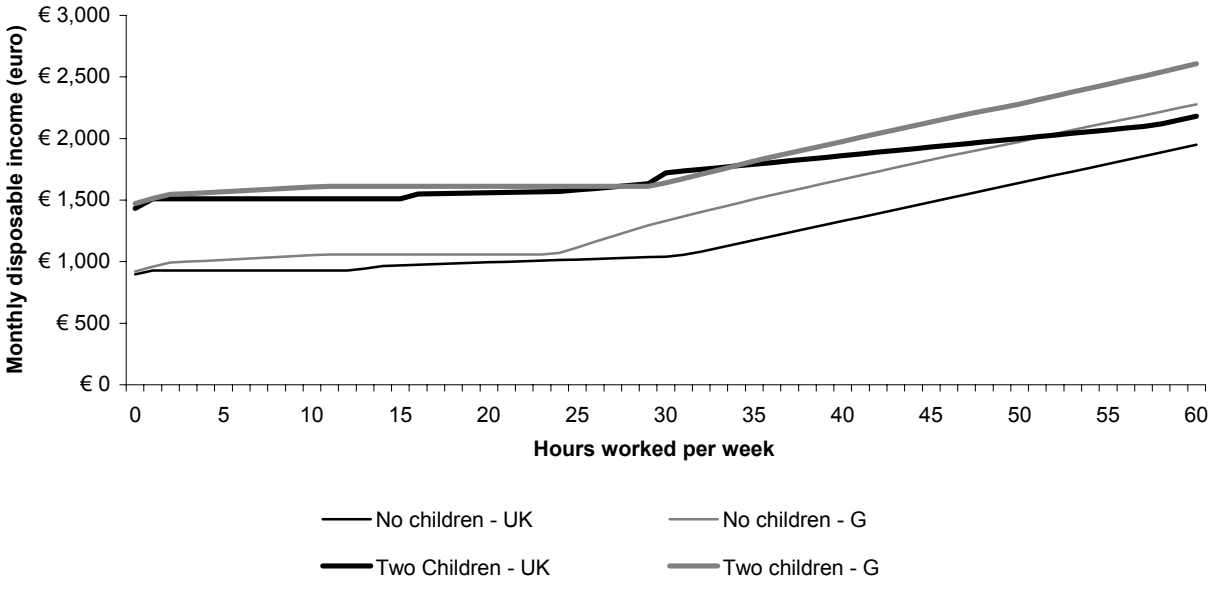
Figure 1 presents comparisons of budget constraints for two types of families: a single woman without children, and a single woman with two children. The budget lines are drawn under the assumption that the woman is earning 25th percentile gross wage for women (specific for each country: €7.76 in the UK and €9.92 in Germany). Similar budget lines are drafted for one-earner couples (Figure 2) and two earner couples (Figure 3). Here we assume that the man is working at a country specific 25th percentile gross wage for men (€10.47 in the UK and €12.99 in Germany) and once more we present the budget lines for families without children and with two children.

Figure 1. Budget constraints in 2002 – single woman (renting) with and without children



Notes: For each country we consider a single woman working at 25th percentile hourly wage, renting at the cost of median rent. 25th percentile wage for women in Britain is €7.76 and in Germany €9.92.

Figure 2. Budget constraints in 2002 – one-earner couple (renting) with and without children



Notes: For each country we consider a one earner couple where the man is working at the 25th percentile hourly wage, renting at the cost of median rent. 25th percentile wage for men in Britain is €10.47 and for Germany €12.99.

The two figures show that at the lowest levels of earnings, i.e. in scenarios where the families qualify for the basic means tested support, disposable incomes of families in Germany and the UK, conditional on family type is almost identical. Differences become apparent only at hours levels beyond about 20 per week.

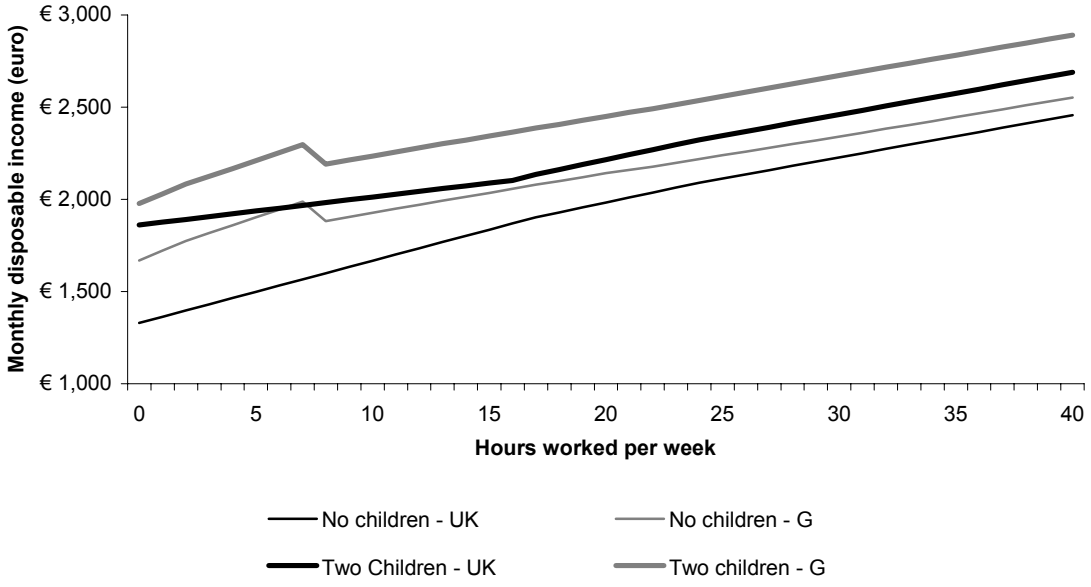
For single people without children the difference in disposable income beyond 20 hours of work results primarily because of the higher nominal hourly wage in Germany. Given the differences in the tax burden between the two countries this difference falls as income rises. It is interesting to note that in the UK incomes of lone parents with two children are higher in the range between 26 and 60 working hours.[8] This is the result of generous in-work support which these families are eligible for in the form of WFTC. The difference is highest (€212 per month) at the level of 36 hours of work per week.

