

Safety net still in transition: labour market consequences of extending support for poorest families in Poland*

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Abstract

Many aspects of the economic transition which started in 1989 in Poland are by now complete. However, the route Polish governments have since taken concerning the system of support for low-income families still imply very different poverty alleviation schemes compared to those found in many developed countries. We examine the Polish system of social assistance in a comparative context with Germany and focus on its implications for financial incentives to work. The paper shows the effect of extending the financial support system for poorest families in Poland on labour market incentives and the likely reaction on the labour supply side. For many family types a reformed system, with a generous form of the Social Assistance design, would imply similar relative labour market incentives to those in Germany. Introducing it would result in a strong labour supply response and notable falls in employment rates.

Keywords: work incentives, replacement ratios, social assistance, employment
JEL Classification: J21, J38.

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1 Introduction

There is always a difficult trade-off between the objectives of increasing employment through work incentives and reducing the number of households who fall below the poverty line. Finding the right balance between these objectives is no easy task for any government. The welfare system in Germany has often been criticised for focusing too much on the latter goal at the cost of making work pay little relative to being without a job, in particular for the low skilled, see e.g. Steiner (2004). On the other hand in Poland, following significant fiscal pressures at the beginning of the economic transition, the safety net has tended to provide little means-tested support for poorest families. Yet, while in Germany the low employment rates and high levels of unemployment, at least to some extent, relate to the generosity of the welfare state, in Poland the lack of generous state support out of work, at least at first sight, finds little reflection in high levels of employment. On the contrary, Poland has one of the lowest employment rates in Europe. Thus, in Poland low levels of government support out of work go along with low labour market participation and it seems that the working incentives provided by the fiscal system have lower effects on labour supply.¹

Using a comparison between Germany and Poland we examine the role financial incentives play in determining labour market behaviour in both countries. While the German system and its implications for the labour market have been analysed in a series of studies (see e.g. Bonin, Kempe, and Schneider (2003) or Haan and Myck (2007)), evidence about labour supply effects of the Polish tax and benefit system is still scarce. The contribution of our paper is two-fold. First, we provide evidence about the incentive structure of the tax and benefit system in a post-communist transition country (Poland), in a comparative context with a Western European system well known for the generosity of its welfare system (Germany). Secondly, we analyse the labour market implications for Poland of moving towards Western European social assistance schemes, some form of which will be necessary if Polish governments make poverty alleviation one of its goals.

¹According to the World Bank Country Brief 2003 7mln or more of Poland's population (about 18 percent) falls below the poverty line and poverty is more widespread in Poland than in other advanced transition economies of Central Europe such as Hungary and the Czech Republic. In the BBGD 2005 data 16.6% of individuals live in households with equivalised income below 60% of the median. Over 21% of all children live in households below this poverty line (calculations use the Central Statistical Office definition of disposable income, median equivalised income in 2005 in Poland was 997.4 PLN).

Social assistance programmes in many developed market economies, especially in Europe, are characterised by relatively generous out-of-work benefits which are withdrawn at high marginal rates (close to and sometimes exceeding 100%) at low earnings levels. They therefore provide only moderate or no financial labour supply incentives in particular for low wage individuals. While a similar scheme is officially in operation in Poland, the majority of social assistance payments is at the discretion of local governments, which quite strictly limit the payments to the proportion guaranteed by the central government. This implies very low levels of social assistance payments and withdrawal rates of much less than 100%. On top of this restriction there is also a strict informal wealth-test which significantly limits the number of eligible households.

In the light of high (relative) poverty rates in Poland the direction which policy concerning poverty alleviation should take in the next few years is an important issue. The aim of reducing poverty will be difficult without relaxing wealth-related eligibility criteria and increasing the amounts guaranteed by the central budget and paid out to families. Governments must however realise the implications of reforming the social support system on labour market incentives, and think of ways to make work pay more if staying out of the labour market were to become more financially attractive.

For the comparative analysis we make use of country-specific micro-level data, for Germany the Socio Economic Panel (SOEP) and for Poland the Household Budgets Survey (Badania Budzetów Gospodarstw Domowych, BBGD). To describe in detail the country-specific tax and transfer systems we employ micro-simulation models, STSM for Germany and SIMPL for Poland. This methodology allows us to describe the labour market and wage structure in both countries and the labour market incentives induced by the respective tax and benefit systems. To reflect the heterogeneity in the data, apart from presenting financial incentives for stylised households we also derive household specific replacement ratios which measure the relative income gain between work and non-work. Finally, we assess the change in work incentives if Poland were to move closer to the German model of support for the poorest households and estimate the labour supply effects of several potential hypothetical reforms based on micro-econometric techniques.

The detailed German-Polish comparison of employment rates by various demographic groups does reflect the differences in financial incentives provided by the two tax and benefit systems (if not in absolute rates of employment then in terms of rela-

tive rates in comparison to other groups within countries). We find that employment rates, especially among married women with children, are higher in Poland than in Germany. In contrast, both single and couple households without children have an extremely low labour market attachment in Poland. This might be partly demand-side driven but is largely due to the outflow of individuals to disability benefits in Poland.

In general, we find a weak role of low out-of-work support in encouraging employment in Poland, although the picture changes when we focus only on families without early retirement or disability pensioners and when we look at single family households. The latter analysis seems to suggest that in the situation of very low social support from the government a lot of non-working individuals fall back on resource-sharing within multi-family households. Compared to Poland financial incentives to work in Germany are much weaker, especially for single individuals and first earners in couples, and yet in many demographic groups employment rates are much higher.

The finding that despite such low levels of out-of-work support employment levels are still so low in Poland has potentially very significant implications for policy design. If the current tax and benefit system functions alongside such low employment rates, then pursuing the goal of poverty reduction would risk significant reductions in the levels of employment. Extending the Polish welfare design in the direction of the German (or more broadly Western European) system by increasing means-tested out-of-work benefits could reduce poverty but only at the cost of worsening work incentives. It seems therefore that any potential anti-poverty policy in Poland will have to combine increases in out-of-work benefits with making work for the low paid more attractive. We estimate that moving in the direction of Western European social support systems could reduce employment in Poland by about 5.5 percentage points for single women, 1.6 percentage points for single men and about 2.7 and 3.2 percentage points for men and women in couples respectively. Possible routes to avoid reductions in employment following the extension of social assistance could be simultaneous introduction of in-work support through subsidies for those taking-up employment or means-tested in-work credits, similar to programmes in the UK or the US.

The paper is organised as follows. The next section discusses the data and provides descriptive statistics about the wage and labour market structure in both countries. Then, in Section 3 we compare employment statistics for Germany and Poland. In Section 4 we discuss the tax and benefit systems in operation in both countries in 2005

and analyse work incentives they induce by looking at budget constraints of stylised household types and at the distributions of replacement ratios. Finally, we study the effects of changes in work incentives of three hypothetical Social Assistance reforms for Poland which would make the social support in Poland similar to that operating in many Western European countries. The last section concludes.

2 Data

Data for the empirical analysis come from country specific household surveys, the German Socio-Economic Panel (SOEP) for Germany and the Household Budgets Survey (Badanie Budżetów Gospodarstw Domowych, BBGD) for Poland. In both countries we use data for the year 2005. The SOEP 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 38.8mln households living in Germany) on a yearly basis. The BBGD surveys annually about 35,000 households in Poland (these represent about 13.3mln Polish households). Both surveys contain detailed information on household incomes, employment status and household structure which is necessary for the analysis of work incentives and labour supply behaviour.² To limit the degree of influence of the most obvious systemic differences, primarily in the education and pension systems, we restrict the core sample of interest to individuals aged 25-59. Basic descriptive statistics are provided in Table 1. We distinguish between two samples, the first for which we compute employment statistics in Section 3, and the second on which we conduct the analysis of replacement ratios and the estimation of labour supply responses. The difference between the two samples is that for the computation of replacement ratios we further limit the sample to families in which at least one person is “labour supply flexible”, i.e. is not a pensioner, a day-time student or self-employed, and fulfills the age criterion. Couple households in which one spouse is not “labour supply flexible” are part of the sample but only the behaviour of the flexible spouse is analysed.

Regardless of the sample, two interesting facts emerge from these descriptive statistics. The age distribution in Poland and Germany is quite different. While in Poland

²A description of the GSOEP can be downloaded from www.diw.de/soep, while a description of the BBGD can be found in Bargain et al. (2007).

the distribution over the age groups is fairly even, the baby boom and the stark drop in birth rates thereafter becomes obvious when comparing the age groups 25 - 34 and 35 - 44 for Germany. The second striking difference between Germany and Poland which will be more crucial for the following analysis is the far higher share of Polish men and women in the age group 25-59 who receive pensions. While the share for both men and women is below 4% in Germany, it amounts to 17% for men and close to 20% for women in Poland.

Tables 1 and 2: about here.

