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When Fertility is Bargained: Second Births in Denmark and Spain

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We examine the degree to which women's fertility decisions depend on greater gender symmetry in child care. We analyse second births and focus particularly on the importance of fatherly care for women with a strong career orientation. Exploiting the European Community Household Panel, we use event-history techniques and compare Denmark and Spain, two countries that represent the European extremes in terms of both fertility and public support for working mothers. Compared to the Spanish case, Danish women are more likely to have a second child, in general because welfare state support makes reconciliation of motherhood and careers easier. We show that Danish career women are additionally able to reduce the opportunity cost of motherhood via enhanced fatherly child care due to bargaining between the spouses.

Introduction

Reflecting women's new roles, fertility research has begun to stress the importance of family friendly social policy and secure jobs. More generally, it means that we need to question the specialization assumptions inherent in the standard theoretical framework of the new home economics (Becker, 1991). With more autonomy women are likely to bargain for greater role symmetry in the household, not least with regard to care for children (Breen and Cooke, 2005). This suggests that research should pay more attention to fathers' behaviour within the family.

Economic autonomy empowers women to promote their preferences when they are at odds with those of their partner. Under such conditions, we need to adopt a bargaining framework with two distinct utility functions. Since the opportunity cost of motherhood rises in tandem with women's lifetime income prospects, an important point of bargaining relates to the reconciliation of employment and family obligations. Indeed, greater gender symmetry may become a pre-condition for motherhood among career dedicated women (McDonald, 2002).

Sampling only couples, we exploit the European Community Household Panel's (ECHP) full eight waves and apply an event-history framework to estimate the probability of second births. The focus on second births is motivated by three factors. One, as reflected in much recent demographic research, we face the puzzle that the probability of higher-order births seems greater among highly educated women, i.e. those who arguably face the largest opportunity cost (Andersson, 2000; Kravdal, 2001; Kreyenfeld, 2002; Sleebos, 2003). Two, it is widely recognized that the difficulty of reconciling motherhood and careers is far greater with two (small) children than with only one. The vast majority of women, regardless of education and career aspirations, do end up having at least one child. It is with respect to second and higher-order births that we see large variations, both across countries and across types of women.[1] And, three, our principal aim is to explore how fathers' dedication to child care influences fertility decisions. Since his expected contribution can only be empirically established by examining what he did in the past, estimation requires that one child already be present.

We adopt a discrete-time framework with logit estimations and include three main co-variate vectors related to female, male, and joint household attributes, respectively: the standard menu of variables (like education and age), as well as variables that address the tensions between motherhood and employment (such as external child care). A central issue is how couples manage to reduce the penalty of motherhood associated with a second child. The penalty can be lessened by externalizing and/or by increasing fathers' child care.

These dimensions of fertility have been given only scant attention in empirical research. There is certainly evidence that day care matters for fertility (Del Boca *et al.*, 2003; Neyer, 2003). There is, however, very little related to the paternal role. Del Boca (2002) and Duvander and Andersson (2003) show that fathers' contribution to domestic work influences fertility positively. In Sweden, women are more likely to have a second child if the male partner took parental leave following the birth of the first (Olah, 1998).[2]

Our study examines two countries, Denmark and Spain, that proto-typically represent the European variation in fertility and women's employment. Spain combines internationally low levels of female labour force participation with a traditional fertility pattern, according to which fertility is negatively correlated with women's level of education. To this we must, however, add that participation has risen dramatically in the past decades. It is, furthermore, a country in which the reconciliation of motherhood and paid employment is unusually difficult, both because of widespread job precariousness and because of unusually underdeveloped mother-friendly policy: paid maternity leave is limited to 4 months, there exists no paid parental leave, and access to day care for the under-3s is very scarce and, being predominantly private, also expensive.[3] Spain epitomizes the emerging 'low fertility equilibrium' with fertility rates hovering around 1.2.

Denmark represents the new 'Nordic' model with near universal female employment, and fertility is now *positively* correlated with women's educational level. Denmark boasts above-average fertility (a Total Fertility Rate (TFR) around 1.8) and stands out for its very comprehensive and generous family policies: 18 weeks paid maternity leave plus another 10 weeks of parental leave (that can be extended another 26 weeks), and subsidized day care is now virtually universal (Gornick and Meyers, 2003).[4] When controlling for other observed characteristics, Danish women do not suffer any significant income loss due to children (Datta Gupta and Smith, 2002). Based on a stylized simulation for medium educated women, Esping-Andersen (2007) estimates a Spanish child penalty that is four times larger than the Danish. The income loss rises substantially with two children (Sigle-Rushton and Waldfogel, 2006).[5]

Explanations of Fertility Behaviour

Across time and nations, the variation of fertility outcomes is far greater than of fertility preferences.[6] Survey data reveal that European citizens' desired family size converges, with minimal variation, around the 2.2–2.4 child norm on average (Sleebos, 2003). The challenge lies in explaining the distance between between desires and reality.

