

Childbearing and Dual Joblessness in Europe: A Comparison of Eleven Countries

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Childbearing and coupled joblessness: A comparison of eleven European countries ¹

Abstract

Household joblessness is associated with major welfare deficits in families with children. However, basically no research has been done on the effects of childbearing on household joblessness. In this article, we analysed the effects of childbearing on household joblessness of couples (dual joblessness) in eleven European countries. We constructed a stylised theoretical model according in which mothers' labour supply is expected to fall immediately after childbirth and increase again when the child grows, while fathers' labour supply is not expected to decrease due to childbearing. Based on this framework, we made hypotheses of the effects of childbearing on dual joblessness and of how these effects depend on the age of the child. We also made hypotheses of how public support for the employment of mothers, employment protection legislation, and financial support for families with children would shape these effects. Using data from the European Community Household Panel, we analysed the effects of childbearing on dual joblessness with fixed-effects logit models. The results show cross-national differences in these effects. In Belgium, France, Ireland, and the United Kingdom, childbearing increases the risk of dual joblessness, but this effect decreases as the child grows. In Austria and Portugal, childbearing also increases the risk of dual joblessness, but this effect does not depend on the age of the child. In Denmark and Finland, the of dual joblessness decreases rapidly as the child grows. In Italy and Spain, childbearing implies a decrease in dual joblessness that does not depend on the age of the child. Germany is the clearest exception: there the risk of dual joblessness increases by the age of the child. We analysed the institutional correlates of these effects. The decrease in the risk of dual joblessness after childbirth is faster in countries with stronger policies supporting the employment of mothers. On the other hand, in countries where employment protection laws

are stricter the effects of childbearing are weaker, but the effect decreases slower as the child grows up. We discuss these findings in the light of the literature on the welfare implications of childbearing and children's welfare in Europe.

Keywords: childbearing, dual joblessness, Europe, comparative research, panel data, fixed effects models

Childbearing and coupled joblessness: A comparison of eleven European countries

Labour market attachment of parents is closely linked to children's economic wellbeing, and its variation explains much of the trends and cross-national differences in child poverty (Chen and Corak 2008; Heuveline and Weinshenker 2008). Children living in households with no employed adults are particularly vulnerable. According to estimates by Stephen Nickell (2004: C3), over half of poor children in Britain lived in such a household at the turn of the millennium, and three children in four living in jobless households were poor. Living in a jobless household as a child can have long-term impacts, as shown by John Ermisch, Marco Francesconi and David Pevalin (2004). Thus, it is not surprising that household worklessness gains serious attention in national and international policy circles (e.g. OECD 2004a; Social Exclusion Task Force 2007; UNICEF 2007).

What is more surprising is that—to our knowledge—no studies have focused on household joblessness and children (for reviews on household joblessness, OECD 1998; De Graaf and Ultee 2000; Gregg and Wadsworth 2001). Previous studies that have compared household joblessness between families with and without children do not provide clear answers to whether the differences found result from children affecting the risk of dual joblessness or other factors. Neither have they analysed differences in the risk of household joblessness by the age of the child, or investigated the institutional factors affecting joblessness in families with children.

The general objective of this study was to analyse whether childbearing affects the risk of household joblessness among couples ('coupled joblessness' or 'dual joblessness') in eleven European countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Portugal, Spain, and the United Kingdom). If childbearing increases the risk of coupled

joblessness, children and their families may experience elevated risks of poverty net of overall labour market performance or family demographic patterns. Most European children are born into and lead their childhoods in families with two parents (Andersson 2002). Whereas employment of single parents has received wide attention, there is little research on couples with children. However, household joblessness and related poverty are not restricted to single parent households (see Table III below; also, De Graaf and Ultee 2000; Iacovou 2003; Härkönen 2007).

We asked two main questions. Firstly, does childbearing affect the risk of coupled joblessness? Research on the “family-work nexus” has identified several ways in which the combination of work and family responsibilities can negatively affect either or both spheres (e.g., Gornick and Meyers 2003, 2004; Jacobs and Gerson 2004). Most research on the labour market effects of family life has focused on individual workers, particularly women. Here we analyse whether having children can weaken the labour market attachment of the whole family.

Secondly, we asked whether there is cross-national variation in the links between childbearing and coupled joblessness, and whether these are associated with differences in institutional configurations in our countries. The literature on welfare regimes (Esping-Andersen 1999; Gornick and Meyers 2004) and the cross-national variation in the employment of mothers suggests such variance. We focus on three institutional features, which we expect to shape families’ labour market attachment patterns, namely employment protection, public support for the employment of mothers, and family cash transfers. Should these features shape the association between childbearing and coupled joblessness, they can also affect the well-being of families with children.

We use a total sample of 17,652 couples from the European Community Household Panel and fixed-effects logit models to estimate the effects of childbearing on the risk of coupled joblessness. Our models take into account changes in the effects as children grow up. To look further into the cross-national variation in the effects, we examine how they interact with indicators of the three institutional features. Before presenting the data, the models, and the results, we briefly introduce a stylised theoretical framework to orient the empirical analyses.

The effect of childbearing on dual joblessness

Women have more responsibility for childcare than men do in all Western countries, due to a combination of biological, economic, and—in particular—culturally embedded gender practices. Therefore, it is not surprising to find a large body of research showing that motherhood reduces labour supply. The reduction can be seen both in the employment and hours responses to motherhood and is found across a wide range of countries (e.g., Killingsworth and Heckman 1987; Bernhardt 1993). The effects of childbearing on maternal employment can be aggravated by negative evaluations held by employers (Correll, Benard and Paik 2007).

Men, on the other hand, do not suffer such parenthood penalties (e.g., Loh 1996; Angrist and Evans 1998). Some studies have even reported fatherhood premiums (e.g., Lundberg and Rose 2002), presumably as a response to increased financial needs of the family. Through a decrease in female labour supply and a possible increase in male labour supply, childbirth often implies a sharper (traditional) division of paid and unpaid tasks within the family (Becker 1981). Single-earner couples have a clearly higher risk of becoming dually jobless

than dual-earner ones do (Härkönen 2007). Therefore, although fatherhood may imply an increase in his labour supply, we make the following hypothesis:

Hypothesis 1: Childbearing is followed by an increase in the risk of coupled joblessness.