3 Employment Statistics

The starting point for our analysis is a descriptive comparison of employment statistics in Germany and Poland with a detailed breakdown by family status. As we mentioned in the introduction both countries have a rather poor record concerning the levels of employment, and while the situation in both countries has been improving lately, they are still far off the Lisbon targets set out for 2010. Presenting the information by family type allows us to some extent to separate out the relative effects of demand for and supply of labour. Labour demand conditions are more or less the same for individuals regardless of their family status (conditional on other characteristics). On the other hand, financial incentives in- and out of work differ by family composition and we would expect labour supply behaviour to reflect these differences. The statistics presented below are clearly far from a complete analysis of determinants of employment, but their role is to give us the background of the labour market analysis that follows.

Tables 3,4 and 5: about here.

Tables 3, 4 and 5 present employment statistics for, respectively, single individuals, and men and women in couples. In Tables 6 and 7 the statistics for couples are presented in a breakdown into couples with two-earners, only the man or only the woman working and those couples where neither of the partners is working.

Employment rates in Poland are lower in comparison to Germany for almost all groups of individuals. It is also clear that employment rates in the former East Germany are lower than in the former West Germany. What is striking in the Polish

case is the low levels of employment among single individuals without children, which is almost exactly the same as for those with children. Employment levels of single individuals with children below 4 years old in Poland are actually higher than those of lone parents in either eastern or western part of Germany. The situation is similar for women in couples with children aged below 4. Among couples once again the employment rates for women without children are significantly lower than for those with children in Poland, while they are about 10 percentage points higher in Germany. In the case of men in couples employment rate of those without children is about 20 percentage points lower, and for those with children only by about 5 percentage points lower in Poland than in Germany.

Some of the characteristics of the Polish labour market become even more striking when we look at the breakdown by couple-level employment state. This is shown in Tables 6 for Germany and 7 for Poland. Again, the most striking point is the difference in employment levels among couples without children. Here, while almost 69% of German couples without kids have both partners in work, in Poland the proportion is only about 41%. Even more striking is the fact that over 20% of couples without children are couples with neither of the partners in work. Once more the couples with the youngest child aged below 4 have very high participation rates in Poland and a higher rate of two-earners compared to Germany. However, it seems that the proportion of parents returning to work once their children grow older - especially in the case of women - is much higher in Germany. In Poland a lot of couples with children aged over 3 are single earner couples, and only about 57% of couples with children over 3 have both parents in work.

Tables 6 and 7: about here.

These employment statistics demonstrate some very interesting features of the Polish labour market and bring us back to the discussion of Table 1 and the high proportion of individuals who receive social security pensions in Poland. In addition, we focus only on single family households. This highlights a second interesting feature in Poland: the high proportion of multi-family households. According to the BBGD-2005 data almost 27% of households in Poland are multi-family households. Given the likely sharing of resources between families in households such a multi-family structure is likely to have consequences for the social security system and thus for replacement

ratios and labour market decisions. In Tables 8 and 9 we show some labour market statistics in the case where we exclude families with pensioners, and present also employment rates for those who live in non-pensioner single-family households.

Tables 8 and 9: about here.

Comparing employment rates from Table 8 with results presented in Tables 3, 4 and 5, we can see some interesting patterns. Once families with pensioners are excluded from the sample the rate of employment of single individuals increases from 56.10% to 65.72% and further to 70.54% if we look only at single-family households. In the latter case if we look at single men, the employment rate is over 75%, and employment of single parents with children of school age is very close to the rate for Germany (63.26% in Poland vs. 64.93% in Germany). On the other hand while the overall employment rate for single parents with children aged 0-3 in Poland is higher than the overall rate for Germany, if we only look at single family households in Poland the employment rate drops by about 8 percentage points to 36.11%. This reflects the likely help of other household members with childcare which makes maintaining employment easier for lone parents living in multi-family households.

Employment rates are also much higher for both men and women in couples we exclude families with pensioners. This is especially strong for couples without children. In the case of couples the effect of living in a multi-family household does not seem to make as much of a difference as for singles. Once families with pensioners are excluded employment rates for men without children and with children of school age in Poland are very similar to those in Germany. This is in strong contrast to the statistics computed for the case where everyone is included. The breakdown by the employment status of the spouses in couple households points in the same direction. The overall share of no-earner couples is reduced to about 5% and is fairly similar conditional on the age of children. On the contrary, the share of two-earner and one-earner couples is increasing. Hence, when excluding the pensioners and multi-family households, the employment patterns in Poland are much more similar to those in Germany.

When focusing on the work incentives, replacement ratios and behavioral responses of household in the two countries, the distinction between Polish households receiving extra transfers either through pensions or through transfers from other families living

in the household, from those single family household solely relying on the basic social transfer, will be crucial.

4 Tax and benefit systems and work incentives in Germany and Poland

4.1 Gross and net incomes

The diversity of systemic solutions related to the labour market in Europe provides for a very interesting setting for examining behavioural models in economics. At the same time, however, this diversity makes international comparisons extremely complex, especially - as in the case we consider - if the countries, though neighbouring with each other, differ in their GDP per capita by a multiple of 4 (by 2.1 if adjusted for PPP). As we show in Figure 1 the differences in full-time wages between Germany and Poland are still substantial, to say the least, even if we adjust the values for purchasing power.³ The median full time gross monthly earnings in Germany for men and women in 2005 were respectively 2900 euro and 2488 euro. In Poland these values - unadjusted for PPP - were 452.1 and 391.5 euro, while after adjusting for differences in the purchasing power 947.4 and 820.4 euro. Thus, even if we adjust for differences in price levels in the two countries, wages in Poland were about three times lower than in Germany.⁴

Figure1: about here.

The same type of differences as for gross wages apply to the case of disposable net incomes implied by the tax and benefit system.⁵ This can be seen from budget constraints drafted for several stylised households, which are presented in Figure 2. The budget constraints show the level of monthly disposable incomes conditional on different intensity of work for four types of families: a single person without children,

³Here, we focus on observed wages of the full-time working population. All monetary values in this paper are expressed in euro. For converting the Polish zloty into euro we take the average exchange rate for 2005 published by the National Bank of Poland ($e/PLN = 4.0254$) and express the values in euro adjusting for Purchasing Power Parity. The PPP adjusted exchange rate is: $e/PLN = 1.921$.

⁴Mean wages were computed for men and women aged 25-59 using BBGD-2005 and GSOEP-2005.

⁵For a more detailed discussion of the German tax and benefit system, see Haan and Myck (2007), for Poland, see Bargain et al. 2007.

a lone parent with one child (Figure 2A) and for the first and the second earner in a couple with one child (Figure 2B). In all cases we assume that individuals earn the (country specific) median wage (female median for singles and for the second earner in the couple, and the male median for the first earner in the couple). Incomes received out of work include housing benefits, social assistance and child-related support. The disposable incomes are expressed in euro and for Poland are computed adjusting for purchasing power.

Figure2: about here.

Similarly to the the case of gross wages, disposable incomes for all types of families are significantly lower in Poland, even if we adjust for differences in purchasing power. At the same time the figures reflect very important differences as well as similarities in the tax and transfer system in both countries. The major difference is the generosity of the systems for the poorest families. For example, while the disposable income of a non-working lone parent in Germany is over six times higher than in Poland (1088 vs. 171.4 euro per month), the income a lone mother working full time is only about 2.7 times higher (1088 vs. 572.1 euro per month). The same applies to incomes of the couple: if none of the partners is employed the disposable income of the family is 1277 euro per month in Germany and 292.7 in Poland. If the man in the couple works full time the incomes are respectively 2097.8 euro and 734.4 euro per month, while if both parents work full time 3193.1 euro and 1182.2 euro per month. The Polish system of support for those on lowest incomes, which is the focus of our attention in this paper, is discussed in more detail below.

In contrast to the benefit system, there are many similarities in the structure of social security contribution and income taxation between Germany and Poland. In both countries, married couples are jointly taxed with full income splitting which implies high marginal tax rates for the secondary earners. This is reflected in the relatively flat budget line of secondary earners in married couples.⁶

⁶For more detailed of the effect of joint income taxation on work incentives, see Steiner and Wrohlich (2004).

Social Assistance in Poland

As stressed above, the key difference between the German and Polish tax and benefit systems are the out-of-work transfers which guarantee a minimum income for poor households. Since the main focus of this paper is on the effect of the Polish tax and transfer system on work incentives, a more detailed discussion of the social assistance is necessary. The system of state's social support in Poland could be broadly separated into three components: Family Benefits, Housing Benefit and Social Assistance (SA).⁷ All three of those are means-tested, and their names are self-explanatory.

In Poland the SA is divided into permanent and temporary elements, with the first aimed at those whose circumstances are determined either by age or by invalidity which started in childhood. The second element is supposed to assist families in "temporary" difficult financial circumstances. The temporariness of this element, relates however more to the possibility of improvement of family circumstances rather than to some specific rules regarding the period of payment. Thus, the Temporary SA provides the ultimate safety net.