Micro-economic theory has traditionally emphasized two factors, namely husbands' breadwinner capacity and the opportunity cost of motherhood (Willis, 1973; Mincer, 1985; Becker, 1991; Hotz *et al.*, 1997). One would expect, cross-nationally, a negative association between fertility and the rate of female employment; and at the micro-level, an inverse relationship between fertility and a woman's lifetime earnings potential.

Reality often deviates from theoretical prediction. Cross-nationally, the correlation between fertility and female employment has become positive (Ahn and Mira, 2001; Sleebos, 2003). And within some countries, the Nordic especially, fertility is now positively related to women's education and even earnings (Andersson, 2000; Vikat, 2004).[7] Mother-friendly policy is one major way to reduce opportunity costs and welfare state differences may, therefore, explain why behaviour contradicts theory (Gauthier and Hatzius, 1997; Billari *et al.*, 2002; Esping-Andersen, 2002; Gornick and Meyers, 2003; Del Boca *et al.*, 2003). Yet, we should be wary of such findings if the education effect is premised on bi-modal distributions. Kreyenfeld's (2002) analysis suggests that to be the case. While college educated German women are somewhat more likely to have two-plus children, they are also far more likely to remain childless. In Spain, childlessness is also common among higher educated women (Gonzalez and Jurado-Guerrero, 2006).

Delaying first births helps reduce the lifetime income penalty but it may also limit subsequent fertility

(Martin, 2002). The age at first birth has risen everywhere and hovers now, with little variation, around 28–29 years (Gustafsson, 2001; Kohler *et al.*, 2002). Postponement *per se* seems like a poor candidate for explaining the cross-national analomies discussed earlier. The age of first births in Denmark is similar to the Italian and, yet, Denmark boasts 50 per cent higher fertility.[8] Its credibility is also weakened by the positive link between earnings and fertility in Scandinavia.

Postponement need not result in fewer births if circumstances allow for catch-up. Indeed, women who face a substantial opportunity cost can space births closely so as to minimize interuptions (Taniguchi, 1999). Jensen (2002) argues that welfare state support and access to secure jobs facilitate catch up among Danish women. The Mediterannean countries display a particular variant of the postponement syndrome, not so much related to longer schooling as to the increasingly difficult and prolonged transition to adult independence (Billari *et al.*, 2002; Kohler *et al.*, 2002). Both De la Rica and Iza (2004) and Baizan (2004) show that employment insecurity is a main explanation of postponement in Spain.

Theory has conventionally assumed that couples share a unitary utility set that they then maximize by defining their desired consumption (z), number of children (n), how much they want to invest in their 'quality' (q), and how best to specialize in paid and unpaid work. The male's labour supply is treated exogenously, and the woman's specialization in motherhood and housework should be negatively related to her expected wage penalty (Becker and Lewis, 1973; Willis, 1973).

When women are committed to employment and account for a sizable share of family income, one can no longer assume that couples decide in perfect concert—nor, of course, that raw individualism prevails. Sociologists have generally been far more attuned to the heterogeneity of the female life course. Hakim's (1996) typology of women's preferences is a useful starting point. She argues that the share of women who put their own career first is everywhere minoritarian, as is increasingly also the traditional family-oriented woman. The large majority fall in-between; that is to say, they insist on combining family with a stable, life-long attachment to employment. This suggests that a cooperative type of bargaining model is the most realistic for the majority of couples (Browning, 1992; Lundberg and Pollack, 1996).

Fertility research routinely assumes an endogenous decision process. Women's career orientation may surely influence motherhood but, in turn, fertility preferences may influence their human capital investment, degree of job commitment, and partner selection (Hakim, 1996; Blossfeld and Drobnic, 2001). All else equal, we would expect that the partner's breadwinner potential matters greatly for women with strong family preferences. For career women we would, in contrast, expect that partner selection is motivated by his perceived readiness to support her career advancement.