The reduction in female labour supply and the associated family division of labour after childbirth can be short-lived. As children grow, their caring needs are increasingly met by other adults. As will be discussed below, institutional features regulate the time parents are and are expected to be exclusive caretakers for their children. Despite such variation, mothers of older children are increasingly likely to work in all European countries (e.g. Gornick, Meyers and Ross 1998). This generally means a strengthening of the couple's attachment to the labour market. Thus, we expect that

Hypothesis 2: The risk of coupled joblessness decreases by the age of the youngest child.

These effects need not be universal but can vary between countries with different institutional configurations. We thus next discuss institutional factors that can shape the effects of childbearing on dual joblessness.

Institutional correlates and cross-national variation

Supported by maternal leave legislation (see Table AI in Appendix), most European mothers remain out of work directly after childbirth. Therefore, institutional factors should mainly affect whether and how fast mothers enter employment after childbirth. Paternal employment, on the other hand, depends less on the age of the child. Thus, the effects of institutions that regulate fathers' employment should not vary by the age of the (youngest) child. Following

these reasonings, we expect that some institutions shape the effects of childbearing on coupled joblessness through the ‘initial effect’ (by mainly affecting the labour market attachment of the father) whereas others work through the ‘age of the youngest child effect’ (by mainly affecting the employment entry of the mother).

We discuss the role of three institutions: public support for the employment of mothers through reduction of child care obligations, financial support for families with children, and employment protection legislation. These institutions can shape coupled labour market attachment by promoting and protecting the employment of parents and by providing non-work based economic support. Table I shows descriptive information on measures of these institutions in our eleven countries.

TABLE I

Janet Gornick, Marcia Meyers and Katherine Ross (1997; also Gornick, Meyers and Ross 1998) identified parental leave, childcare, and school schedules as key policies that decrease mothers’ childcare obligations and support their employment. Since the widest variation in maternal employment is among mothers with small children (OECD 2004b), we limit the discussion to the effects of childcare and parental leave policies. Micro-level and comparative research has documented how affordable high-quality childcare enforces the employment of mothers with small children (e.g., Blau and Robins 1991; Gornick, Meyers and Ross 1998; Uunk, Kalmijn and Muffels 2005). Maternal leave is another policy of interest. Although it can maintain the gender wage gap in the long-run, the empirical literature has stressed the positive effects of maternal leaves on female employment through job return guarantees (Ruhm 1998; Jaumotte 2003). In practice, there are several policies regulating how children

are cared (Gornick, Meyers and Ross 1997). To capture this variety, we follow the example of Gornick, Meyers and Ross and construct a single index of such policies (see Appendix I for its construction). We make the following hypothesis:

Hypothesis 3: After childbirth, the risk of coupled joblessness decreases faster in countries with strong public policies reducing mothers' childcare obligations.

Financial benefits targeted at reducing the costs of children provide families with unearned incomes through cash benefits, tax allowances, exemptions, subsidies, and services in kind (Bradshaw and Finch 2002). Following economic theory, we expect such benefits to reduce family labour supply and thus increase the risk of dual joblessness. Because female labour supply is more elastic than male supply (e.g., Heckman 1993), it is likely that that this effect operates mainly by affecting the employment of mothers (Jaumotte 2003). Thus, we expect that

Hypothesis 4: After childbirth, the risk of coupled joblessness decreases slower in countries with more financial support for families with children.

Again, we use a single indicator that combines direct benefits, tax allowances, exemptions from charges, and various subsidies to measure the generosity of these benefits (from Bradshaw and Finch 2002: 169). This indicator measures the value of the 'child support package' after housing benefits, as share of average earnings.²

Employment protection legislation (EPL) offers employment security to workers covered by EPL rules. However, the downside of strict EPL is higher total labour costs, a lower rate of

job creation, and longer unemployment durations (Bertola 1990). We expect strict EPL to shape the effects of childbearing on coupled joblessness through two channels. Firstly, EPL strengthens the employment security of employed parents. Since fathers are more likely than mothers to be employed around childbirth, we expect that

Hypothesis 5: The initial increase of coupled joblessness after childbirth is smaller in countries with stricter employment protection legislation.

On the other hand, strict EPL can hamper entry into employment. This can especially hurt mothers who are out of the labour force. Furthermore, by making employers more selective in their hiring decisions, EPL may make employers increasingly reluctant to hire mothers with small children, if they are thought to be less productive or flexible (cf. Correll, Benard and Paik 2007). Therefore, we expect that

Hypothesis 6: After childbirth, the risk of coupled joblessness decreases slower in countries with stricter employment protection legislation.

As a measure of EPL strictness, we use data from the OECD (2004c: 117).

Summing up our hypotheses, we expect that childbearing is followed by an increase in the risk of coupled joblessness (Hypothesis 1), as the mother is likely stay at home and the labour market attachment of the couple depends on the employment of the father. This effect is weaker in countries with stricter EPL (Hypothesis 5), which protects the employment of father. We also expect that as the child grows, mothers are increasingly likely to be employed, and thus the risk of coupled joblessness decreases (Hypothesis 2). This recovery will be faster

in countries with strong policies that reduce mothers' childcare obligations (Hypothesis 3), but slower in countries with more generous financial support for families with children (Hypothesis 4) and stricter employment protection legislation (Hypothesis 6).

Data and models

Data

We used data from the European Community Household Panel (ECHP), an eight-wave (1994 to 2001) household panel survey from fifteen European Union member states (Eurostat 2003). Due to data restrictions, we excluded four of these countries: the Swedish data are not panel data, the Dutch data lack our dependent variable, the Luxembourgish data lack an important control variable (health) and a macro-level variable (EPL), and the Greek data have zero cells. We thus analysed data from Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Portugal, Spain, and the United Kingdom.

The ECHP includes information on both partners. We formed a panel of heterosexual couples in which the male partner was 19 to 48 years and the female partner 19 to 45 years old. Few women above the age of 45 have children, and on average, the male was three years older than his partner. This restriction excluded most of those who had retired. We also excluded students from the sample, which reduced the number of children born to jobless parents (especially in the Nordic countries), but was necessary due to the different labour market behaviour of students.

After excluding 86 cases with missing values, the final sample had 17,652 couples. The data were structured into an unbalanced panel with couple-months as the unit of analysis. The maximum number of months is 84.

Variables

The dependent variable is a binary measure indicating whether the couple was dually jobless (neither partner was working) at a specific month. It was constructed from the monthly main activity variable, reported retrospectively for the previous year. Therefore, it was linked from wave $t+1$, and the sample covers the years 1994 to 2000.