We saw above that there are important differences between the shapes of budget constraints for single people and for first earners in couples between Poland and Germany, with much of the German budget constraint remaining essentially flat in the lower end of work intensity. Such flat elements of the budget constraint are relatively common and result from very high (often 100%) withdrawal rates of social assistance. We can see that this is not so in the Polish case where the example families presented in Figure 2 see their disposable incomes rise even at the lowest levels of hours worked. The budget constraints for the single parent and the first earner in a couple with one child are presented in more detail in Figure 3, where apart from the level of the disposable income conditional on work intensity we also show its different components. As we can see on panels 3A and 3B there is no "flat" segments of the budget constraint, and what's perhaps even more striking, the Temporary SA is only a very small proportion of disposable incomes even at the lowest levels of work intensity.

The central SA legislation does in fact specify minimum levels below which families' disposable incomes ought not to fall. At the same time however the central budget guarantees only 20% (for multi-person households) or 30% (for single person house-

⁷The details of each of these have been described elsewhere (see, e.g. Bargain et al. (2007)).

holds) of the amount the families are short of to reach this minimum. The payment of the remaining 80% or 70% is left at the discretion of local governments, which often prefer to spend their resources differently.⁸ The budget constraints presented in Figure 3A and 3B as well as all those on Figure 2 are drawn assuming that the families receive only the part of the Temporary SA which is guaranteed by the central government. To make the difference between what is legislated and what is guaranteed by the central government we present budget constraints in three different scenarios. These are shown on panels C and D of Figure 3, where budget lines are drafted in scenarios with no Temporary SA, with only the guaranteed level, and with full legislated amounts of the benefit paid to the families. As we can see the legislated minimum incomes are relatively high compared to incomes in work, especially for couples in which case the level of Family Benefits is relatively low.

Figure 3: about here.

A crucial feature of the system of support through Social Assistance in Poland is an informal wealth test which the families applying for the Temporary SA are subjected to. The wealth test is conducted by a representative of the local Social Assistance Centre who gives an overall assessment of the resources of a given family. Subject to this assessment the family is granted the Temporary SA or the application is rejected.

Such informal tests are of course impossible to account for precisely in a micro-simulation model. What we do to proxy this test is to generate an expected probability of receiving the Temporary SA conditional on wealth-related characteristics of the household (like flat area and ownership, household equipment, region, etc.), and then calibrate a threshold level of this expected probability below which households do not qualify for the Temporary SA. The calibration is conducted in such a way so that the number of recipients of the Temporary SA in the micro-simulation model is the same as the number of recipients in the official administrative statistics.⁹ The calibrated threshold of the expected wealth test measure for the 2005 data is 0.14. This implies that only about 4.4% of all households in our data will be considered for receipt of the Temporary SA in the base 2005 system. Once the wealth test and the income

⁸According to unpublished government statistics only about 10% of the total spending on the Temporary SA comes from the local governments.

⁹More details of the procedure can be found in Myck (2007).

means-test are combined only about 2% of all households receive the Temporary SA. Grossed-up to the population total this is only about 300,000 households (of the total of about 13.3mln households in Poland). We need to bear these statistics in mind in the analysis and interpretation of replacement ratios below, and in the examination of potential reforms of Social Assistance considered in this paper in Section 5.

4.2 Replacement ratios

Given the degree of disparities in the levels of wages and disposable incomes presented above, comparing work incentives in absolute terms - even if adjusted for purchasing power - clearly does not make much sense. To reflect the difference in the social support system between Germany and Poland we therefore conduct the comparison using replacement ratios simulated with country-specific micro-simulation models, STSM for Germany and SIMPL for Poland. Both models are run on the representative samples of the respective populations which are described in Section 2 and account for the details of tax and benefits systems in Germany and Poland.¹⁰ The advantage of micro-simulation is that we can reflect the heterogeneity of households rather than looking only on stylised examples.

Computing replacement ratios

Below we present the method adopted for the computation of replacement ratios (RRs), i.e. the ratios of income out of work to income in work. Replacement ratios are computed only in the cases where in a family/tax unit there is at least one person who is “labour supply flexible”. This category excludes all those who:

- receive retirement, pre-retirement or disability pension;
- are self-employed;
- are day-time students.¹¹

Then according to this definition we compute RRs separately for three types of benefit units:

¹⁰For detailed descriptions of the micro-simulation models see Bargain et al. (2007) for the Polish model SIMPL, and Steiner et al. (2005) for STSM, the German model.

¹¹For details see Tables 1 and 2.

- single individuals (with and without dependent children);
- couples with both “LS flexible” partners;
- couples with only one “LS flexible” partner.

RRs for single individuals are computed as:

$$RR_s = Y_{(0)}/Y_{(1)}, \quad (1)$$

where $Y_{(0)}$ is income out of work and $Y_{(1)}$ is income in (full-time) work.

For couples with both “LS flexible” partners we compute four sets of family-level incomes, conditional on employment of either of the partners:

- $Y_{(1,1)}$ for the scenario where both partners are employed (full-time);
- $Y_{(1,0)}$ for the scenario where only the man is employed (full-time);
- $Y_{(0,1)}$ for the scenario where only the woman is employed (full-time);
- $Y_{(0,0)}$ for the scenario where both partners are not employed.

If only one of the partners is “LS flexible” we compute incomes in two scenarios conditional on his/her employment status:

- $Y_{(1X)}$ for the scenario where the “LS flexible” partner is employed (full-time);
- $Y_{(0X)}$ for the scenario where the “LS flexible” partner is not employed.

Both of these incomes are computed conditional on the recorded status of the other partner.

This leads to four sets of replacement ratios computed for couples:

$$RR_{c1} = Y_{(0,0)}/Y_{(1,0)}, \quad (2)$$

$$RR_{c2} = Y_{(0,0)}/Y_{(0,1)}, \quad (3)$$

$$RR_{c3} = Y_{(1,0)}/Y_{(1,1)}, \quad (4)$$

$$RR_{c4} = Y_{(0,1)}/Y_{(1,1)}, \quad (5)$$

For families where both partners are “LS flexible” we compute all four of these replacement ratios. For those with only one “LS flexible” partner we compute two RRs, keeping the income of the other partner as fixed. In the latter case if the “LS inflexible” partner is a student or a pensioner we compute RRs for the “LS flexible” partner according to equation 2 or 3, while if he/she is working (i.e. is self-employed or employed and out of the sample age range) according to equation 4 or 5.

Thus, our focus in the analysis is on families (or tax units) in a rather narrow sense where a family is identified as a single adult or a couple in both cases with any dependent children. Such families usually form separate households in the data, but there are - especially in Poland - many multi-family households. In these cases it would be natural to assume that families share resources, in which case the identification of “true” replacement ratios on the basis of which individuals act on the labour market is impossible without further assumptions. However, since the aim of this paper is to look at the way the tax and benefit systems in Germany and Poland determine RRs we take the approach of computing RRs within each family separately even in cases of multi-family households. This in the case of these households means that we compute RRs assuming that the behaviour of other household members is exogenous and that there is no sharing of resources between families. Naturally we limit the analysis to households with at least one family which includes at least one “LS flexible” individual.

Replacement ratios in Germany and Poland

In Table 10 we show some statistics related to replacement ratios for the 2005 tax and benefit systems for Germany and Poland. The calculations are based on the RRs samples from GSOEP and BBGD respectively. Full distributions of these replacement ratios are presented in Figure 4. Both Table 10 and Figure 4 show replacement ratios for six groups of individuals:

- single individuals without children (Single NK),
- single individuals with children (Single WK),
- first earner in couple for men (FE - man),
- first earner in couple for women (FE - woman),

- second earner in couple for men (SE - man),
- second earner in couple for women (SE - woman).

The lower the replacement ratio, the stronger is the financial incentive to take up a job. The relative differences between Germany and Poland in terms of work incentives are very clear, especially in the case of single individuals and first earners in couples. Given the very strict wealth test criteria in Poland very many families do not qualify for any Social Assistance, and in cases they are not eligible for housing benefits and family benefits, they receive no social support from the government. Thus, the concentrations of replacement ratios at zero for single individuals without children and for first earners in couples. RRs for single individuals in Germany have bi-modal distributions which is a result of ineligibility of some of them for housing benefits.

Financial incentive to work are very similar for second earners, which is probably partly due to the system of taxation splitting in both countries. In these cases also the system of social support is not as important since most families would not qualify for Social Assistance in scenarios of having one of the partners in full-time work. Yet for all categories of individuals we consider, work incentives are weaker in Germany. While the median RR for single people in Poland is 0, the equivalent for Germany is 0.680. In case of lone parents the figures are respectively 0.428 and 0.833. The median ratio of income out of work to income in work for male first earners is 0.166 in Poland and 0.494 in Germany, and the figures for women are 0.268 and 0.609.

Table 10: about here.