Beyond the level of about 25 hours of work a one-earner couple without children in Germany is better off than in the UK in our example. A couple with two children would be better off in Germany at hours level beyond 35, and the difference in disposable income is especially high when the earner in the couple works beyond 55 hours per week. From about this point onwards the UK example family no longer receives in-work support. At hours above 50 the example UK family with children has very similar disposable incomes to the German childless couple.

There are significant differences for one-earner families without children between Germany and the UK. At 26 hours of work the UK one-earner couple receives €342 less per month than the couple in Germany and the difference remains at above €300 per month for higher levels of hours. The factor responsible for it is only partly the difference in the underlying nominal gross wages (we do not see a divergence in disposable income for higher levels of hours worked). The most important determinant of these differences is income splitting for individuals in married couples. As we shall see below, this also has important consequences for financial incentives of second earners in couples. The higher disposable incomes of families with children in Germany relate to income splitting and the receipt of the universal Kindergeld (which in 2002 was €154 for every child per month).

[8] The same applies to lone parent families with one child (not shown on Figure 2) in the hours range between 16 and 54.

Figure 3. Budget constraints in 2002 – second earner in couple with and without children



Notes: For each country we consider a two earner couple where the man is working 40 hours at the 25th percentile male hourly wage, and present changes in family income as a result of the woman working at different hours points (the assumed wage for the woman is 25th percentile female hourly wage), the couple is renting at the cost of median rent. 25th percentile wage for men in Britain is €10.47 and for Germany €12.99, while for women respectively €7.76 and €9.92.

For two earner couples we find strong differences between the two countries which are mainly due to the income splitting for couples and the exemption of the social security contribution and income taxation up to a certain threshold of individual gross earnings in Germany. This threshold was €325 per month in 2002. After this threshold all earnings are due to social security contributions and to income taxation if taxable income exceeds the basic tax allowance. At this point, marginal tax rates for the secondary earner are relatively high because of the income splitting. Therefore, we observe the kink in the budget line of the secondary earner for Germany. This provides strong disincentives for the secondary earner to take up work beyond €325. In comparison to comparable households in the UK, households in Germany have a higher disposable income. This difference decreases with the number of working hours of the secondary earner as the advantage of the income splitting vanishes. The advantage of income splitting is also dependent on the wage difference of both spouses (Steiner and Wrohlich, 2004).

4 "Importing" the New Tax Credits to Germany

New Tax Credits

We saw in Section 3 that one of the main differences in terms of the tax and benefit systems between the UK and Germany is the system of in-work support. This section begins with a brief outline of the current (2005) system of in-work support in the UK. This is followed by a discussion of recent tax and benefit changes in Germany and of how we integrate the elements of the UK system with the current German one. The section ends with some (non-behavioural) estimates of the costs of the reform and its distributional consequences.

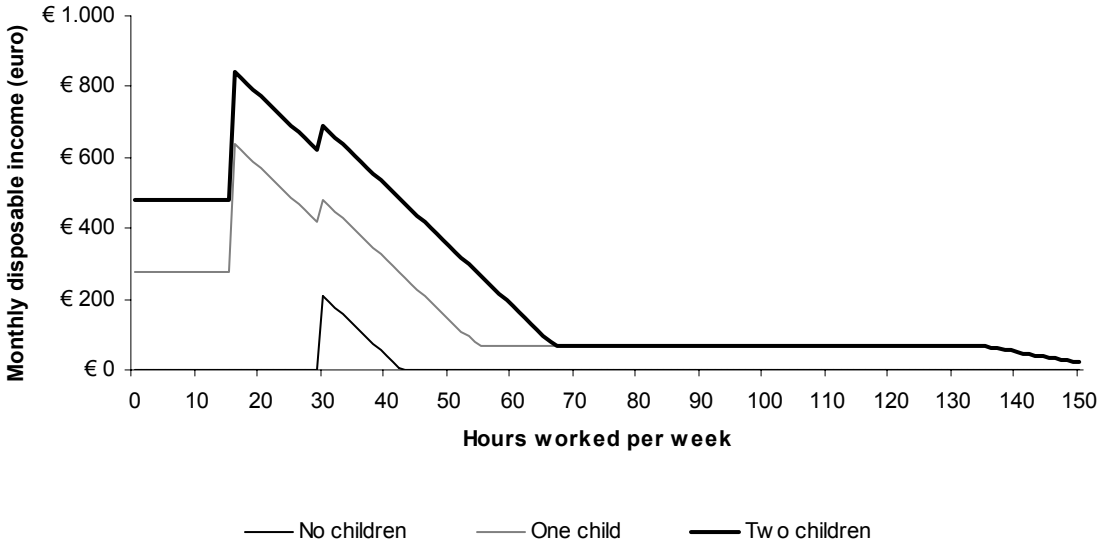
In April 2003 the Labour Government implemented major changes to the structure of the tax and benefit system in the UK. [9] The reform (commonly known as New Tax Credits – NTCs - reform) consolidated several elements of support for families with children into the Child Tax Credit (CTC)[10], an instrument which specifically relates to having children and is independent of work status. The CTC is made of a family premium (of about €60 per month) and credits for every child in the family. The child credits begin to be withdrawn when gross annual family income exceeds €20,400, while the withdrawal rate of the family premium starts when pre tax income exceeds €73,300. To preserve financial incentives to work for low income families the government introduced the Working Tax Credit (WTC) which retains the condition for the minimum number of hours worked characteristic of the Working Families' Tax Credit from the pre-reform system. To receive the WTC one adult in families with children has to work at least 16 hours per week, and there is a full time "premium" for those working more than 30 hours per week. The WTC is also available for families without children, for which the minimum hours condition is 30 hours per week and it begins to be withdrawn once annual gross family income exceeds €7,650. The generosity of the NTC support system is presented in Figure 4 for a one-earner couple with one child, two children and without children.[11]

[9] For a detailed discussion of the 2003 reforms see, Brewer et al. (2005). The NTCs also include a generous Childcare Credit, additional premiums for families with newborn babies and for working disabled people. These are not modeled in our paper.