This self-defined main activity variable poses an important caveat in that it does not distinguish parental leaves with job return guarantees and possibly high replacement rates from other forms of non-employment. Neither are there any evident means of determining whether one is on parental leave or not.

Despite this limitation, we believe that having two jobless parents poses a risk for the child. Firstly, as one can see from Table III below, jobless couples with children have elevated—in some countries critical—poverty rates. The same holds for children under the age of one (not shown). Therefore, coupled joblessness poses a serious threat to economic well-being even in countries with developed parental leave policies. Secondly, joblessness itself can cause psychological distress (e.g. Clarke 2003). Furthermore, joblessness of the partner can have similar effects (ibid.). Such distress can lead to suboptimal parenting practices that may have negative outcomes for children (on the poverty-related literature, see e.g. Mayer 2002). Therefore, coupled joblessness may have negative outcomes regardless of poverty. For example, Ermisch, Francesconi and Pevalin (2004) found negative long-term effects of household joblessness during childhood in Britain.

TABLE II

Household members who were aged 18 years or less and the biological, step, or adopted children of the male partner were defined as children. Parity levels were measured with monthly accuracy. The age of the child is also measured in months (starting from 1). The control variables are: age of the female partner, age of the female partner squared, bad health of the male partner (dummy), bad health of the female partner (dummy), marriage (dummy), the regional male unemployment rate, and the regional female unemployment rate. The control variables were measured annually (and thus do not vary within waves), and linked from wave $t+1$. Educational attainment was excluded, because it varied little across the waves and thus does not enter the fixed effects specifications of the models (see below). Year was excluded since it is collinear with age and the fixed effects. Table II shows descriptive information on the variables.

Models

We were interested in estimating the effect of having a child on the couple's probability of being dually jobless and of how this effect depends on the age of the child. Given the binary dependent variable, logit models are appropriate.

We estimated two kinds of logit regression. Firstly, we were interested in estimating the link between childbearing and dual joblessness in each country. For this purpose, we used data for each country separately. We specified a model, which includes both the number of children and the age of the youngest child. Our model estimates show the effect of childbearing and how this depends on the age of the (youngest) child, as predicted by our second hypothesis. We entered the number of children using two variables, a continuous variable for couples with three children or less and a dummy variable for four children or more (for a similar

specification, Lundberg and Rose 2002). We chose this specification due to the low numbers and arguably selected composition of large families in Europe. We focus on the estimates of the three first children. We also entered the age of the youngest child using two variables: a logarithmic transformation of the age of the youngest child (in months) for children before their seventh birthday and a dummy variable for older children. The dummy variable captures the age at which children in our countries have entered school, while the logarithmic form fit best the widest range of countries. We focus on the estimate of the first seven years. In technical terms, the estimate for the number of children shows how the ‘baseline risk’ (the intercept) of dual joblessness shifts due to childbirth while the estimate for the (logged) age of the youngest child shows how this risk changes across time (cf. Korenman and Neumark 1991). Without the age of the youngest child, the estimate for the number of children would show the effect of childbearing on dual joblessness averaged over the childhood years and not take into account possible changes in this effect.

We used fixed effects (FE) logit regressions to estimate these effects. These models control for time-invariant unobserved factors (such as work-family preferences, ability, and so forth) that correlate with the dependent and independent variables (e.g. Wooldridge 2002). A limitation of these models is that they use only those couples who experienced changes (childbirths) during the follow-up, which leads to smaller sample sizes. Furthermore, FE models do not control for endogeneity. For example, if couples experience or anticipate dual joblessness, they may reconsider or postpone their plans for having children (cf. Easterlin 1975). To reduce such bias, we additionally controlled for the seven variables listed above.³ FE models with unbalanced panels (like in our case) can also yield biased results if attrition is endogenous (Wooldridge 2002: 578-81), which, in our case, should not pose a problem (Härkönen 2007: 60-1). Finally, serial correlation of the errors may compromise consistency

of the estimates. However, since this possibility decreases as the number of time points increases (Wooldridge 2002: 302), our panel with up to 84 months is unlikely to suffer from this inconsistency.

For our second FE logit regression, we pooled the national samples together into one file. We included our measures of the three institutional features (see Table I) into the dataset to test for interactions between them and the number of children (if three or less) and the age of the youngest child (if less than seven years), following Hypotheses 3 to 6. Due to a lack of suitable time-series data, the institutional variables do not vary across time. Therefore, we do not get an estimate of their effects. However, since the interactions do vary across time, we can estimate the institutional correlates of the child effects.

Results

Dual joblessness and poverty in eleven European countries

The two first columns in Table III present the average dual joblessness rates for couples with and without children during the observation period (1994-2000). Naturally, there were changes in these rates across the period, but the difference between couples with and without children remained similar. In most countries, the average dual joblessness rates were low and similar among couples with and without children. In other countries, Germany, Spain, and especially the United Kingdom and Ireland, couples with children have higher rates. Furthermore, couples with small children (less than three years) have higher dual joblessness rates than childless couples, as seen from the third column.

TABLE III

The last column in Table III presents poverty rates of jobless couples with children, defined as incomes 50 per cent below the equalized median household income. In many countries, the poverty rates among jobless couples with children are dramatic. Two thirds of such British and Irish families are poor, and the poverty rate is above 50 per cent also in Belgium, Italy, and Portugal. Also in the other countries, poverty is much more common in jobless couples than in the general population.

The effects of childbearing on dual joblessness

Does childbearing affect the risk of dual joblessness and the welfare risks that follow? To answer this question, we examine the results of the fixed effects logit models in Table IV. To save space, we do not present the estimates of the control variables. Due to neglected heterogeneity (e.g., Wooldridge 2002: 470-2), the estimates cannot be directly compared between countries. However, they do show us the direction of the effects.

TABLE IV

The estimate for number of children (if three or less) is positive and statistically significant in Austria, Belgium, France, Ireland, Portugal, and the United Kingdom. There is no significant effect in Denmark, Finland, and Germany. In Italy and Spain, the estimates are in fact negative. As discussed above, our models allow the effect of childbearing on the risk of dual joblessness to depend on the age of the (youngest) child. In Table IV, the estimate of logged age of the child up to seven years (in months) shows this change. With the exception of Germany, the estimates are negative in each country. They are not statistically significant in Austria, Italy, and Portugal. Elsewhere, the risk of coupled joblessness decreases by the age of the youngest child.