5 Reforming Social Assistance in Poland

In this section we present an analysis of the likely effects of three hypothetical reforms of the Temporary SA in Poland by first looking at how they would influence replacement ratios (Section 5.1), and secondly how these changes would affect labour market participation (Section 5.2). The reforms we model consist of two elements. First we make the Temporary SA available to a greater proportion of households by relaxing the very strict wealth test criteria operating in Poland. In the micro-simulation of the base scenario for 2005 these criteria imply that only about 4.4% of households are

eligible to claim the Temporary SA provided they pass the income means test.¹² In the first reform (Reform I) we change the parameters of the model so that this proportion increases to 25% of households. The second reform adds to that the increased generosity of the Temporary SA in the form of making the full amount between the legislated family specific minimum income and the current family income available to families (Reform II). This reform therefore increases the amounts paid out to families along the lines presented in Figures 3C and 3D and makes the “full” amounts of the Temporary SA available. The last reform (Reform III) goes further in the direction of the German system, and further relaxes the wealth test criterion, which implies that the Temporary SA is now available to 75% of households (compared to the base scenario of 4.4%). In this case again the “full” amounts of the Temporary SA are paid out to families.

5.1 Temporary SA reforms and replacement ratios

Some details of the effects of the three reforms on replacement ratios in Poland are presented in Table 11 and the resulting changes in the distribution of RRs are shown on Figure 5. The results go in the expected direction with Reform I having a very modest effect on work incentives and Reform 3 changing incentives most significantly. As we would expect the effects are lowest for the second earners, since in most cases full time earnings of the first earner make the family ineligible to receive any Social Assistance. As far as the distribution of replacement ratios is concerned it is most notable that the “full” support provided by the Temporary SA to couples is so high that when extended to a large number of families work becomes completely financially unattractive. Already in the case of Reform II the 90th percentile of the distribution of the replacement ratios for women is 1 meaning that income out of work is as high as income in work. This is the case for both male and female first earners in the case of Reform III. In the case of Reform III median and mean replacement ratios for first earners in couples become higher than the equivalent ones in Germany. It is interesting to note that in the case of singles even extending the Temporary SA along the lines of Reform III, does not affect work incentives very strongly. Mean replacement

¹²For comparison - in Germany wealth criteria for Social Assistance imply that about 75% of households would qualify provided they pass the income-means test (computations using the STSM model using GSOEP 2005 data))

ratios for single people without children increase from 0.113 to 0.123, 0.161, and 0.211 respectively after Reform I, II, and III, but they still remain far off the German mean of 0.664. The same can be said about lone parents for whom mean replacement ratios rise from 0.442 to 0.537 under Reform III. This is still much lower than in Germany. One of the reasons for these limited effects are the multi-family household arrangements. In these cases, since the SA is jointly determined at household level, incomes of other families may be high enough to make the whole household ineligible for the Temporary SA. Apart from this, as we saw in Section 4, given the high additional premia to lone parents available through the Family Benefits, the additional incomes from the SA are much lower in the case of lone parents than in the case of couples. In the case of many lone parents incomes from the absent partner also contribute to the overall income out of work, which may make many lone parents ineligible to claim Temporary SA.

Table 11: about here.

Figure 5: about here.

5.2 Temporary SA reforms and the likely response in the labour market

Estimating labour supply response

In order to examine the behavioural effects of households induced by changes in the work incentives we use micro-econometric methods and estimate labour supply models.¹³ More precisely, we are interested in the effect of reforming the Social Assistance in Poland on labour supply. In our modelling we follow a broad literature modelling static labour supply decisions, (see. e.g. van Soest (1995) or Blundell, Duncan, McCrae, and Meghir (2000)). In this approach, we focus in particular on the effect of work incentives on labour supply measured by the difference between out-of-work and in-work net household income.¹⁴

In line with the analysis of replacement ratios, we perform five separate estimations: for men and women in single families and for couples depending on the “flexibility”

¹³As we apply only standard econometric models, we omit a detailed discussion of the model. For more information, see e.g. Cameron and Trivedi (2005).

¹⁴This difference is similar to the replacement ratio defined above.

of the spouses. We model the participation decision in the family context, that is we assume that both spouses jointly decide on labour market participation. For singles, and couples with one inflexible spouse, the participation decision is reduced to a binary choice model. In the econometric analysis we model this decision using a standard logit model where the binary outcome is participation or non-participation on the labour market. The key explanatory variable in our models is the difference between the net income in both states. For couples with two flexible spouses we endogenise the behaviour of the partner by estimating a joint model of labour supply. The labour supply decision is the joint outcome of the spouses' binary decisions, resulting in four choice alternatives. This decision process is estimated by the conditional logit model as the alternative specific net family incomes, which reflects work incentives, can be incorporated in a simple way.¹⁵ In addition to the work incentives, we condition the participation decision on several observable characteristics such as age, education, region and number and age of children. Since we estimate labour supply behaviour only on the extensive margin the leisure time which is a key variable in the structural static labour supply models (van Soest (1995)) can be modeled by a dummy variable indicating the disutility of work. In the Appendix we present results of the five separate estimations.

Labour supply effects of Temporary SA reforms

In order to analyse the effect of work incentives on participation we derive labour supply responses measuring the relative change in the participation induced by the changes in Social Assistance. More precisely, given the econometric estimation we predict the probability of labour market participation before and after the reforms. The difference in participation rates is solely due to the change in the net household income following the reforms.¹⁶

In the following tables, we present the labour supply effects of the three hypothetical reforms of the Temporary SA in Poland. In addition to the relative change in

¹⁵The conditional logit framework makes use of the difference of the alternative specific variables. Thus, we make use of the same information as above when estimating a logit model conditional on the difference in income.

¹⁶Note, as standard in this literature we assume that the estimated behavioural parameters are constant and not affected by the reform

labour market participation we present also the absolute change in the participation rate measured in percentage points. Results are given separately for men and women and for singles and couples, and have been derived for several sub-groups conditional on observable characteristics.

Tables 13, 15, 12, and 14: about here.

In general, the estimated labour supply response reflects the changes of the replacement ratios induced by the three reforms (see Section 5.1). As in all reform scenarios out-of-work income is increased, in all three cases we find negative employment effects. For all groups and sub-groups, the effects of Reform III are the largest and Reform I, i.e. only relaxing the wealth test, has the smallest negative effect. The effects are strongest for groups which on the one hand qualify for higher levels of the Temporary SA, and on the other have higher elasticities given their observable characteristics. On average, the participation of single women is reduced by more than 5 percentage points (about 10%) in Reform III. The effect is even stronger for the lower educated women and for women with children. For single men, we find clearly lower negative effects both in percentage points and in percent, reflecting their higher wages, the different distribution of observable characteristics, and their higher participation rates.

For men and women living in couples, the effects of increasing the generosity of the Temporary SA are lower than in single households. In general, households where one spouse is working are not affected by the reform of social assistance because their household income exceeds the social assistance level. Couple households become only eligible if none of the spouses is working. However, given the size of the reform both men and women would reduce their labour supply, e.g. in the hypothetical scenario of Reform III the participation rate of women would on average decrease by 4.8% and for men by 3.7%. In line with previous findings, women in couple households tend to react stronger to changes than men. Conditional on the observed characteristics we find the expected pattern. Men and women with low education and those with children have stronger negative employment effects. Low educated because their income in work is relatively low leading to high replacement ratios when out-of-work incomes increase, and those with children because social assistance is more generous for families with children and their labour supply elasticities are higher.

Overall, we find that depending on the design and the size of the reform, introducing more generous social assistance in Poland would have strong negative employment effects for several sub-groups of the population. This underlines the above mentioned trade-off between fighting poverty and making work pay. A more generous social assistance which is necessary to alleviate poverty, would increase the replacement ratio between out-of-work and in-work incomes. This leads to lower work incentives and therefore to reduced employment. The drop in participation would further reduce the already low rates of employment in Poland. We have shown that social and family networks partly explain why overall participation is relatively low in Poland. Therefore, for these groups the discussed reforms of social assistance would have small labour market effects. Instead of relying on family support these families after the reforms could rely on government transfers.

6 Conclusion

The paper discussed the current safety net system in Poland in a comparative context with Germany. We presented an analysis of work incentives in Poland and Germany and analysed labour market effects of hypothetical reforms extending the availability and levels of social assistance in Poland. The reforms we examined would move the current Social Assistance arrangements towards that of Germany and many other Western European countries. Comparing employment statistics by family type and work incentives for Germany and Poland we have shown that despite a lower public social security network, overall employment is lower in Poland than in Germany. While this is partly demand side driven, strong differences by family types can be only explained by labour supply incentives. Controlling for private social networks in the form of multi-family households and for the extensive use of disability and early retirement pensions, we showed that employment rates in Poland and in Germany are in effect very similar.

Our findings concerning the hypothetical reforms of the Social Assistance in Poland underlines the above mentioned trade-off between fighting poverty and making work pay. A more generous social assistance which is necessary to prevent poverty, would increase the replacement ratios between out of-work and in-work incomes. This would lead to lower financial attractiveness of employment relative to remaining out of the

labour market and as a result to a significant drop in employment levels. A more generous system of support through Social Assistance with significantly relaxed wealth-related eligibility criteria would lead to a notable drop in employment rates for single individuals as well as those living in couples.

A solution of this trade off could be a careful combination of out-of-work and in-work transfers. As the experience of several countries and many simulation studies have shown, a well-designed and targeted in-work credits system can lead to a significant increase in employment without reducing a guaranteed minimum support for the poor.¹⁷ Before embarking on the extension of Social Assistance Polish governments would be well advised to step cautiously and consider providing additional incentives to low-paid employment if the goals of reducing poverty and increasing employment are to be achieved simultaneously.