The mainsprings of endogeneity derive, in this context, from possibly unobserved heterogeneity in attributes and preferences that select women differently into motherhood. Preferences are not written in stone and this implies that selection processes can vary over time. People are likely to adapt in the face of constraints or as circumstances change. To illustrate, the traditional breadwinner husband may be induced to care more for the children if his wife's career is at stake. But it is also possible that preferences are stifled. Alvarez and Miles' (2003) study of Spanish two-earner couples shows that husbands' contribution to child care is not much affected by wives' labour force status and relative bargaining power. Where traditionalist gender norms predominate there will be less room to press for more gender equality in the distribution of home production. If so, the choice menu for women with career commitments can become zero-sum with regard to both partnership and motherhood: either accept major career penalties or renounce on marriage and children.[9]

Due to welfare state differences, we expect that career-family trade-offs are far steeper in Spain than in Denmark. The question is to what degree fathers additionally help lessen the trade-offs via contributing to child care. In theory, this should depend on the woman's bargaining power and opportunity cost but, as noted, reality need not be consistent with theory.

This said, one clearly needs to adopt a dynamic perspective. Life-cycle models emphasize the timing of births in lieu of couples' sequential assessment of utility from a life-time perspective. In practice, most research simply assumes *a priori* that husbands' contribution to domestic tasks is zero.[10] This leads to an unrealistic fertility model that merely combines the wife's production function with a measure of the husband's earnings power. The higher her wage and the expected earnings depreciation, the greater is the probability of limiting and postponing fertility.[11] External child care will help reduce depreciation and, in any case, first births should coincide with the moment that husbands' earnings have stabilized (Cigno, 1991: Ch. 6; Hotz *et al.*, 1997: 318).

To explain second births we must introduce some adjustments to the standard approach. First of all, it is clearly less relevant to specify husbands' earnings stability and, secondly, we are not so much interested in the timing or postponement of the (second) birth as in the probability that it occurs at all—at least within the timespan that normally obtains. Nonetheless, income and timing are important for other reasons. The level of family income influences their capacity to purchase substitutes for their own time; timing is relevant since the acceleration of higher-order births will minimize aggregate interruption time.

Fertility and Opportunity Cost

The straightforward prediction is that postponement and lower fertility diminishes the child penalty (Taniguchi, 1999). The penalty climbs sharply in relation to women's career prospects (Calhoun and Espenshade, 1988; Anderson *et al.*, 2002; Martin, 2002).

Where there are trade-offs, couples will seek remedies, either within or outside the household. External child care permits shorter interuptions; and paid leaves will compensate for foregone wages and potentially also diminish interruptions (Gustafsson and Stafford, 1992; Gauthier and Hatzius, 1997; Waldfogel, 1998; Stier *et al.*, 2001; Esping-Andersen, 2002; Del Boca *et al.*, 2003). Both may, however, produce ambiguous effects. Prevailing costs of private day care or nannies will typically price lower income households out of the market, and mothers' ability to remain employed will then hinge on the availability of a grandmother or other unpaid help.[12] The marginal cost of day care changes dramatically where it is subsidized, as in the Nordic countries.[13] Paid leave schemes may also yield non-linear effects depending, on one hand, on how they interact with day care provision and, on the other hand, on the duration of paid entitlements. Very long durations may have adverse effects on returning to work and may, hence, actually increase future depreciation.

Several authors now stress the importance of job security (temporary versus permanent contracts) and working time flexibility—which is usually greater in the public sector (Hoem and Hoem, 1989; Bernhardt, 1993; Esping-Andersen, 2002; Jensen, 2002; Bernardi, 2003; Baizan, 2004). Women may deliberately swap higher income for cushioned employment, in order to better reconcile motherhood with work and, most likely, protected jobs offer better guarantees against long-term wage depreciation.[14] Employment insecurity should adversely affect fertility to the extent that women insist on a stable connection to employment prior to maternity.

There has been far less attention to internal remedies—although they are inherent in Becker's theory of investment and time allocation. One lies in the minimization of risk. If the partnership is of uncertain longevity, the risks associated with births rise. Hence, we would expect that the duration of the partnership is positively associated with births.[15] Couples can also remedy trade-offs by how they allocate home production. Of particular importance here is obviously the degree to which husbands alleviate wives' double burden.

Recent time-use research points to important changes in parental time dedication. Despite the greater opportunity costs involved, high educated women have actually increased their child caring time, and for men we witness a genuine leap—although largely confined to higher educated men (Bianchi *et al.*, 2004; Deding and Lausten, 2004). Hence, following Del Boca (2002), husbands' contribution to household work can be an important correlate of wives' fertility-work decisions. Again, one would expect non-linear effects. For women with a 'traditional' family preference, husbands' contribution to housework is probably of less significance than for career women.