To better illustrate how childbearing affects the risk of coupled joblessness and how this risk changes by the age of the youngest child, we plot these effects in Figures Ia to Id, with the countries grouped into four welfare regimes. The figures show how the estimated (logit) effect of having the first child changes during the first three years of the child's life.

FIGURES Ia to Id

In most countries, the effect of childbearing depends on the age of the youngest child so that the risk of dual joblessness decreases as the child grows older, in support of our second hypothesis. As discussed in the theoretical section, mothers are increasingly likely to take up work as the child grows and thus decrease the couple's risk of dual joblessness.

This pattern is the clearest in Finland and Denmark. In these countries, childbearing does not increase the risk of dual joblessness at any stage. On the contrary, the risk of dual joblessness decreases by the age of the child so that averaged over the years, childbearing in fact decreases the risk of dual joblessness. This we would find from models, which exclude the age of the youngest child (not shown). In France, the initial effect of childbearing is an increase in dual joblessness. This risk gradually decreases as the child grows so that after the first months of the child the estimated effect is negative. In other words, childbirth implies a brief increase in the risk of being dual jobless, but children past their first months decrease this risk. This result supports our first two hypotheses.

We also find a similar pattern of an initial increase and a gradual decline in Belgium and Ireland and to lesser extent in the United Kingdom. In Belgium and the United Kingdom, the

effect remains positive throughout the first three years. In Austria and Portugal, the effect of childbearing is positive and the change in this effect is not statistically significant.

Italy and Spain the effect is negative and rather flat. This may reflect genuine decreases in dual joblessness risks, due to increased labour supply or employers' favourable views of parents. Alternatively, these results can reflect endogenous fertility decisions that our models cannot take into account. Italian and Spanish couples may postpone childbearing until at least the husband has a more or less permanent job to protect the couple from economic hardship.

The German estimates provide the clearest exception to our results. In Germany, having a young child does not seem to affect the risk of dual joblessness, but the risk increases by the age of the child. The reason for this exceptional pattern is not clear.

According to these estimates, it is unlikely that the effect of childbearing on dual joblessness is merely an artefact of a higher risk period during maternity leaves. The duration of paid maternity leaves varies from 14 weeks in Germany and Ireland to 52 weeks in Finland (see Appendix I). In most countries, the decrease in the risk of being dually jobless does not decrease steeply enough to support this argument. The exceptions are Denmark and Finland, and to a lesser extent, France.

Institutional correlates of the effect of childbearing on dual joblessness

In the theoretical section to the paper, we discussed the role of public support for maternal employment, financial benefits targeted at families with children, and employment protection legislation (EPL) in shaping the effects of childbearing on dual joblessness (Hypotheses 3 to 6). Table V presents estimates from a fixed effects logit model on pooled data on all eleven

countries. To examine the institutional correlates, we included interactions between our institutional measures (see Table I), the number of children (if three children or less) and the age of the youngest child (if less than seven years). To save space, we do not present the estimates of the control variables.

TABLE V

The results support our hypotheses rather well. Strict EPL decreases the ‘initial effect’ of childbearing, but flattens the slope of the age of child effect. A possible scenario is that directly after childbirth, strict EPL first protects the male breadwinner against joblessness. However, by making employment entry of mothers more difficult, strict EPL can prolong the duration of the male breadwinner status, and thus increase the period in which couples are at a higher risk of dual joblessness.

As expected, more support for maternal employment is associated with a faster decrease in dual joblessness risk after childbearing: mothers in countries with more support for their employment can return to employment faster after childbirth, and thus decrease the couple’s risk of being dual jobless. The estimate for the interaction between support for maternal employment and the number of children (if three or less) is not statistically significant. As expected, the interaction between financial support for families with children and the number of children is not significant. However, unlike expected, neither is the interaction between financial support and the age of the youngest child. Although a causal interpretation cannot be made, policies supporting the employment of mothers seem to be more important than the financial disincentives created by family benefits.

Conclusions and discussion

Recent research has shown how childbearing in Europe can carry important short- and long-term welfare penalties (Aassve, Mazzucco and Mencarini 2005; Sigle-Rushton and Waldfogel 2007). In this study, we looked into one pathway—dual joblessness of the couple—which can translate childbearing into economic distress. By focusing on labour market exclusion at the household level our study adds to the thriving literature on childbearing effects on the labour supplies of individual men and women.

We analysed the effects of childbearing on dual joblessness in eleven countries, with data from the European Community Household Panel (ECHP). In many countries, dual joblessness rates among couples with children are low and similar to the rates among childless couples. The exceptions are Germany and Spain, and particularly Ireland and the United Kingdom, where couples with children have high rates of dual joblessness. Although dual joblessness is mostly rare, its welfare implications are underlined by the often dramatic poverty rates such couples face.

Our models of the effects of childbearing on dual joblessness took into account changes in these effects as the child grows older and the mediating effects of national institutional configurations. The results reflect both bad news and more positive findings. The bad news is that in many countries, childbearing does increase the risk of dual joblessness. However, a positive result is that this increase is often relatively short-lived.

These patterns vary cross-nationally in ways that correspond to institutional configurations between countries. We found that policies that promote the employment of mothers can

shorten the period of any excess risk of dual joblessness that may follow childbearing, presumably by promoting mothers' employment. We also found somewhat conflicting effects of employment protection legislation. On the one hand, strict employment protection can soften the effects of childbearing on dual joblessness by improving employment security for employed partners (fathers). On the other hand, such policies may lengthen the high-risk period after childbirth, possibly by providing disincentives for hiring mothers. Thus, employment protection both weakens and strengthens the childbearing effect on dual joblessness, albeit through different channels. We did not find that financial support for families with children, our third institutional measure, was associated with the childbearing effects.

Our study is of course not without its limitations. Many of the national samples of the ECHP are of limited size. Furthermore, our best available models, fixed effects logits, cannot rule out fertility decisions that depend on dual joblessness status or its anticipation. Findings showing that experience or anticipation of economic difficulty may postpone childbearing decisions (Easterlin 1975) suggest that our estimates can be downward biased. In other words, childbearing can have stronger unwanted consequences than estimated. This may also explain our results of no or negative effects of childbearing on dual joblessness in some countries. Another limitation of our analyses is that we treated the family as a 'black box' and did not look into the actual dynamics within families. Future research could seek to address these issues, possibly with larger national datasets.