[10] Specifically: the family and child premiums in Income Support, the child credits from the Working Families' Tax Credit and the Children's Tax Credit (which was part of the PAYE income tax).

[11] The NTCs also include a generous Childcare Credit, additional premiums for families with newborn babies and for working disabled people. These are not modeled in our paper.

Figure 4. Generosity of the New Tax Credits in April 2005



Notes: Assumed hourly wage is €10.47 (25th percentile wage for men in Britain).

Recent Reforms in Germany

Since 2002/03, the year for which we show the employment statistics in section 2, Germany has also seen important changes in the design of the tax and benefit system. Both, income taxation and the benefit system have been reformed aiming to improve incentives on the labour market. We think it is important to account for these changes, and therefore we "import" the UK system of in-work support taking the 2005 system as the baseline for the reform.

On the taxation side between the year 2000 and 2005 the German government introduced the most ambitious income tax reform in the German post war history. The main aim of the reform which was implemented in three steps (2001, 2004 and 2005) was a reduction of the burden and distortions of taxation for both companies and private households. By the beginning of 2005, the top marginal rate of the personal income tax has been reduced to 42%, compared to 51% in 2000. In the same period, the lowest marginal tax rate was reduced from 22.9% to 15%, and the basic tax allowance has been increased from €6,902 to €7,664. The tax schedule between 2002 and 2005 was only affected by the second and the third step of the reform. The tax relief due to the two last steps amounts to about €20 billion. Haan and Steiner (2005) provide a detailed description of the reform and simulate the labour supply and em-

ployment effects of the reform. They show that the reform significantly increased labour supply incentives in particular for households with relatively high income.

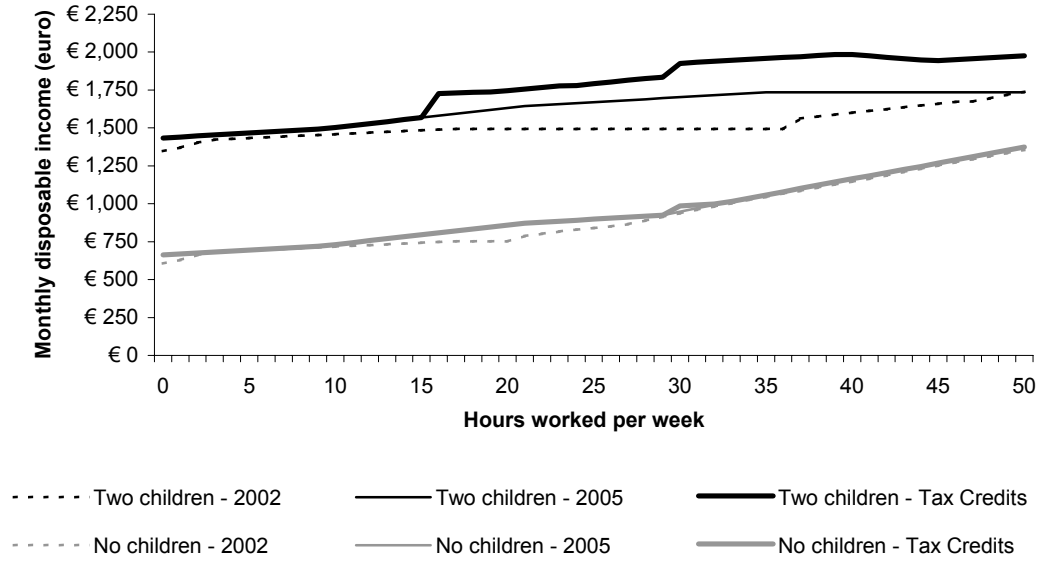
On the transfer side the "Hartz Reform", implemented between 2003 and 2005, affected work incentives in particular those of low income households. For our analysis mainly three policies of the Hartz legislation are of importance: the Minijob reform, the reform of income support and the introduction of a child supplement. The Minijob reform extended the threshold for subsidies of the social security contributions and the exemption from income taxation to individual gross earnings up to €400 per month. Further, high marginal tax rates on earnings above this threshold were decreased, by introducing a modified subsidy up to €800per months. This reform is described in detail in Steiner and Wrohlich (2005) and its effects on work incentives have been estimated by e.g. Steiner and Wrohlich (2005) or Bargain et al. (2005). In the course of the Hartz reform the previous means tested social assistance has been combined with unemployment assistance. Relative to the year 2002, the income support out of work in 2005 is slightly more generous and the withdrawal rate has changed; for more detail, see Steiner (2005). The child supplement is similar to an in-work credit as only working families receive this benefit. However, in comparison with in-work credits implemented in other countries, the child supplement is not relatively small transfer and only affects a small number of households. Due to the withdrawal design of this instrument in combination with the existing income support, the child supplement hardly affects work incentives for families with children.

Introducing UK in-work support to the German system

The system as of 2005 is used as a baseline for the exercise of "importing" the UK New Tax Credits system (henceforth simply "Tax Credits"). The system is implemented maintaining the rules which concern the interaction of the Tax Credits with other means-tested benefits. Specifically, we assume that income from Tax Credits is included in the means test for income support which is withdrawn at the rate of 100%. As far as generosity of the Tax Credits is concerned, we have decided to exclude the family premium element of the UK's CTC. This is done on the grounds that such extension of child-related support rather far up the income distribution in the system with already high level of universal support (for the first three children, €154 per child per month) would be very costly and therefore unlikely to be implemented. The resulting changes in the budget constraint are demonstrated on Figures 5 and 6, for single people and couples respectively. Figure 5 shows budget constraints for a single

person with and without children, working at the 25th percentile female hourly wage (€9.92). In Figure 6 we present budget lines for a couple household with one child. One set of lines shows the budget constraints under the assumption that only one partner is working at the median wage for men (€16.81), while the other set shows constraints for the second earner working at the 25th percentile female wage (€9.92), under the assumption that the first earner works full time at the median wage for men. For all example families we show budget constraints as they were in 2002, then the constraints of the baseline - 2005 - system, and finally the budget constraints which would result from introducing the Tax Credits in Germany.