A slight revision of the standard quantity–quality fertility model put forward by Willis (1973) and Becker and Lewis (1973) yields a production function of children:

$$N = f\left(\frac{X_c}{Q}, \frac{t_m}{Q}, \frac{t_f}{Q}\right), \phi N$$

where, N is the number of children, Q is the quality of children, X_c is the amount of goods and services purchased and t_m and t_f are the amount of mother's and father's time dedicated to child care. We revise the model by adding ϕ, which denotes outside 'gifts' (such as welfare state transfers or subsidized child care) that are usually in proportion to the number of children. ϕn can affect positively X_c and/or negatively t_j. Since we focus on decisions to have a second child, we assume that Q is fixed and that $N > 1$.

Fathers' and mothers' separate utilities are given by U_f (z_f, λ_f, k_f, h_f, N, Q) and U_m (z_m, λ_m, k_m, h_m, N, Q), respectively. If we assume that both value N similarly the bargaining will be over z (their respective consumption), λ (their respective leisure) and, more directly relevant for our purposes, over k and h (time with kids and at work, respectively).[16]

The parents' lifetime budget constraint is given by $x_c = (T - t_m - t_{mZ})W_m + (T - t_f - t_{fZ})\ \ W_f + ph_m$. T is the total time each parent has, and w_j is the wage of parent j. Following Browning (1992: 1452), we add ph_m to the cost (p) of market work for mothers (i.e. child care). $Ph_m = \mathrm{f}(\phi n)$. In this study, we omit leisure time (λ) due to lack of data. Solving this model (see Ermisch, 2003, for a full derivation) leads to the straightforward prediction that family size (and Q) is inversely related to the expected opportunity cost associated with h_m. Our model allows for the father to dedicate time to child-care, in which case $t_f > 0$. The opportunity cost of children for the mother can be expressed as

$$Y_j^* = w_j + \beta\omega L_j$$

where, w_j is the foregone wage, and $\beta\omega L_j$ is the depreciation factor on lifetime earnings due to human capital erosion and less experience. A more general model that also incorporates the father's time for child care is:

$$L_j = f(t_m, t_f, HC_m)$$

We should[17] expect that U_m ($N > 1|$ $\mathrm{tc_f} > 0$) increases with HC_m: the higher is the mother's career investment, the greater must be the father's contribution to child care, in order to motivate a second child.[18] The outcome should depend on the balance of bargaining power between the partners.

Our empirical approach necessitates a two-step procedure.The empirical model to be estimated for the likelihood of a second child consists of four vectors:

$$\text{Probability (second child)} \\ = a\mathrm{X_m} + b\mathrm{X_f} + c\mathrm{X_{mf}} + d(\mathrm{X_m} \times \mathrm{X_f}) + \sigma$$

where $\mathrm{X_m}$ are the mother characteristics, $\mathrm{X_f}$ are the father characteristics, $\mathrm{X_{mf}}$ are joint household characteristics (such as use of external care), and ($\mathrm{X_m} \times \mathrm{X_f}$) is the interaction of mother and father characteristics.[19] In our study, the latter captures the interaction of mother's career dedication with father's child caring time. The σ captures unobserved heterogeneity (see subsequently). Given the above, if $\mathrm{X_j}$ ($j = \mathrm{m,f}$) is the mother's and father's level of human capital, respectively, standard theory would expect the coefficient a to be negative and the coefficient b to be positive. To the extent that the father's child care matters, we expect the associated coefficient to be positive. Similarly, the d coefficient for ($\mathrm{X_m} \times \mathrm{X_f}$) should be positive (and, if so, reduce the negative impact of a, namely mother's human capital).

This model may produce biased estimates due to unobserved heterogeneity. The problem is that we sample women who already have one child. If there are any characteristics that systematically lead to childlessness, our sample will under-represent women with such attributes and, hence, our estimators will be biased. Since our concern is whether women diminish any trade-offs via bargaining, the selection problem is of relevance. Women with strong bargaining power may be less likely to become mothers in the first place. Yet, it all depends on our theoretical purpose. If we aim to generalize to the entire female population then, yes, selection is crucial. The question our study poses is, however, different since it has mainly to do with the *additional* trade-offs and opportunity cost associated with having more than one child. In this sense, we generalize only to the population of women who already have one child and face the decision whether to have another. In any case, to identify possible selection we adopt a 'pseudo' two-stage Heckman correction (see subsequently).