Despite these shortcomings, we believe that our findings are important given the financial distress that follows dual joblessness. One should also keep in mind that coupled joblessness rates were high in many countries, especially among couples with children. If childbearing

increases this risk—even in the short run—this may have long term implications for child and family well-being and development (Ermisch, Francesconi and Pevalin 2004). Our results raise concerns of the difficulties in combining work and family in many European countries and of the welfare implications that may follow. Our results also point to the possibility of alleviating these difficulties through public policies. Promoting mothers' employment is a clear example of such a policy. On the other hand, countries that are weak on such policies and have weak employment protection (such as the United Kingdom) may face the strongest childbearing penalties.

Appendix I: The index for public support for the employment of mothers

Gornick et al.'s (1997) original index captured various public policies that affect employment of mothers of children under school age (cf. OECD 2001 for a different indexation that includes firm's policies). The rationale for the index is that these different policies often substitute each other.

TABLE AI

We constructed a similar index with updated information. The differences are the following. First, due to data availability, we used the starting age of compulsory schooling instead of the share of five-year olds enrolled in preschool. Second, we estimated the importance of tax relief for childcare and childcare guarantees on a 0-1 scale with information from Bettio and Prechal (1998). Third, we measured paternity leave in working days (divided by 10, the maximum). Fourth, we included a measure of the costs of childcare into the index. And fifth, our final scale is different from the original one. Table AI presents the country values of the variables used in the index.

We constructed the index with the following formula:

$$0.5 * \{ [0.5 * (\text{job protection} + (\text{coverage of maternity leaves}/100) * (\text{duration of paid maternity leave}/52) + \text{wage replacement rate} + \text{coverage of maternity leaves}/100 + 0.5 * \text{paternity benefits}/10 + 0.5 * \text{tax relief for child care} + \text{guaranteed child care coverage for kid 0 to 2 years} + \text{per cent kids (0 to 2 years) in childcare} - \text{cost of childcare}/100)] + (0.5 * \text{tax relief for}$$

childcare + guaranteed childcare coverage (3 to school age) + per cent kids (3 to school age)
in childcare + $0.25 \cdot (7 - \text{school starting age}) - \text{cost of childcare}/100$).

Notes

1. The paper is based on Chapter 7 of my doctoral dissertation “Jobless Couples in Europe. Comparative Studies with Longitudinal Data”, defended on 9 November 2007 at the European University Institute. Previous versions were presented at Harvard University, the EPUNET conference in Barcelona (2006), and the RC28 summer meeting in Nijmegen (2006). I thank the participants of these meetings and Jaap Dronkers, Gøsta Esping-Andersen, Andrea Ichino, Christopher Jencks, and Wout Ultee for helpful comments. All remaining errors are mine. Support from the Academy of Finland and the Emil Aaltonen Foundation are acknowledged.
2. We chose this indicator, because housing benefits often constitute an important share of the benefit package for families with children (see discussion in Bradshaw and Finch 2002: Ch 4). We did not use the version of the index that includes childcare costs and benefits, since they are included in the support for maternal employment index.
3. Alternative methods, such as instrumental variables (Angrist and Evans, 1998), lagged endogenous variables instrumental variables (Wooldridge, 2002: 307-9), or difference-in-differences propensity score matching (e.g., Aassve et al., 2005) rely very much on appropriate data or assumptions. The data at hand did not satisfy the data requirements and the assumptions used for these methods are often implausibly strict.

Bibliography

Aassve, A., Mazzuco, S. and Mencarini, L. 2005 'Childbearing and Well-Being: a Comparative Analysis of European Welfare Regimes', *Journal of European Social Policy* 15(4): 283-99.

Andersson, G. 2002 'Children's Experience of Family Disruption and Family Formation: Evidence from 16 FFS Countries', *Demographic Research* 7(7): 343-64.

Angrist, J. D. and Evans, W. N. 1998 'Children and Their Parents' Labor Supply: Evidence from Exogenous Variation in Family Size', *American Economic Review* 88(3): 450-77.

Becker, G. S. 1981 *A Treatise on the Family*, Cambridge (MA): Harvard University Press.

Bernhardt, E. M. 1993 'Fertility and Employment', *European Sociological Review* 9(1): 25-42.

Bertola, G. 1990 'Job Security, Employment, and Wages', *European Economic Review* 34(4): 851-79.

Bettio, F. and Prechal, S. 1998 *Care in Europe*, Luxembourg: Office for Official Publications of the EC.

Blau, D. M. and Robins, P. K. 1991 'Child Care and the Labour Supply of Young Mothers Over Time', *Demography* 28(3): 333-351.

Bradshaw, J. and Finch, N. 2002 *A Comparison of Child Benefit Packages in 22 Countries*, Leeds: Department of Work and Pensions.

Chen, W.-H. and Corak, M. 2008 'Child Poverty and Changes in Child Poverty', *Demography* 45(3): 537-553.

Clark, A.E. 2003 'Unemployment as Social Norm: Psychological Evidence from Panel Data', *Journal of Labor Economics* 21(2): 323-351.

Correll, S. J., Benard, S. and Paik, I. 2007 'Getting a Job: Is There a Motherhood Penalty?', *American Journal of Sociology* 112(5): 1297-337.

De Graaf, P.M. and Ultee, W.C. 2000 'United in Employment, United in Unemployment? Employment and Unemployment of Couples in the European Union in 1994' in D. Gallie and S. Paugam, Serge (eds) *Welfare Regimes and the Experience of Unemployment in Europe*, Oxford University Press.

Easterlin, R. A. 1975 'An Economic Framework for Fertility Analysis', *Studies in Family Planning* 6(3): 54-63.

Ermisch, J., Francesconi, M. and Pevalin, D. J. 2004 'Parental partnership and joblessness in childhood and their influence on young people's outcomes', *Journal of the Royal Statistical Society - Series A (Statistics in Society)* 167(1): 69-102.

Esping-Andersen, G. 1999 *Social Foundations of Postindustrial Economies*, Oxford University Press.

Eurostat. 2003 *ECHP UDB Manual. European Community Household Panel Users' Database. Waves 1 to 8, Survey Years 1994 to 2001*, Luxembourg: Eurostat.

Gornick, J. C. and Meyers, M. K. 2003 *Families That Work: Policies for Reconciling Parenthood and Employment*, Russell Sage Foundation: New York.