¹⁷See for example the studies on the Working Families' Tax Credit in the UK (Blundell, Duncan, McCrae, and Meghir (2000)) and a simulation study for other countries (e.g. Haan and Myck (2007))

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Tables

Table 1: Descriptive statistics for Poland

| | Employment sample | | RRs sample | |
|--------------------------------|-------------------|--------|------------|--------|
| | Men | Women | Men | Women |
| Number of observations | 24,547 | 26,963 | 21,285 | 22,596 |
| Number of singles | 5,109 | 6,643 | 3,570 | 4,881 |
| - with children 0-16 | 263 | 1,791 | 189 | 1,517 |
| Number in couples | 19,438 | 20,320 | 17,715 | 17,715 |
| - with children 0-16 | 11,288 | 11,041 | 10,631 | 10,631 |
| Proportion by age group | | | | |
| below 25 | - | - | 0.33% | 1.93% |
| 25-34 | 26.85% | 25.84% | 28.06% | 29.27% |
| 35-44 | 25.86% | 24.97% | 26.84% | 27.39% |
| 45-59 | 47.29% | 49.18% | 43.40% | 41.15% |
| over 59 | | - | 1.38% | 0.26% |
| Proportion receiving a pension | 17.06% | 19.52% | 12.27% | 8.31% |

Source: BBGD, 2005.

Table 2: Descriptive statistics for Germany

| | Employment sample | | RRs sample | |
|---------------------------------|-------------------|--------|------------|--------|
| | Men | Women | Men | Women |
| Number of observations | 5,744 | 6,101 | 4,767 | 4,954 |
| Number of singles | 1,035 | 1,171 | 697 | 884 |
| singles with children 0-16 | 28 | 329 | 20 | 291 |
| Number in couples | 4,709 | 4,930 | 4,070 | 4,070 |
| Number in couples with children | 2,223 | 2,213 | 2,100 | 2,100 |
| Proportion by age group | | | | |
| below 25 | - | - | 0.1% | 0.47% |
| 25-34 | 22.59% | 25.07% | 17.43% | 24.55% |
| 35-44 | 34.55% | 34.31% | 36.85% | 38.19% |
| 45-59 | 42.63% | 40.62% | 45.72% | 37.26% |
| over 59 | - | - | 3.91% | 0.35% |
| Proportion receiving a pension | 3.68% | 3.14% | 1.76% | 1.26% |

Source: SOEP, 2005.

Table 3: Employment Rates - Single Households

| | Poland | | | Germany | | |
|-----------------------------|--------|-------|-------|---------|-------|-------|
| | All | Urban | Rural | All | West | East |
| All Singles | 56.10 | 54.41 | 60.03 | 77.72 | 80.15 | 67.17 |
| Male Singles | 59.68 | 56.89 | 64.27 | 81.37 | 83.77 | 71.75 |
| Female Singles | 53.48 | 52.91 | 55.25 | 74.29 | 76.86 | 62.26 |
| Singles without children | 56.06 | 54.15 | 60.32 | 84.4 | 82.26 | 71.91 |
| Singles with children | 56.30 | 55.67 | 58.11 | 62.85 | 67.76 | 45.93 |
| Singles with children: 0-3 | 44.43 | 45.13 | 42.56 | 42.7 | 43.44 | 41.15 |
| Singles with children: 4-16 | 58.60 | 57.67 | 61.31 | 64.93 | 74.9 | 47.4 |

Source: For Germany: SOEP, wave 2005. For Poland: BBGD, 2005.

Table 4: Employment Rates of Men in Couple Households: Poland and Germany

| | Poland | | | Germany | | |
|---------------------|--------|-------|-------|---------|-------|-------|
| | All | Urban | Rural | All | West | East |
| All | 76.20 | 73.88 | 80.07 | 87.6 | 88.66 | 82.66 |
| No children | 64.89 | 63.44 | 68.05 | 85.21 | 86.43 | 80.16 |
| With children | 84.56 | 83.00 | 86.70 | 89.99 | 90.78 | 85.76 |
| With children: 0-3 | 88.77 | 88.70 | 88.88 | 92.32 | 93.64 | 84.69 |
| With children: 4-6 | 86.38 | 85.22 | 87.95 | 90.9 | 91.05 | 90.09 |
| With children: 7-16 | 82.02 | 79.58 | 85.33 | 88.62 | 89.39 | 84.59 |

Source: For Germany: SOEP, wave 2005. For Poland: BBGD, 2005.

Table 5: Employment Rates of Women in Couple Households: Poland and Germany

| | Poland | | | Germany | | |
|---------------------|--------|-------|-------|---------|-------|-------|
| | All | Urban | Rural | All | West | East |
| All | 57.37 | 54.78 | 61.67 | 70.03 | 69.25 | 73.71 |
| No children | 52.76 | 50.60 | 57.28 | 74.11 | 74.53 | 72.32 |
| With children | 61.16 | 58.79 | 64.46 | 65.22 | 63.26 | 75.65 |
| With children: 0-3 | 46.25 | 44.24 | 49.31 | 37.94 | 37.15 | 42.76 |
| With children: 4-6 | 64.26 | 63.54 | 65.22 | 74.68 | 72.55 | 85.4 |
| With children: 7-16 | 66.33 | 63.59 | 70.02 | 74.07 | 71.96 | 84.83 |

Source: For Germany: SOEP, wave 2005. For Poland: BBGD, 2005.

Table 6: Employment Status of Couple Households - Germany

| | All | No child | Child | Child: 0-3 | Child: 4 - 6 | Child: 7 - 16 |
|---------------------|-------|----------|-------|---------------|-----------------|------------------|
| Two-earner | 64.52 | 68.78 | 60.17 | 36.91 | 67.33 | 67.5 |
| Single earner man | 23.86 | 17.78 | 30.06 | 56.02 | 22.94 | 21.56 |
| Single earner woman | 7.44 | 9.03 | 5.82 | 3.86 | 5.62 | 6.75 |
| No-earner | 4.18 | 4.41 | 3.94 | 3.22 | 4.11 | 4.19 |

Source: SOEP, wave 2005.

Table 7: Employment Status of Couple Households - Poland

| | All | No child | Child | Child: 0-3 | Child: 4 - 6 | Child: 7 - 16 |
|---------------------|-------|----------|-------|---------------|-----------------|------------------|
| Two-earner | 47.56 | 40.98 | 52.42 | 40.46 | 56.57 | 56.61 |
| Single earner man | 28.64 | 23.91 | 32.14 | 48.31 | 29.81 | 25.41 |
| Single earner woman | 10.67 | 14.48 | 7.86 | 3.7 | 7.25 | 9.97 |
| No-earner | 13.13 | 20.63 | 7.59 | 7.53 | 6.36 | 8.01 |

Source: BBGD, 2005.

Table 8: Employment rates, Poland, excluding families with individuals receiving social security pensions

| | All | Urban | Rural | Single family HH |
|--------------------------------------|-------|-------|-------|------------------|
| Singles: | | | | |
| All | 65.72 | 64.83 | 67.71 | 70.54 |
| Male singles | 67.04 | 64.45 | 71.28 | 75.04 |
| Female Singles | 64.65 | 65.09 | 63.32 | 68.62 |
| Singles without children under 17 | 67.10 | 66.25 | 68.93 | 74.04 |
| Singles with children under 17 | 59.39 | 58.89 | 60.82 | 59.85 |
| Singles with children: youngest 0-3 | 44.82 | 45.34 | 43.43 | 36.11 |
| Singles with children: youngest 4-16 | 62.45 | 61.68 | 64.68 | 63.26 |
| Men in couples: | | | | |
| All | 88.24 | 87.18 | 89.92 | 89.29 |
| Couples without children under 17 | 86.16 | 85.40 | 87.88 | 88.04 |
| Couples with children under 17 | 89.17 | 88.14 | 90.57 | 89.70 |
| Couples with children: 0-3 | 90.17 | 90.33 | 89.94 | 90.71 |
| Couples with children: 4-6 | 88.86 | 87.86 | 90.21 | 89.47 |
| Couples with children: 7-16 | 88.75 | 87.05 | 91.02 | 89.26 |
| Women in couples: | | | | |
| All | 66.31 | 65.13 | 68.21 | 65.78 |
| Couples without children under 17 | 73.45 | 72.47 | 75.71 | 75.30 |
| Couples with children under 17 | 63.08 | 61.16 | 65.75 | 62.59 |
| Couples with children: 0-3 | 46.55 | 44.73 | 49.31 | 44.85 |
| Couples with children: 4-6 | 65.22 | 64.28 | 66.50 | 64.79 |
| Couples with children: 7-16 | 70.16 | 68.26 | 72.72 | 70.51 |

Source: For Germany: SOEP, wave 2005. For Poland: BBGD, 2005.