Figure 5. Disposable incomes under three tax and benefit systems: single people



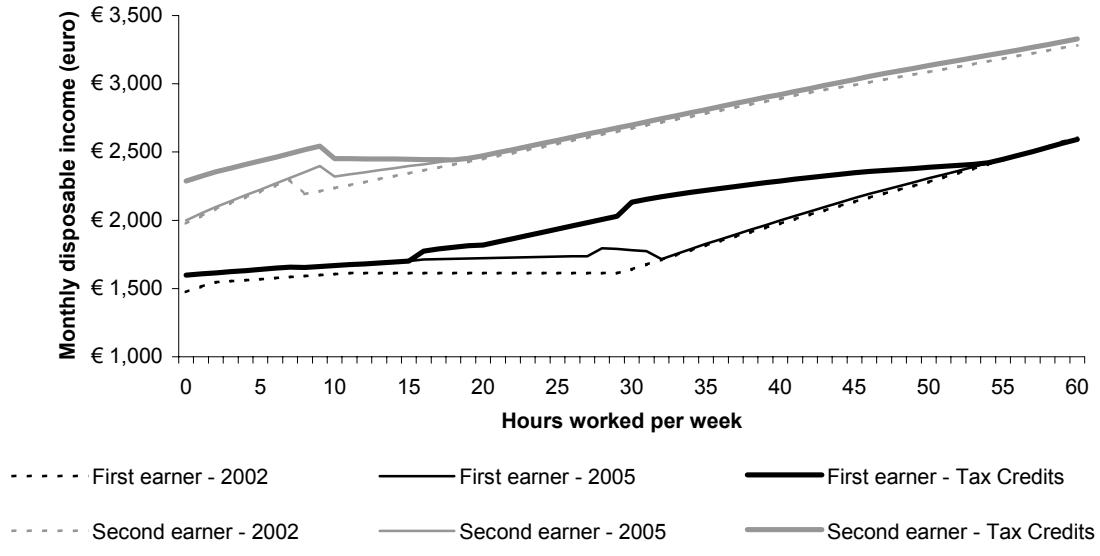
Notes: We consider a single woman working at 25th percentile hourly wage, renting at the cost of median rent. 25th percentile wage in Germany €9.92.

We show that single individuals without children would be only marginally affected by the introduction of Tax Credits – this is represented by a small increase in disposable income at 30 hours of work relative to the 2005 system. The same is true for childless couples who would not be affected at all if the earner receives the median male hourly wage (we therefore do not present budget constraints for childless couples in the figures). Tax Credits, however lead to substantial income increases for lone parents and couples with children. A lone parent with two children earning 25th percentile female hourly wage would see her income rise by €145.40 per month at 16 hours of work and by €250.50 at 39 hours of work. A one earner couple with two children, on the other hand, could see its income rise by as much as €456 per month (at 32 hours of work). An interesting point to note is that the combination of with-

drawal of subsidies of social security contributions and the Tax Credits implies that the difference in family disposable income resulting from the work of the second falls from €441.70 to €155.06 per month as a result of introducing the Tax Credits. As we shall see below this type of income effect would lead to important withdrawals from employment among two earner couples.

Disregarding behavioural effects of such a reform, the overall net cost of introducing Tax Credits in Germany is about €11 billion. The government would need to spend about €19 billion on the Tax Credits, but the cost of the means tested income benefits (ALG II) would fall by about €8 billion. The reforms would have a rather clear distributional effect – with families in the second and third decile gaining most (respectively €52.10 (4.0%) and €60.00 (3.7%) per month on average) and the gains falling for households higher up the income scale. Families in the first decile would gain on average only about €25.80 (3.4%) which is because first of all there are fewer families with children in the first decile, and secondly because many of the poorest families do not meet the hours condition to be eligible for Tax Credits.[12]

Figure 6. Disposable incomes under three tax and benefit systems: couples



Notes: For each country we consider a couple where the first earner is a man working at the 25th percentile male hourly wage, and the second earner is considered under the assumption that her partner works 40 hours per week (at 25th percentile hourly wage) – the assumed wage for the woman is 25th percentile female hourly wage, the couple is renting at the cost of median rent. 25th percentile wage for men is €10.47 and for women €9.92.

[12] We do not present full distributional and reform cost details here. These are available from the authors.

5 Tax Credits and labour supply

In order to evaluate the behavioural effects of introducing Tax Credits in Germany we estimate the labour supply responses of households. We follow the method of Blundell et al. (2000) by simulating the changes in working hours and labour market participation on the basis of a discrete choice labour supply model. The main advantage of the discrete choice approach compared to continuous specifications of labour supply derives from the possibility to model nonlinearities in budget functions.[13] Furthermore the modelling allows to asses the labour supply effects on the household level rather the individual level, by specifying a joint labour supply model for cohabiting and married couples. A detailed specification of the model can be found in the Appendix; for further information with descriptive statistics and a discussion of the main results, see Bargain et al. (2005). Note, we follow Blundell et al. (2000) and assume that households can freely choose their working hours and are not restricted by labour demand constraints. We estimate the model on a restricted sample of households where both spouses are aged between 25 and 59, not in education and not self employed.[14] The database is the GSOEP 2003, hence we estimate the preferences for work and disposable income for the fiscal year 2002.[15]

Based on the labour supply estimation we simulate the labour supply effects resulting from the introduction of the Tax Credits. Using the microsimulation model STSM that models the German tax and benefit system in detail (Steiner et al. 2005) we simulate the net household income for two scenarios at the defined discrete hours points: i) the fiscal system of the year 2005 that includes the implemented reforms between 2002 and 2005 described in section 4 and ii) a hypothetical scenario in which we introduce the Tax Credits into the system of 2005 as described in section 4. For each household we simulate the probabilities of choosing each point for the status quo scenario 2002 and the two simulated scenarios. The differences in the probabilities yield the labour supply responses induced by the respective reforms.

[13] We assume that working hours can be described by a distribution with 6 discrete points. We define on hours intervals (0, [0,12], [12,20], [20,34], [34,40], >40) according to the empirical distribution in the data (GSOEP 2003). The empirical mean of the distribution describes the discrete hours point. For couples we assume a joint labour supply model and specify 6x6 discrete points. For more details, see Bargain et al. (2005).