Gornick, J. C. and Meyers, M. K. 2004 'Welfare Regimes in Relation to Paid Work and Care' in J. Zollinger Giele and E. Holst (eds.) *Changing Life Patterns in Western Industrial Societies*, Elsevier: Oxford.

Gornick, J. C., Meyers, M. K. and Ross, K. E. 1997 'Supporting the Employment of Mothers: Policy Variation Across Fourteen Welfare States', *Journal of European Social Policy* 7(1): 45-70.

Gornick, J. C., Meyers, M. K., and Ross, K. E. 1998 'Public Policies and the Employment of Mothers. A Cross-national Study', *Social Science Quarterly* 79(1): 35-54.

Gregg, P. and Wadsworth, J. 2001 'Everything You Ever Wanted to Know About Measuring Worklessness and Polarization at the Household Level But Were Afraid to Ask', *Oxford Bulletin of Economics and Statistics* 63(Special Issue): 777-806.

Heckman, J. J. 1993 'What Has Been Learned of Labor Supply in the Past Twenty Years?', *American Economic Review* 83(2): 116-21.

Heuveline, P. and Weinshenker, M. 2008 'The International Child Poverty Gap: Does Demography Matter?', *Demography* 45(1): 173-191.

Härkönen, J. 2007 *Jobless Couples in Europe. Comparative Studies With Longitudinal Data.* Doctoral Dissertation. Florence: European University Institute.

Iacovou, M. 2003 'Work-Rich and Work-Poor Couples. Polarisation in 14 Countries in Europe', EPAG Working Paper 45. Colchester: University of Essex.

Immervol, H. and Barber, D. 2005 'Can Parents Afford to Work? Childcare Costs, Tax-Benefit Policies and Work Incentives', OECD Social, Employment and Migration Working Papers, No 31. Paris: OECD.

Jacobs, J.A. and Gerson, K. 2004 *The Time Divide: Work, Family, and Gender Inequality,* Cambridge (MA.): Harvard University Press.

Jaumotte, F. 2003 'Labour Force Participation of Women: Empirical Evidence on the Role of Policy and Other Determinants in OECD Countries', *OECD Economic Studies* 37(2): 51-108.

Kamerman, S. B. 2000 'Early Childhood Education and Care: An Overview of Developments in OECD Countries', *International Journal of Educational Research* 33(1): 7-29.

Killingsworth, M. R. and Heckman, J. J. 1987 'Female Labour Supply. A survey', in O. C. Ashenfelter and R. Layard (eds) *Handbook of Labour Economics. Volume 1*. Amsterdam: North Holland.

Korenman, S. and Neumark, D. 1991 'Does Marriage Really Make Men More Productive?', *Journal of Human Resources* 26(2): 282-307.

Loh, E.S. 1996 'Productivity Differences and the Marriage Wage Premium for White Males', *Journal of Human Resources* 31(3): 566-589.

Lundberg, S. and Rose, E. 2002 'The Effects of Sons and Daughters on Men's Labour Supply and Wages', *The Review of Economics and Statistics* 84(2): 251-68.

Mayer, S.E. 2002 *The Effects of Parental Income of Children's Outcomes*, Wellington: Ministry of Social Development.

MISSOC (various years). *Social Protection in the Member States of the European Union, of the European Economic Area and in Switzerland*. Luxemburg: European Commission.

Nickell, S. 2004 'Poverty and Worklessness in Britain', *The Economic Journal* 114(March): C1-C25.

OECD 1998 *Employment Outlook*, Paris: OECD.

OECD 2001 *Employment Outlook*, Paris: OECD.

OECD 2004a *OECD Observer*, No. 245, Paris: OECD.

OECD 2004b *Social Indicators*, Paris: OECD.

OECD 2004c *Employment Outlook*, Paris: OECD.

Ruhm, C. 1998 ‘The Economic Consequences of Parental Leave Mandates: Lessons From Europe’, *Quarterly Journal of Economics* 113(2): 285-317.

Sigle-Rushton, W. and Waldfogel, J. 2007 ‘The Incomes of Families With Children: a Cross-National Comparison’, *Journal of European Social Policy* 17(4): 299-318.

Social Exclusion Task Force 2007 *Reaching Out: Think Family. Analysis and Themes from the Families at Risk Review*, London: Cabinet Office.

UNICEF 2007 *Child Poverty in Perspective: An Overview of Child Well-Being in Rich Countries*, Florence: UNICEF Innocenti Research Centre.

Uunk, W., Kalmijn, M. and Muffels, R. 2005 ‘The Impact of Young Children on Women’s Labour Supply’, *Acta Sociologica* 48(1): 41-62.

Wooldridge, J. M. 2002 *Econometric Analysis of Cross Section and Panel Data*. Cambridge (MA): MIT Press.

Tables and figures

TABLE I: *Support for the employment of mothers, value of child benefit packages, and employment protection.*

| | Index of support for employment of mothers ¹ | Index of financial support for families with children ² | Employment protection index ³ |
|----------------|---|--|---|
| Denmark | 2.64 | 11 | 1.2 |
| Finland | 2.83 | 11 | 2 |
| Austria | 1.91 | 21 | 2.2 |
| Germany | 1.77 | 9 | 2.5 |
| France | 2.75 | 12 | 3 |
| Belgium | 2.78 | 10 | 2.1 |
| Italy | 1.94 | 5 | 3.3 |
| Portugal | 1.48 | 7 | 3.7 |
| Spain | 2.11 | 2 | 3.1 |
| Ireland | 1.10 | 19 | 0.9 |
| United Kingdom | 1.65 | 15 | 0.5 |

¹ See Appendix I for details.

² National values of the financial support package targeted at families with children including housing benefits, as % of average earnings. *Source:* Bradshaw and Finch (2002: Table 11.2).

³ *Source:* OECD (2004b).

TABLE II: Means, standard deviations, and range for the variables in the sample (17,652 couples, 919,414 couple-months)

| Variable | Mean | s.d. | Min | Max |
|--------------------------------|-------|-------|------|-------|
| Dual joblessness | 0.04 | 0.20 | 0 | 1 |
| Three children or less | 1.39 | 0.96 | 0 | 3 |
| Four children or more | 0.04 | 0.20 | 0 | 1 |
| Age of youngest child (months) | 69.56 | 62.78 | 0 | 228 |
| Age of female partner | 34.90 | 6.05 | 19 | 45 |
| Bad health husband | 0.04 | 0.19 | 0 | 1 |
| Bad health wife | 0.04 | 0.20 | 0 | 1 |
| Married | 0.90 | 0.30 | 0 | 1 |
| Regional unemployment – men | 8.43 | 5.39 | 0.73 | 26.09 |
| Regional unemployment – women | 13.75 | 10.16 | 0.85 | 46.29 |

Source: Eurostat (2003) European Community Household Panel, waves 1-8, monthly data, male partner 19-48 years, female partner 19-45 years, no students.