Table 9: Employment status of couples - families without pension recipients - Poland

| | All | No child | Child | Child: 0-3 | Child: 4 - 6 | Child: 7 - 16 |
|---------------------|-------|----------|-------|---------------|-----------------|------------------|
| Two-earner | 58.62 | 64.3 | 56.09 | 41.17 | 58.85 | 62.96 |
| Single earner man | 29.62 | 21.85 | 33.08 | 49 | 30.01 | 25.78 |
| Single earner woman | 6.7 | 8.64 | 5.84 | 3.31 | 5.86 | 7.16 |
| No-earner | 5.06 | 5.21 | 5 | 6.52 | 5.28 | 4.09 |

Source: SOEP, wave 2005.

Table 10: Replacement ratios for Germany and Poland, 2005

| | Single NK | Single WK | FE - man | FE - woman | SE - Man | SE - Woman |
|-----------------------|-----------|-----------|----------|------------|----------|------------|
| Germany, 2005 system: | | | | | | |
| 10% | 0.510 | 0.612 | 0.101 | 0.140 | 0.413 | 0.535 |
| 50% | 0.680 | 0.833 | 0.494 | 0.609 | 0.557 | 0.684 |
| 90% | 0.806 | 0.916 | 0.810 | 0.872 | 0.706 | 0.817 |
| Mean | 0.664 | 0.803 | 0.475 | 0.561 | 0.556 | 0.678 |
| Poland, 2005 system: | | | | | | |
| 10% | 0.000 | 0.201 | 0.002 | 0.022 | 0.335 | 0.493 |
| 50% | 0.000 | 0.428 | 0.166 | 0.268 | 0.515 | 0.648 |
| 90% | 0.499 | 0.709 | 0.513 | 0.721 | 0.693 | 0.782 |
| Mean | 0.113 | 0.442 | 0.214 | 0.324 | 0.511 | 0.641 |

Source: STSM and SIMPL micro-simulation models, on GSOEP and BBGD 2005.

Table 11: Effects of hypothetical SA reforms on replacement ratios in Poland

| | Single NK | Single WK | FE - man | FE - woman | SE - Man | SE - Woman |
|-------------|-----------|-----------|----------|------------|----------|------------|
| Reform I: | | | | | | |
| 10% | 0.000 | 0.210 | 0.012 | 0.027 | 0.337 | 0.495 |
| 50% | 0.019 | 0.438 | 0.203 | 0.313 | 0.520 | 0.650 |
| 90% | 0.501 | 0.711 | 0.537 | 0.724 | 0.698 | 0.783 |
| Mean | 0.123 | 0.450 | 0.240 | 0.349 | 0.515 | 0.643 |
| Reform II: | | | | | | |
| 10% | 0.000 | 0.217 | 0.013 | 0.028 | 0.345 | 0.498 |
| 50% | 0.025 | 0.506 | 0.260 | 0.444 | 0.534 | 0.658 |
| 90% | 0.577 | 0.806 | 0.916 | 1.000 | 0.744 | 0.806 |
| Mean | 0.161 | 0.508 | 0.358 | 0.455 | 0.538 | 0.655 |
| Reform III: | | | | | | |
| 10% | 0.000 | 0.253 | 0.084 | 0.148 | 0.368 | 0.505 |
| 50% | 0.103 | 0.540 | 0.559 | 0.677 | 0.552 | 0.664 |
| 90% | 0.601 | 0.815 | 1.000 | 1.000 | 0.763 | 0.811 |
| Mean | 0.211 | 0.537 | 0.547 | 0.638 | 0.557 | 0.662 |

Source: SIMPL micro-simulation model, on BBGD 2005.

Table 12: Labour Supply Response in Percentage Points: Single Households

| Reform: | Women | | | Men | | |
|----------------------------|-------|-------|-------|-------|-------|-------|
| | I | II | III | I | II | III |
| All | -0.47 | -2.97 | -5.55 | -0.19 | -1.05 | -1.60 |
| Country | -0.43 | -2.76 | -4.88 | -0.16 | -0.90 | -1.41 |
| City | -0.49 | -3.05 | -5.80 | -0.20 | -1.14 | -1.72 |
| Medium/Low Education | -0.83 | -5.26 | -7.32 | -0.21 | -1.34 | -1.83 |
| High Education | -0.26 | -1.63 | -4.52 | -0.15 | -0.66 | -1.31 |
| Household without children | -0.30 | -1.40 | -4.19 | -0.18 | -0.96 | -1.53 |
| Household with children | -0.71 | -5.17 | -7.46 | -0.24 | -2.28 | -2.62 |

Source: BBGD, 2005.

Table 13: Labour Supply Response in Percentage Points: Couple Households

| Reform: | Women | | | Men | | |
|----------------------------|-------|-------|-------|-------|-------|-------|
| | I | II | III | I | II | III |
| All | -0.16 | -1.38 | -2.71 | -0.17 | -1.75 | -3.22 |
| Country | -0.23 | -1.94 | -3.93 | -0.25 | -2.58 | -4.80 |
| City | -0.12 | -0.99 | -1.88 | -0.13 | -1.24 | -2.22 |
| Medium/Low Education | -0.25 | -2.25 | -3.87 | -0.25 | -2.61 | -4.42 |
| High Education | -0.09 | -0.72 | -1.83 | -0.07 | -0.61 | -1.59 |
| Household without children | -0.06 | -0.33 | -1.04 | -0.04 | -0.27 | -0.90 |
| Household with children | -0.19 | -1.68 | -3.19 | -0.21 | -2.17 | -3.87 |

Source: BBGD, 2005.

Table 14: Labour Supply Response in %: Single Households

| Reform: | Women | | | Men | | |
|----------------------------|-------|--------|--------|-------|-------|-------|
| | I | II | III | I | II | III |
| All | -0.93 | -6.12 | -10.19 | -0.32 | -1.85 | -2.72 |
| Country | -0.86 | -5.85 | -9.30 | -0.27 | -1.52 | -2.31 |
| City | -0.96 | -6.22 | -10.53 | -0.36 | -2.06 | -2.97 |
| Medium/Low Education | -1.85 | -12.32 | -16.42 | -0.40 | -2.55 | -3.40 |
| High Education | -0.40 | -2.52 | -6.57 | -0.22 | -0.96 | -1.84 |
| Household without children | -0.60 | -2.81 | -7.23 | -0.32 | -1.71 | -2.60 |
| Household with children | -1.39 | -10.79 | -14.36 | -0.38 | -3.76 | -4.24 |

Source: BBGD, 2005.

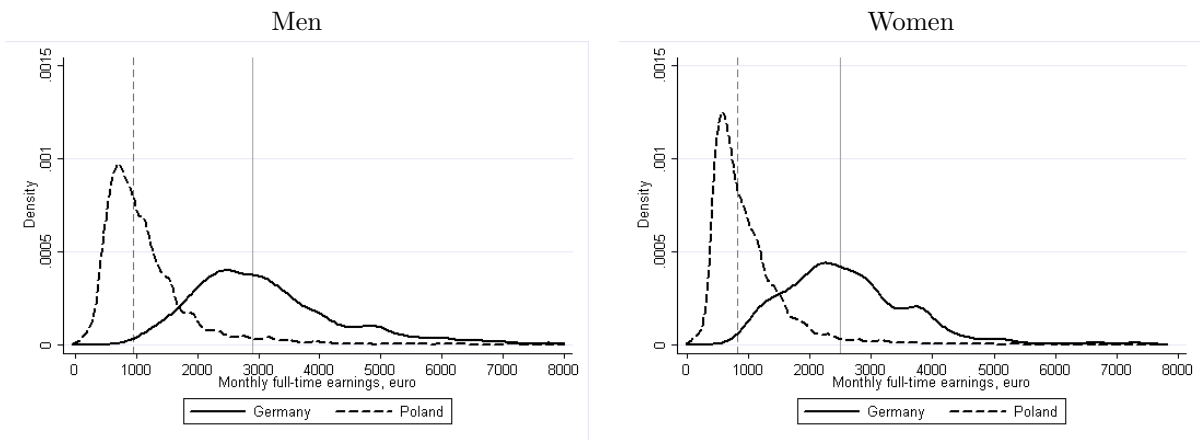
Table 15: Labour Supply Response in %: Couple Households

| Reform: | Women | | | Men | | |
|----------------------------|-------|-------|-------|-------|-------|-------|
| | I | II | III | I | II | III |
| All | -0.30 | -2.63 | -4.77 | -0.20 | -2.04 | -3.73 |
| Country | -0.41 | -3.72 | -6.86 | -0.29 | -3.00 | -5.54 |
| City | -0.21 | -1.89 | -3.36 | -0.15 | -1.44 | -2.60 |
| Medium/Low Education | -0.51 | -4.70 | -7.61 | -0.30 | -3.07 | -5.19 |
| High Education | -0.13 | -1.06 | -2.62 | -0.08 | -0.67 | -1.76 |
| Household without children | -0.11 | -0.59 | -1.78 | -0.05 | -0.33 | -1.11 |
| Household with children | -0.35 | -3.22 | -5.64 | -0.25 | -2.53 | -4.47 |

Source: BBGD, 2005.