[14] We have estimated the effect of TCs on couples where one spouse is either self employed, in education or retired, or older than 59. We find that the effects for both men and women are negligible. Simulation results for these groups can be obtained from the authors.

[15] We cannot estimate preferences directly for the year 2005 as the data for the fiscal year 2005 is not yet available.

In order to disentangle the work incentives resulting from the introduction of the Tax Credits we calculate the difference of the employment effects induced by the two simulated scenarios.

Tables (5–8) present the labour supply effects by household types and region both regarding changes in employment and working hours.

Single Households

As discussed above the Tax Credits provide positive labour supply incentives for single households, in particular for lone parents as TCs are most generous for this group. We simulate that the overall employment rate of single women increases by more then 95,000 or about 2.9%. This effect is almost exclusively borne by lone mothers. Single women without children in the western part of Germany do hardly change their labour supply behaviour, the same group in the east reacts slightly more. This is due to the higher gains from the Tax Credits reform for east Germans as their average earnings are markedly lower than in the western part of the country. The same holds true for lone mothers. The relative change in participation in east Germany (at 15%) is more than twice as high as the change for west German lone mothers (6.5%). A very similar picture emerges turning to the changes in the weekly working hours.

For single men the effects of the Tax Credits are relatively modest, the main reason being that the number of lone fathers in Germany is very low. The overall participation effect amounts to about 10,000 which translates to a relative increase of 0.34%. Again, effects in east Germany are higher, both in relative and in absolute numbers. The impact on the working hours of single men is moderate, as well. Weekly working hours increase by about 0.30%.

Couple Households

The overall effect of the Tax Credits on the labour supply of men and women living in couples is negative. As discussed above this is because the Tax Credits is based on household rather than on individual earnings and for eligibility only one spouse needs to fulfill the working requirements. The total employment among women in couples decreases by more than 55,000 which amounts to a decrease of about 0.8%. Again the effect is mainly borne by women with children. The effect on couple households without children is basically zero. As for single women, the effect on the participation rate and the relative change in working hours for women in east Germany are higher. For men living in couples, we find smaller negative effects of the Tax Credits. Employment among men in couple households decreases by about 13,000 or 0.16%. The reduction in working hours is relatively high (-0,46%), as the share of men working full time or over time in the baseline scenario is high.

Table 5. Effect of Tax Credits on single individuals

	Change in participation		Change in number of hours (unconditional)	
	absolute:	**in %:**	**absolute (in 000s):**	**in %:**
Women:				
West				
- no children	400	0.019	28.6	0.041
- with children	59,400	6.474	1676.4	5.953
East				
- no children	1,000	0.356	63.2	0.588
- with children	34,500	15.002	1244.8	15.166
All	95,300	2.914	3013.0	2.583
Men:				
with children	2,400	1.728	92.1	1.634
without children	7,200	0.273	279.4	0.260
West	3,900	0.167	132.5	0.139
East	5,700	1.239	222.7	1.209
All	9,600	0.344	355.2	0.312

Notes: Simulation built by drawing 100 times from the distribution of the unobserved heterogeneity and allocating each observation to the alternative that yields maximum utility (e.g. see Blundell et al. 2002). Absolute change in participation rounded to nearest 100.

Table 6. Effect of Tax Credits on individuals in couples

	Change in participation		Change in number of hours (unconditional)	
	absolute:	**in %:**	**absolute (in 000s):**	**in %:**
Women				
West				
- no children	100	0.005	4.9	0.006
- with children	-43000	-1.330	-1033.3	-1.405
East				
- no children	0	-0.002	1.1	0.008
- with children	-12600	-1.499	-635.7	-2.169
Total – women	-55500	-0.813	-1663.0	-0.850
Men				
West				
- no children	-100	-0.004	-5.0	-0.005
- with children	-2000	-0.044	-956.7	-0.494
East				
- no children	-100	-0.016	-3.7	-0.019
- with children	-11300	-1.268	-656.9	-1.708
Total – men	-13400	-0.163	-1622.2	-0.460

Notes: Simulation built by drawing 100 times from the distribution of the unobserved heterogeneity and allocating each observation to the alternative that yields maximum utility (e.g. see Blundell et al. 2002). Absolute change in participation rounded to nearest 100.

Effect by employment status of the spouses

As shown in Table 4, in Germany the share of couple households where both spouses are working is relatively low in comparison to the UK. In contrast, the share of one earner households is relatively high. Our findings indicate that the introduction of the UK style Tax Credit further increases the differences between the two countries in this respect. In order to accurately simulate the impact of the Tax Credits by employment status of the spouses we have to compare the participation effect relative to the base scenario in 2002 since the employment status can be only observed in this year. The first column in Table 7 yields the observed number of household within each group for the year 2002, the second column the simulated effect for the fiscal year 2005, and the third column the simulated effects for the hypothetical system including the Tax Credits. In order to disentangle the effect of the Tax Credit we take the difference between the employment effect of the two simulated systems (column 4).

As a result of introducing the Tax Credits we observe an employment effect for couples where both spouses were not working in 2002. Relative to the fiscal system in the year 2005 this effect is particularly high for men (26,000) but is also non-negligible for women (8,500). As shown in Table 4, one earner couples where the man is working are far more common in Germany than couples where the women is the sole earner. This explains the stronger increase for men than for women.

This positive employment effect is clearly outweighed by the negative effect of the Tax Credits on the other groups. In particular the number of couples where both spouses used to work in the year 2002 markedly decreases. The effect of the Tax Credit implies that more than 50,000 women and nearly 30,000 men leave this group. The effect on one earner couples is relatively small. In comparison to the effects of the fiscal system in 2005, the impact of the Tax Credits slightly reduces employment within these groups, both for men and women.

These results imply that due to the Tax Credits the share of two earner couples in Germany would further decrease widening the gap between the UK and Germany. Further, the decomposition by employment status of the couples underlines the importance to estimate not only the labour supply effects of women but also of men. We show that the Tax Credits have a strong impact on male employment decision, positive or negative, dependent on their initial employment state.

Table 7. Effect of Tax Credits on couples conditional on combination of partners' employment.