TABLE III: *Children, coupled joblessness, and poverty in eleven European countries, 1994-2000 (%)*.

| | Childless couples | With children | With kids < 3 years | Poor, if dually jobless with kids |
|----------|----------------------|------------------|------------------------|--------------------------------------|
| Austria | 1.9 | 2.3 | 3.1 | 24.7 |
| Belgium | 3.2 | 3.9 | 3.8 | 54.6 |
| Denmark | 3.0 | 2.0 | 3.3 | * |
| Finland | 2.3 | 2.6 | 5.2 | (19.8) |
| France | 2.3 | 2.5 | 3.5 | 43.8 |
| Germany | 1.4 | 2.4 | 3.1 | 44.9 |
| Ireland | 3.4 | 10.8 | 10.4 | 67.3 |
| Italy | 4.2 | 4.4 | 4.8 | 61.9 |
| Portugal | 1.4 | 1.9 | 2.8 | 58.0 |
| Spain | 5.8 | 8.0 | 8.5 | 42.5 |
| UK | 1.7 | 5.5 | 6.9 | 68.2 |

Source: Eurostat (2003) European Community Household Panel, waves 1-8, couple-months. Male partner 19-48 years, female partner 19-45 years, neither spouse enrolled in education.

Note: * implies cell size < 10, () implies cell size 10-30.

TABLE IV: *Fixed effects logit models of the effects of the number of children and the age of the youngest child on dual joblessness. Standard errors in parentheses.*

| | Austria | Belgium | Denmark | Finland | France | Germany | Ireland | Italy | Portugal | Spain | UK |
|--|----------|----------|---------|---------|----------|----------|----------|----------|----------|-----------|----------|
| N children (≤ 3) | 0.38* | 0.97** | 0.12 | 0.28 | 0.45** | 0.06 | 0.55** | -0.41** | 0.27* | -0.15** | 1.23** |
| | (0.18) | (0.18) | (0.32) | (0.21) | (0.08) | (0.11) | (0.13) | (0.06) | (0.12) | (0.05) | (0.10) |
| Four children or more (dummy) | 2.03** | 4.78** | -0.61 | 4.15** | 2.44** | 0.60 | 1.50** | -0.61* | 0.86* | -0.55* | 3.62** |
| | (0.64) | (0.90) | (1.56) | (1.41) | (0.32) | (0.37) | (0.43) | (0.25) | (0.44) | (0.23) | (0.39) |
| Age youngest kid, logged (<7 yrs.) | -0.01 | -0.22** | -0.38** | -0.62** | -0.25** | 0.33** | -0.16** | -0.02 | -0.05 | -0.04† | -0.08† |
| | (0.07) | (0.07) | (0.11) | (0.08) | (0.04) | (0.04) | (0.05) | (0.03) | (0.05) | (0.02) | (0.04) |
| Youngest kid 7-18 yrs. | -1.29** | -0.28 | -1.35 | -2.00** | -1.07** | 1.02** | -0.86** | -0.13 | -0.78** | -0.28** | 0.12 |
| | (0.37) | (0.36) | (0.86) | (0.48) | (0.18) | (0.19) | (0.22) | (0.12) | (0.21) | (0.11) | (0.23) |
| N obs. | 4709 | 4188 | 2183 | 2485 | 11671 | 9974 | 9579 | 17706 | 7041 | 32794 | 8351 |
| N couples | 88 | 73 | 54 | 78 | 216 | 177 | 162 | 290 | 120 | 557 | 141 |
| LL | -1476.28 | -1369.51 | -507.65 | -796.64 | -4250.69 | -3346.46 | -3655.40 | -7416.49 | -2453.32 | -13024.82 | -2663.09 |
| X ² | 95.73 | 193.45 | 184.55 | 259.10 | 207.78 | 176.09 | 1008.61 | 312.26 | 99.19 | 1046.47 | 574.15 |

Source: Eurostat (2003) European Community Household Panel, waves 1-8, monthly data, male partner 19-48 years, female partner 19-45 years, no students.

Notes: Controls (not shown): age of wife (linear and squared), bad health of husband, bad health of wife, married, regional male unemployment, regional female unemployment. † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$

TABLE V: *Institutional correlates of the effects of children on coupled joblessness.*

| <i>Child variables</i> | <i>b</i> | <i>SE</i> |
|---|-----------|-----------|
| Number of children (if three or less) | 0.46** | 0.16 |
| Four or more children | 0.95** | 0.11 |
| Age of the youngest child, logged (if less than seven yrs.) | 0.10 | 0.07 |
| Age of the youngest child 7-18 years old | -0.41** | 0.05 |
| <i>Interactions with institutions</i> | | |
| EPL * number of children (<=3) | -0.09** | 0.03 |
| EPL * logged age of child (<7 yrs) | 0.03* | 0.02 |
| Benefits * number of children (<=3) | 0.00 | 0.01 |
| Benefits * logged age of child (<7 yrs) | -0.00 | 0.00 |
| Maternal support * number of children (<=3) | -0.04 | 0.04 |
| Maternal support * logged age of child (<7 yrs) | -0.13** | 0.02 |
| N observations | 110681 | |
| N couples | 1956 | |
| LL | -41780.65 | |
| X ² | 2516.77 | |

Source: Eurostat (2003) European Community Household Panel, waves 1-8, monthly data, male partner 19-48 years, female partner 19-45 years, no students.