Figures

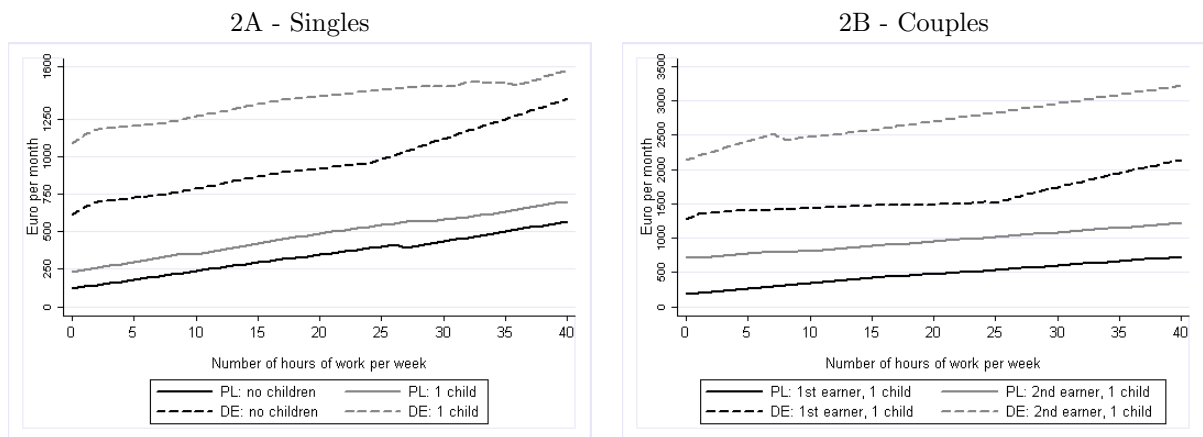
Figure 1: Gross individual full-time earnings in Germany and Poland, 2005



Note: Kernel densities of monthly full-time wages for men and women aged 25-59. For Poland wages presented in PPP adjusted euro (see footnote 3). Median wages presented as vertical grey lines. Truncated at 8000 euro.

Source: Based on BBGD-2005 and GSOEP-2005.

Figure 2: Budget constraints for stylised households: Germany and Poland, 2005



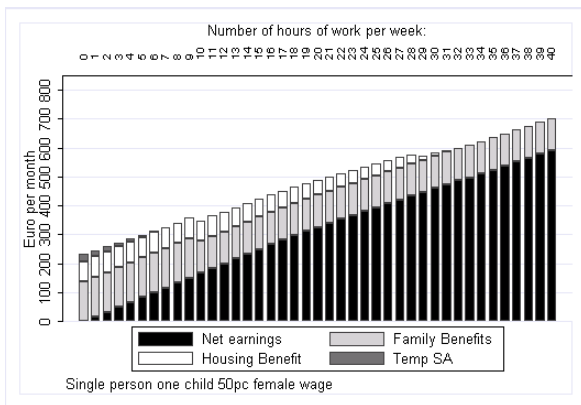
Note: For Poland values presented in PPP adjusted euro (see footnote 3) Polish budget constraints drafted assuming that only centrally guaranteed amounts are paid out.

Source: Authors' calculations using the STSM and SIMPL micro-simulation models.

Figure 3: Components of disposable income in Poland - various SA scenarios, 2005

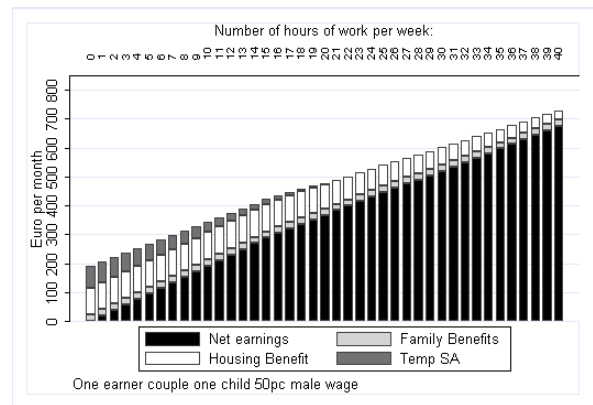
Single person with one child

3A

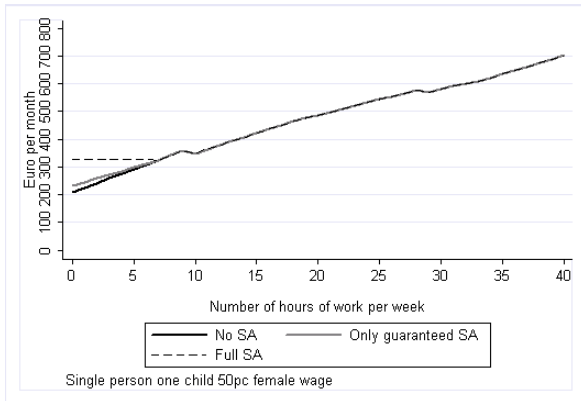


One earner couple with one child

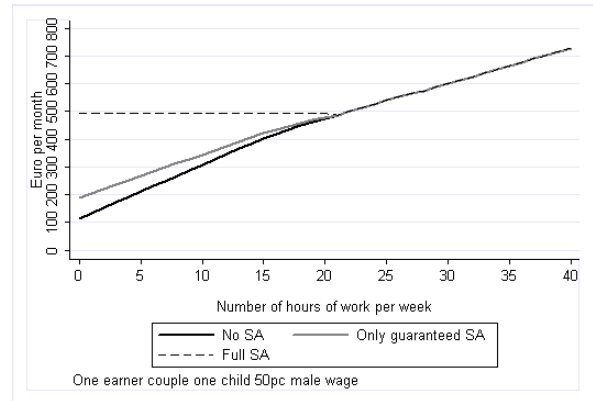
3B



3C



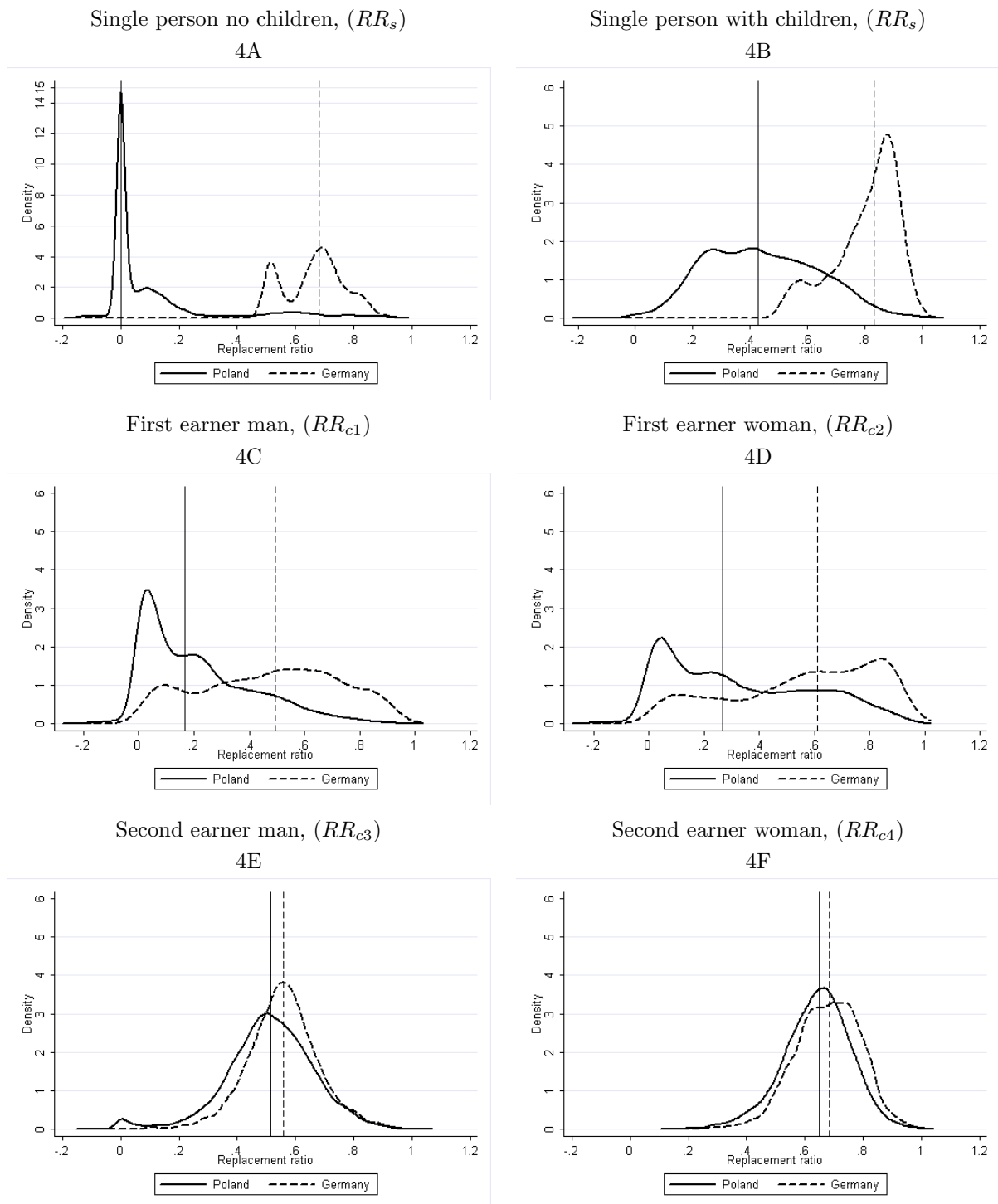
3D



Note: Values presented in PPP adjusted euro (see footnote 3).