	2002 system (in 000s)	2005 system (in 000s)	TCs (in 000s)	Effect of TCs (in 000s)
Women:				
- (0,0)	0.0	23.6	32.0	8.5
- (1,0)	0.0	82.6	76.3	-6.3
- (0,1)	478.3	473.8	469.9	-3.9
- (1,1)	6339.8	6314.1	6260.3	-53.8
Men:				
- (0,0)	0.0	27.0	53.1	26.1
- (1,0)	2093.9	2079.8	2072.0	-7.8
- (0,1)	0.0	35.3	33.5	-1.8
- (1,1)	6121.2	6097.4	6067.6	-29.9

Notes: Simulation built by drawing 100 times from the distribution of the unobserved heterogeneity and allocating each observation to the alternative that yields maximum utility (e.g. see Blundell et al. 2002).

Labour supply effects of in-work support in other studies

Bargain and Orsini (2005) simulate the labour supply effects of the British WFTC as it was implemented in 1999 for single women and women in couples for several countries, amongst others for Germany. In general, our results point in the same direction as their findings. Bargain and Orsini (2005) show that the in-work credit has a positive effect on the labour supply behaviour of single women and a negative effect on behaviour of women living in couples. However, they find that the negative effects of women in couples outweighs the positive effect of singles. This difference is mainly due to the different generosity of the simulated in-work credits. In comparison to the studies of Blundell at al. (2000) and Gregg et al. (1999) which focus on the effects of the WFTC reform 1999 in the UK, we find greater labour supply effects, which is not surprising since we model the introduction of the full system and not only increases in its generosity (as is the case in these two studies). The important difference between the results for UK and Germany are results for couples. Both UK studies (as well as subsequent estimates of the effect of the WFTC, e.g. Brewer et al., 2005, Blundell et al., 2005, Myck and Reed, 2005) find positive net effects on employment of men in couples. For Germany we find that over 13,000 men living in couples would leave employment. Moreover if we take the overall employment effect on individuals living in couples measured as a proportion of the positive effect on single individuals, we find that it is –19% in the case of

Blundell et. al (2000) and is positive (+14%) in the case of Gregg et al. (1999).[16] In the case of our estimation we find that the negative effect on couples is –66% of the effect on single people. This suggests a very different (relative) responsiveness among individuals in couples in Germany and calls for a lot of caution in applying means-tested policies based on total family income.

6 Can Tax Credits "do the trick"?

We saw in the above section that the introduction of Tax Credits in Germany would have an overall positive effect on employment but this effect would be small (in the range of 35,000) and there would be a negative effect on labour supply of individuals in couples in the range of 70,000. The principal reason behind the effect on couples is that the income effect of the policy on second earners would lead many of them to give up employment. This negative effect on two-earner couples would not be outweighed by increases in employment among couples in which (in the baseline scenario) both partners are out of work.

Below we return to the analysis of employment statistics. On the one hand this is done to find an explanation for our results in the patterns of employment in Germany. On the other hand we want to look more closely at families with children to see if differences in employment between Britain and Germany suggest any specific groups which could be targeted from the point of view of employment policy.

In tables 8, 9 and 10 we present a further breakdown of employment rates for men and women with children. The additional disaggregation is conditional on the age of the youngest child in the family, and we divide the sample into those with youngest children aged 0-3, 4-6 and 7-16. As in Section 2 statistics are presented for single people (Table 8) and couples (Table 9), and Table 10 presents the proportion of couples with children conditional on the employment status of the parents.

[16] We refer to the updated version of Gregg et al. results given in Blundell and Reed (2000).

Table 8. Employment rates of single individuals. UK and Germany, 2002/03.

	Employment rate in %	
	UK	**Germany**
Singles with children <17	52.43	62.74
Singles with children: youngest 0-3	33.08	32.30
Singles with children: youngest 4-6	50.78	49.10
Singles with children: youngest 7-16	60.26	73.37

Source: FRS 2002/03 and GSOEP 2003.

Table 9. Employment rates of individuals in couples. UK and Germany, 2002/03.

	Employment rate in %			
	UK		**Germany**	
	men	women	men	women
Couples with kids <17	90.32	67.03	86.83	60.51
Couples with kids – youngest: 0-3	92.53	51.77	83.74	40.02
Couples with kids – youngest: 4-6	89.64	67.41	89.53	58.37
Couples with kids – youngest: 7-16	89.16	76.57	87.60	72.34

Source: FRS 2002/03 and GSOEP 2003.

Table 10. Employment rates of individuals in couples. UK and Germany, 2002/03.

Proportion by employment status:	**Child <17 in family**	**Youngest: 0-3**	**Youngest: 4-6**	**Youngest: 7-16**
UK:				
Two-earner	63.46	50.06	64.45	71.60
Single earner – man employed	26.86	42.47	25.18	17.55
Single earner – woman employed	3.57	1.71	2.95	4.97
No-earner	6.11	5.77	7.41	5.87
Germany:				
Two-earner	53.91	34.42	54.58	64.26
Single earner – man employed	32.91	49.32	34.95	23.34
Single earner – woman employed	6.60	5.59	3.79	8.09
No-earner	6.57	10.67	6.68	4.32

Source: FRS 2002/03 and GSOEP 2003.