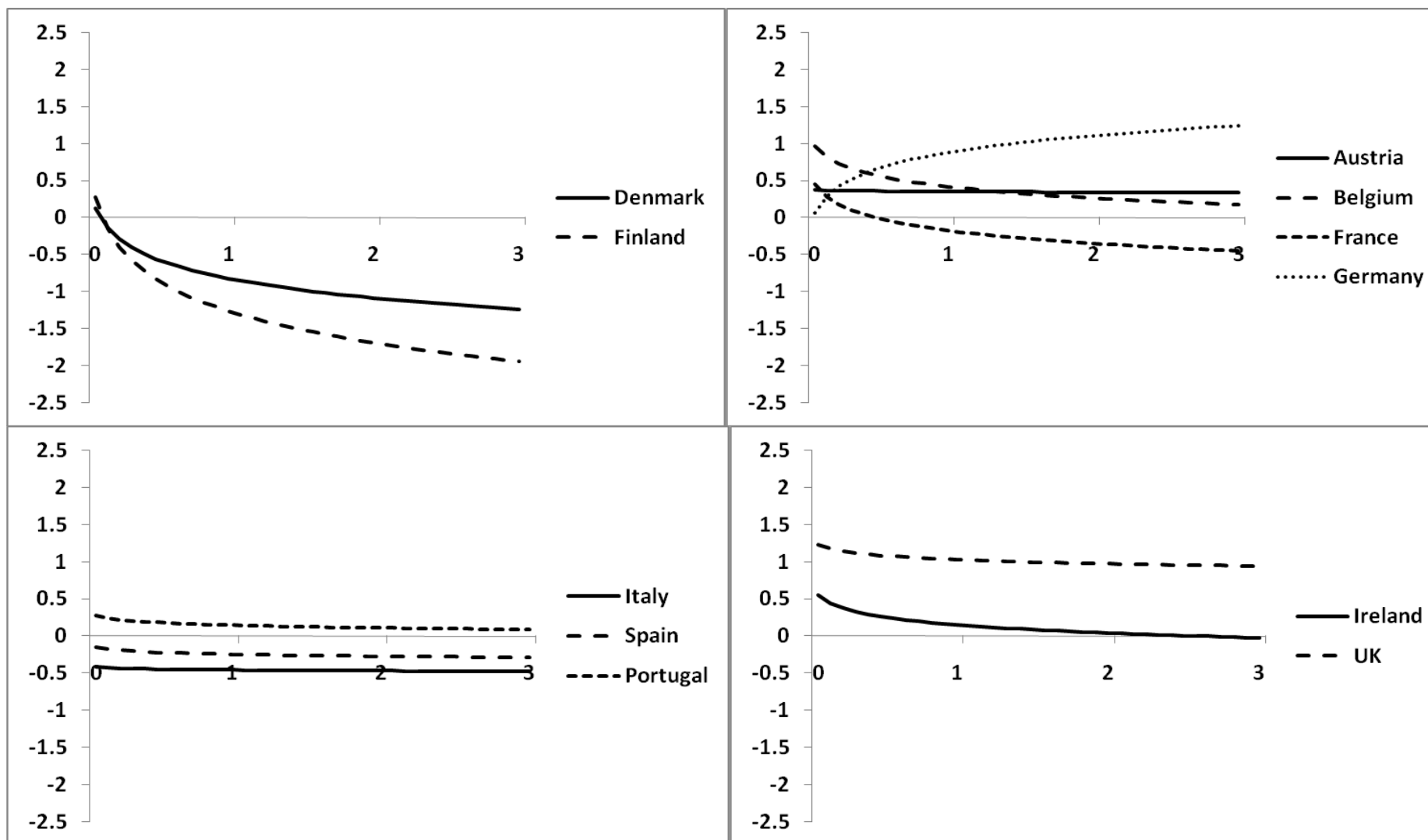
Notes: Controls (not shown): age of wife (linear and squared), bad health of husband, bad health of wife, married, regional male unemployment, regional female unemployment. † p<0.10; * p<0.05; ** p<0.01

TABLE AI: *Country values of the variables used for the maternal employment support index.*

| | DK | FIN | AT | BE | FR | D | IRL | UK | IT | PRT | SP |
|--|-----|-----|-----|------|-----|------|------|------|------|------|------|
| Legislated job protection | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes |
| Coverage of mat. leave (% employed women) | 100 | 100 | 75 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| Paid maternity leave in weeks | 30 | 52 | 16 | 15 | 16 | 14 | 14 | 18 | 21.5 | 24.3 | 16 |
| Replacement rate of maternity leave | 100 | 70 | 100 | 78 | 84 | 100 | 70 | 50 | 80 | 100 | 100 |
| Paid paternity leave in working days | 10 | 10 | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 2 |
| Tax relief for childcare | 0 | 0.5 | 0.5 | 1 | 1 | 0.25 | 0 | 0.25 | 0 | 0 | 0.25 |
| Guaranteed childcare for 0-2 years old children | 1 | 1 | 0.5 | 0.75 | 1 | 0.25 | 0.25 | 0.5 | 0.25 | 0.25 | 0.25 |
| Guaranteed childcare for 3 years old to school aged children | 1 | 1 | 0.5 | 1 | 1 | 0.5 | 0.25 | 0.5 | 1 | 0.5 | 0.5 |
| Cost of childcare | 8 | 8 | 13 | 16 | 34 | 12 | 30 | 25 | 12 | 19 | 6 |
| % children in childcare (<3 yrs) | 58 | 48 | 3 | 30 | 29 | 5 | 2 | 2 | 6 | 12 | 5 |
| % of children in childcare (3-school age) | 83 | 73 | 80 | 97 | 99 | 85 | 55 | 60 | 95 | 48 | 84 |
| Compulsory school starting age | 7 | 7 | 6 | 6 | 6 | 6 | 6 | 5 | 6 | 6 | 6 |

Sources: Legislated job protection (Bettio and Prechal, 1998; MISSOC, various years); Coverage of maternity leave (Bettio and Prechal, 1998); Duration of maternity leave (OECD, 2001); Replacement rate (Kamerman, 2000). In Belgium, the replacement rate varies between 75 and 82 per cent, in the UK it decreases from 90 per cent during the first six weeks to a low flat rate during the twelve next weeks and unpaid for the rest; Paternity leave (Kamerman, 2000); Tax reliefs are based on evaluations of the importance of the policy based on Bettio and Prechal (1998); Guarantee of child care, based on evaluations of the importance of the policy based on Bettio and Prechal (1998); Cost of childcare: gross amounts charged from parents (Immervol and Barber, 2005: Figure 2.2); Enrolment rates in public childcare (Kamerman, 2000); Compulsory school starting age (Kamerman, 2000).

FIGURES Ia to Id: *Estimated changes in the effect of childbearing (in logits), by age of the child (0-3 years).*



Source: Eurostat (2003) European Community Household Panel, waves 1-8, monthly data, male partner 19-48 years, female partner 19-45 years, no students.