Source: Authors' calculations using the SIMPL micro-simulation model.

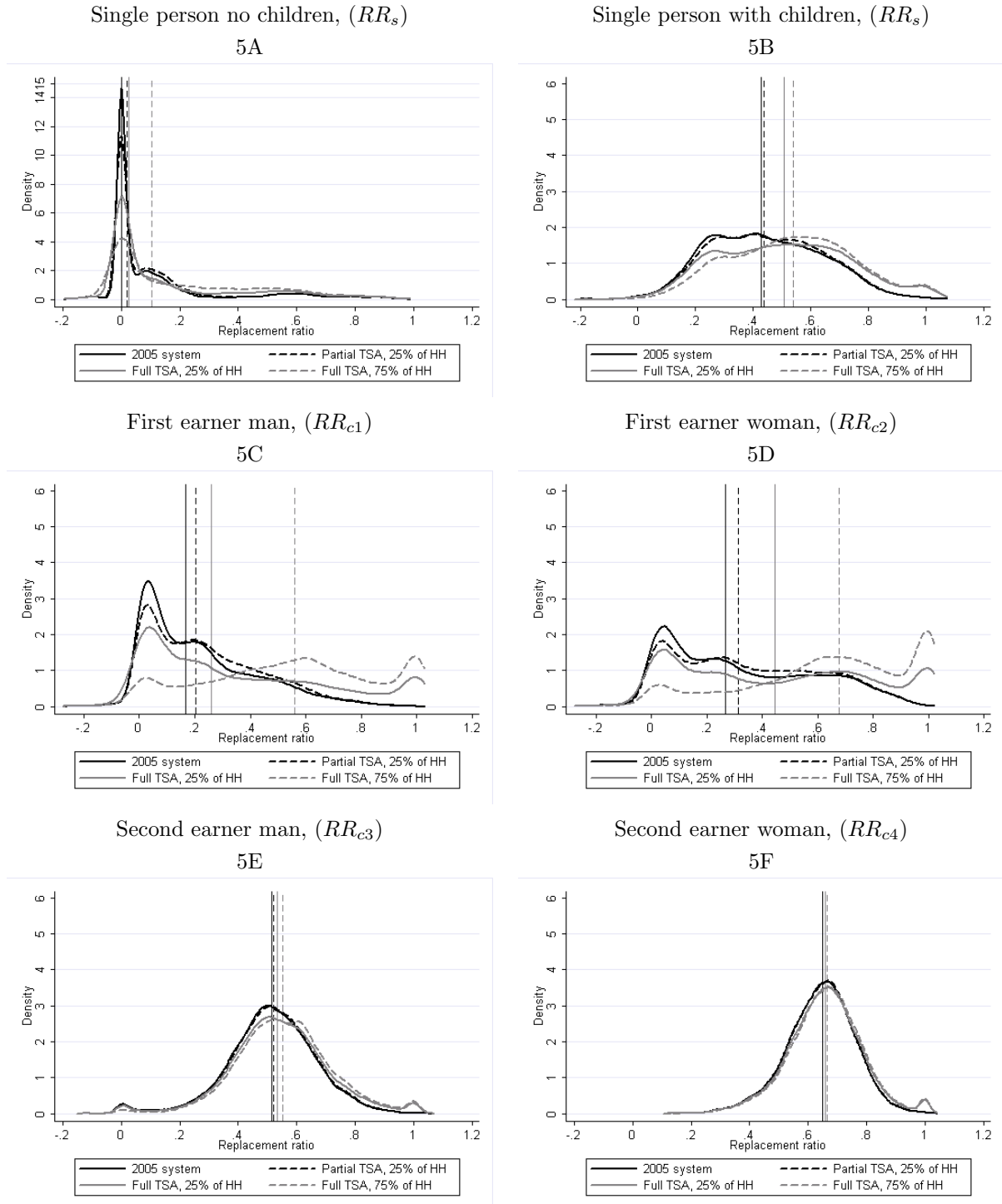
Figure 4: Replacement ratios by family type and partner's employment status, 2005



Note: Replacement ratios computed according to formulas 1-5. Vertical lines represent respective median RRs.

Source: Authors' calculations using the SIMPL and STSM micro-simulation models.

Figure 5: Effects of SA reforms on replacement ratios by family type and partner's employment status, 2005



Note: Replacement ratios computed according to formulas 1-5. Vertical lines represent respective median RRs. See text for details of reforms.

Source: Authors' calculations using the SIMPL micro-simulation model.

Appendix - results of labour supply estimation

Table 16: Labour supply estimation: singles

| | Single Women | | Single Men | |
|-----------------------|--------------|------------|-------------|------------|
| | Coefficient | Std. Error | Coefficient | Std. Error |
| Income Difference | 3.34 | 0.16 | 0.97 | 0.11 |
| High education | 0.21 | 0.08 | 0.46 | 0.09 |
| Town | -0.20 | 0.08 | -0.41 | 0.08 |
| Age | 0.17 | 0.03 | 0.01 | 0.04 |
| Age ² /100 | -0.24 | 0.04 | -0.05 | 0.05 |
| Child younger 3 | -1.28 | 0.19 | 0.96 | 0.43 |
| Child between 3 and 6 | -0.53 | 0.13 | 0.83 | 0.38 |
| Constant | -4.69 | 0.65 | -0.03 | 0.70 |
| Observations | 4691 | | 3528 | |

Source: BBGD, 2005.

Table 17: Labour supply estimation: couples with one flexible spouse

| | Woman flexible | | Man flexible | |
|-----------------------------|----------------|------------|--------------|------------|
| | Coefficient | Std. Error | Coefficient | Std. Error |
| Income Difference | 1.72 | 0.12 | 0.79 | 0.14 |
| High education Man | -0.09 | 0.08 | 0.41 | 0.15 |
| High education Woman | 0.20 | 0.09 | 0.04 | 0.13 |
| Town | -0.97 | 0.07 | -0.58 | 0.12 |
| Age Man | 0.15 | 0.05 | 0.07 | 0.09 |
| Age Man ² /100 | -0.15 | 0.05 | -0.07 | 0.10 |
| Age Woman | 0.10 | 0.06 | 0.05 | 0.07 |
| Age Woman ² /100 | -0.17 | 0.07 | -0.12 | 0.07 |
| Child younger 3 | -0.91 | 0.14 | -0.23 | 0.25 |
| Child between 3 and 6 | -0.48 | 0.13 | 0.13 | 0.25 |
| Constant | -4.57 | 0.86 | -0.61 | 1.30 |
| Observations | 4927 | | 2730 | |

Notes: Labour market participation has been estimated with logit model.

Source: BBGD, 2005.

Table 18: Labour supply estimation: couples with two flexible spouses

| | Coefficient | Standard Error |
|------------------------|-------------|----------------|
| Income | 4.2228 | 0.9544 |
| Income ² | 0.1351 | 0.0265 |
| Income* | | |
| High education Man | 0.1536 | 0.0555 |
| High education Woman | -0.0433 | 0.0634 |
| Town | -0.4585 | 0.1142 |
| Age Man | -0.1503 | 0.0413 |
| Age Man ² | 0.0017 | 0.0005 |
| Age Woman | 0.0099 | 0.0446 |
| Age Woman ² | -0.0002 | 0.0005 |
| Part time work Woman | 2.1549 | 0.1660 |
| Part time work Man | 0.6598 | 0.1339 |
| Work Woman | -5.5843 | 0.9297 |
| Work Woman* | | |
| High education Woman | 1.0660 | 0.0726 |
| Town | 0.4894 | 0.1055 |
| Child younger 3 | -1.1846 | 0.0827 |
| Child between 3 and 6 | -0.4384 | 0.0708 |
| Age Woman | 0.2558 | 0.0474 |
| Age Woman ² | -0.0031 | 0.0006 |
| Work Man | -4.0638 | 1.2064 |
| Work Man* | | |
| High education Man | 0.2937 | 0.0987 |
| Town | 0.3870 | 0.1355 |
| Child younger 3 | 0.1485 | 0.1233 |
| Child between 3 and 6 | 0.1364 | 0.1062 |
| Age Man | 0.2556 | 0.0585 |
| Age Man ² | -0.0032 | 0.0007 |
| Work Man* Work Woman | 0.4069 | 0.1047 |
| Income* Work Woman | -0.3654 | 0.0595 |
| Income* Work Man | -0.3472 | 0.0722 |
| Observations | 9540 | |

Notes: Labour market participation has been estimated with conditional logit model.

Source: BBGD, 2005.