Several interesting facts emerge from this additional disaggregation of employment statistics. First of all, the group of lone parents "responsible" for the relatively higher employment rates among single people in Germany seems to be the lone parents with school-age children. Only for this group there is a big difference in employment rates with 73.4% of lone parents with school-age children employed in Germany and only 60.3% in Great Britain. Looking at the average employment rates for lone parents in Germany we could conclude that (at least relative to Britain) employment among this group does not seem to be a major concern. However, given that there is this large discrepancy *within Germany* in employment rates between parents with pre-school and school-age children, perhaps addressing factors constraining parents of younger children from taking-up employment would be an efficient way to increase the overall employment rate. As we showed the Tax Credits are every effective in increasing employment of single people. Over 100,000 individuals would move into work following the introduction of Tax Credits. Given the design of the implemented system, the effect would be high especially among lone parents (over 96,000). Of these 44,000 have children below school age, so Tax Credits could play an important role in increasing employment among this group. The policy could be extended to include childcare support (as is the case in the UK) and then the effect on parents with youngest children would most probably be even higher.[17]

Differences in employment rates for individuals living in couples between Great Britain and Germany also vary by the age of the youngest child. Among men the group which seems to "turn" the overall employment statistic for fathers in Britain's favour is the fathers with very young children (aged 0-3). For this group the employment rate in Britain is 92.5%, while in Germany only 83.7%. On the other hand we once again find that for women the difference in employment rates is smallest among those in couples with school-age children, so as in the case of lone parents Germany is lagging behind the UK as far as employment of people with pre-school age children is concerned. It is these groups of individuals in couples where we saw highest increases in employment since 1996 in the UK (see Appendix Table A3) and so perhaps a form of in-work support could be used to encourage employment among these groups in Germany as well. Yet, as we argued above the extent of the negative employment effect of Tax Credits in Germany (relatively) much higher than in the UK, and such an in-work support policy could backfire and result in lower and not higher employment among individuals in couples. Clearly, as in the case of lone parents, assistance with childcare could

[17] For discussion of German childcare policy see e.g. Wrohlich (2005).

encourage more individuals from no-earner couples to take-up employment, but this may still not be enough to outweigh the negative response of second earners in two-earner couples.

Thus if the German government considers low employment levels among couples with children to be an area of concern then perhaps it would be more effective to consider other policies supporting the low paid in work and targeted at the secondary earner. Such policies could include a move away from joint taxation (see Steiner and Wrohlich 2004) and perhaps some form of an individual tax credit (based on individual and not family income). The latter policy could bring the desired effects of increasing employment among lone parents and would not have an equally strong disincentive effects on second earners in couples.[18] Given the differences between Britain and Germany in the pattern of employment conditional on the age of the youngest child perhaps the policies could be focused on specific groups of parents.

7 Conclusion

Estimates of labour supply effects of recent UK reforms in the area of direct taxes and benefits show that policy can have significant influence on the level of employment. We confirm this in a simulation of in-work support system on German data. Our simulation results suggest that introducing in-work Tax Credits in Germany would increase employment of single individuals by over 100,000 but it would result in a reduction of labour supply among individuals in couples by about 70,000.

Our analysis of employment rates demonstrated that differences in employment between Germany and Britain are far from homogenous across different family types. This relates especially to patterns of employment within couples where one-earner families are much more common in Germany. "Importing" a UK-style in-work support system to Germany would further increase this difference. Results of our simulations suggest that Tax Credits would result in significant reductions of labour supply both among women and men in two earner couples. These reductions would not be matched by increases in labour supply among one-earner or no-earner couples, so the overall labour supply effects would be negative for both men and women. The result found for men is especially important as it is markedly different from all results found for the UK, where the overall response among men has always

[18] A system of individual tax credits could replace the Mini-job subsidies which support employment at very low hours of work.

been found positive. These estimated effects call for a high degree of caution as far as "importing" UK-style Tax Credits to Germany is concerned. In-work support based on family income would increase the proportion of one-earner couples and reduce employment levels of both men and women living in couples.

Comparing budget constraints derived on the basis of the 2002 tax and benefit systems for several stylised types of families we showed that, contrary to a "popular belief", the basic German system of support for the poorest groups of the population is not more generous relative to its British counterpart. This implies that, at least relative to the UK system, there is little room for policies aimed at increasing employment through reductions in the values of support at the lower end of the income distribution. The most important two differences between the two tax and benefits systems (as reflected in the budget constraints) are in-work support and joint taxation of couples. While, as noted above, in-work support conditional on joint family income may not be the best solution for Germany from the point of view of increasing employment rates of individuals in couples, this does not mean that every form of in-work support would fail. In fact the simulation results for singles are encouraging and, as we argued, if combined with childcare support could result in even higher employment response than that estimated in this paper. Implementing Tax Credits for couples, however, would need to take into account the interaction of labour supplies of both partners, and so perhaps be based on individual, rather than joint family income. Given employment patterns among couples with children an option to consider would also be to limit tax credits only to couples with youngest children. As Steiner and Wrohlich (2004) demonstrated the system of joint taxation of couples is to some extent responsible for the employment patterns we observe in Germany. A careful combination of a move away from joint taxation with a cautious design of in-work support could perhaps "do the trick".

Appendix:

Discrete Choice Labour Supply Estimation

Discrete choice models of labour supply are based on the assumption that a household can choose among a finite number J+1 of working hours (J positive hours points and non-participation); each hour j=0,.J corresponds to a given level of disposable income C_{ij} and each discrete bundle of leisure and income provides a different level of utility. In effect, choices j=0,...J in a couple correspond simply to all the combinations of the spouses' discrete hours (see for instance van Soest (1995)). The utility V_{ij} derived by household i from making choice j is assumed to depend on a function U of spouses' leisures Lf_{ij}, Lm_{ij}, disposable income C_{ij} and household characteristics Z_i, and on a random term ε_{ij}. When the error term ε_{ij} is assumed to be identically and independently distributed across alternatives and households according to a Extreme Value distribution, McFadden (1974) proves that the probability that alternative k is chosen by household I is given by:

$$\Pr_{ik} = \frac{\exp(V_{ik})}{\sum_{j=0}^{J} \exp(V_{ij})}, k \in J$$

The likelihood for a sample of observed choices can be derived from that expression and maximised to estimate the parameters of function U. We assume a quadratic specification of the utility function as in Blundell et al.(2000). In the estimation we do not consider potential effects of unobserved heterogeneity, which implies that the independence of irrelevant alternatives (IIA) property holds. However, Haan (2006) has shown that labour supply elasticties, estimated on the same data as in the present study, do not differ significantly when unobserved heterogeneity is introduced.

We estimate three separate models: labour supply of 706 single men, labour supply of 902 single women, and a joint labour supply model for men and women in couples (3367). The full specification of the model and results of the estimations are discussed in detail in Bargain et al. (2005).

Simulating Employment Effects

In the present non-linear model labour employment effects need to be derived numerically. Instead of the `aggregated frequencies´ technique, that is aggregating over the whole sample

the expected individual hour supply, we follow the calibration method, which is consistent with the probabilistic nature of the model at the individual level (Creedy and Duncan 2002). It consists of drawing for each household a set of J+1 random terms from the Extreme Value distribution until a vector of random terms is found that generates a perfect match between predicted and observed hour supply. In a second step, the draws are used for predicting labour supply responses to a tax reform, and averaging them over a large number of draws provides robust transition matrices.

Tables:

Table A1. Employment rates of single individuals. UK, 1996 and 1999.

	Employment rate in %	
	UK - 1996	**UK - 1999**
All Singles	61.93	65.89
Male Singles	67.46	70.18
Female Singles	56.00	60.90
Singles without children <17	68.02	70.52
Singles with children <17	38.67	46.51
Singles with children: youngest 0-3	21.82	25.92
Singles with children: youngest 4-6	34.64	43.08
Singles with children: youngest 7-16	48.33	56.51

Source: FRS 1996 & 1999.

Table A2. Employment rates of individuals in couples. UK, 1996 and 1999.

	Employment rate in %			
	UK - 1996		**UK - 1999**	
	men	women	men	women
All couple	84.74	69.39	86.82	71.93
Couples no kids <17	82.50	75.30	84.52	76.94
Couples with kids <17	86.89	63.70	89.07	67.00
Couples with kids – youngest: 0-3	87.26	49.82	90.92	53.23
Couples with kids – youngest: 4-6	86.73	65.13	89.60	68.40
Couples with kids – youngest: 7-16	86.66	74.16	87.62	75.91

Source: FRS 1996 & 1999.

Table A3. Employment rates of individuals in couples. UK, 1996 and 1999.

Proportion by employment status:	All couples	No child<17 in family	Child <17 in family	Youngest: 0-3	Youngest: 4-6	Youngest: 7-16
UK – 1996:						
Two-earner	63.69	67.47	60.05	47.62	61.96	69.19
Single earner – man employed	21.05	15.03	26.84	39.64	24.77	17.47
Single earner – woman employed	5.70	7.83	3.65	2.20	3.17	4.97
No-earner	9.57	9.67	9.46	10.54	10.09	8.37
Number of couples (in 1,000s)	9361	4589	4772	1745	826	2201
UK – 1999:						
Two-earner	66.52	69.87	63.23	50.93	64.61	71.15
Single earner – man employed	20.30	14.65	25.84	39.99	24.99	16.47
Single earner – woman employed	5.41	7.07	3.77	2.30	3.79	4.76
No-earner	7.77	8.40	7.16	6.78	6.61	7.61
Number of couples (in 1,000s)	9,219	4,568	4,651	1,559	811	2,281

Source: FRS 1996 & 1999.

References

Bargain, O. and Orsini, K. (2004), In-Work Policies in Europe: Killing Two Birds with One Stone?, IZA Discussion Paper 1445, IZA – Bonn.

Bargain, O., M. Caliendo, P. Haan and Orsini, K. (2005), Making work pay' in a rationed labour market. The Mini-Job reform in Germany, DIW Discussion Papers No. 536, DIW – Berlin.

Blundell, R., Duncan, A., McCrae, J. and Meghir, C. (2000), The labour market impact of the Working Families' Tax Credit, *Fiscal Studies*, vol. 21, no. 1, pp. 75-104.

Blundell, R. and Reed, H. (2000), The Employment Effects of the Working Families' Tax Credit, IFS Briefing Note No. 6, IFS – London.

Blundell, R., Brewer, M. and Shephard, A. (2005), Evaluating the labour market impact of Working Families' Tax Credit using difference-in-differences, HM Customs and Revenue.

Brewer, M., Duncan, A., Shephard, A. and Suarez, M.J. (2005), Did Working Families' Tax Credit work? The final evaluation of the impact of in-work support on parents' labour supply and take-up behaviour in the UK', HM Revenue and Customs.

Creedy, J. and A. Duncan (2002): Behavioural Microsimulation with Labour Supply Responses, Journal of Economic Surveys, 16.

Gregg, P., Johnson, P. and Reed, H. (1999), *Entering Work and the British Tax and Benefit System*, IFS Report, IFS – London.

Haan, P. (2006): Much Ado About Nothing: Conditional Logit versus Random Coefficient Models for Estimating Labor Supply Elasticities; forthcoming in: *Applied Economics Letters*.

Haan, P. and Steiner, V. (2005), 'Labor Market Effects of the German Tax Reform', DIW Discussion Papers No. 472, Berlin; in: Dreger, C., Galler, H.P., Walwei, U. (eds): *Determinants of employment - the macroeconomic view*, Nomos, Baden-Baden, 2005.

Haisken De-New, J. and Frick, J. (2001), Desktop Compendium to The German Socio- Economic Panel Study (SOEP): DIW Berlin.

McFadden, D. (1974), Conditional Logit Analysis of Qualitative Choice Behavior, in: Zarembka, P. (ed.), Frontiers in Econometrics, Academic Press.

Myck M. and Reed H. (2005). Disabled people in a dynamic model of labour supply and labour market transitions, *DWP Research Report* no 274, Department for Work and Pensions, London.

OECD (2005), Employment Outlook 2005. Statistical Annex, Paris.

Steiner, V. and Wrohlich, K. (2004), Household Taxation, Income Splitting and Labor Supply Incentives. A Microsimulation Study for Germany, *CESifo Economic Studies*, Vol. 50.

Steiner, V. and Wrohlich, K. (2005), Work incentives an labor supply effects of the „Mini-Jobs Reform' in Germany, *Empirica*, vol. 32, pp. 91-116.

Steiner, V., Haan P. and Wrohlich, K. (2005), Dokumentation des Steuer-Transfer Mikrosimulationsmodells STSM – Version 1999- 2002, DIW Data Documentatin 2005-09, DIW – Berlin.

Van Soest, A. (1995), Structural Models of Family Labor Supply: A Discrete Choice Approach, Journal of Human Resources, Vol. 30, 63-88.

Wrohlich, K. (2005), The Excess Demand for Subsidised Child Care in Germany, IZA Discussion Paper no. 1515, IZA - Bonn.