In our study, we can estimate how second births are related to fathers' child care which, in turn, should mirror the outcome of bargaining. To establish whether bargaining is, indeed, relevant for time allocation, we regressed (OLS) fathers' relative contribution to child care on mothers' relative monthly wage. The latter is our most important proxy for mothers' bargaining power. We include controls for both spouses' education, for total (log) household income, marital status, access to external child care, and a dummy for the presence of any child under age one.[20]

The results are as one would predict, and pretty much in line with earlier research (Brines, 1994; Bianchi *et al.*, 2000). There is much less caring symmetry when mothers are low educated and considerably more when children are placed in outside care. The bargaining effect is strong and positive. For Denmark, we find that the spousal caring gap narrows by one weekly hour when the wife's relative earnings increase by 200 Euros. About half of this effect is substitution because the wife reduces her caring time. Less predictable is our finding that Spanish men seem quite responsive to their partners' bargaining power. For the same 200 Euros, the Spanish caring gap narrows by a little more than 2 hours—with 60 per cent of this being substitution. The much larger Spanish effect must, of course, be interpreted with care because the mean caring gap is huge: Spanish fathers contribute, on average, only half as much time as the Danish. In any case, the bargaining effects behind fathers' relative (and absolute) child care dedication appear unambiguous.

Data and Estimation

For estimation we use all eight waves of the ECHP, 1994–2001, and sample only women with one child who live as a couple in the two countries of comparison, Denmark and Spain. As noted, the likelihood of a second birth is far lower in Spain. Welfare state effects can be captured to a limited degree with our data and must accordingly be kept in mind for interpretation. Given what we know about the two countries, external paid child care is bound to be publicly provided in Denmark, while in Spain it is almost certainly private. The ECHP data include information on contractual status and 'sheltered' employment (public or private sector job). In the final model to be tested we must, however, omit both due to very strong colinearity with key variables.

The ECHP data have several shortcomings. There are important left-censoring problems, in particular due to lack of information on partnerships, work status and income prior to the first wave. We do, however, know the date of birth of the first child and this will be used to estimate duration. The simple education variable in the ECHP raises the possibility of substantial unobserved heterogeneity (see subsequently).

We restrict the sample to couples whose first child is under age six.[21] The relatively few years at our disposal also imply right-censoring. This is a lesser problem since most second births arrive within very few years of the first (Baizan, 2004). In our sample, the mean age of the first child at the time of birth of the second child is 1.5 (SD = 1.5) in Denmark and 2.1 (SD = 1.7) in Spain. Conditional on first births, the ECHP provides 624 'risk events' (corresponding to 305 individuals) for Denmark and 1702 (724 individuals) for Spain. Over the panels, there were 162 second births in Denmark and 224 in Spain. This implies that half of the sampled Danish women had a second child, compared to only 31 per cent in Spain.

The ECHP provides information on the key covariates of interest, albeit not always as detailed as we would wish.[22] To capture women's human capital we use three variables: one, education which is a simple trichotomy of low (less than secondary), medium (secondary), and high (tertiary). We use medium as our reference category. Two, the woman's (log) wage rate.[23] The third variable measures investment in additional professional training during the past year. This is the ECHP variable that is most consistent with Becker's (1991) concept of career-targeted human capital investment, in particular because it includes only training initiated (and paid for) by the respondent herself.[24] One cannot of course preclude that some women finance additional training for other motives than career advancement. It remains, in any case, the least ambiguous measure of career orientation available to us. This variable is a time invariant dummy for engaging in training in any year of our 6 panel years; no training constitutes the reference category.

To identify the factors that influence the reconciliation of motherhood and careers, we include information on her labour supply (mean numbers of months employed over the observation period prior to a second birth).[25] As noted, contractual status and sector of employment are both powerfully correlated with mothers' earnings and labour supply. Substituting the former two for the latter in alternative estimations suggests that neither contract status nor public employment yield any significant effect. Hence, we choose to omit them in the final analyses.[26]

Following standard practice, we capture the father's breadwinner potential via his level of education (as mentioned earlier), and his (log) wage. For both parents, we also include age and civil status (non-married is reference). The latter requires some remarks. In Spain, births are extremely rare outside matrimony while, in Denmark, births in the context of cohabitation are very common. It is, however, common to marry once a couple has children. The ECHP does not provide precise data on use of external child care. We use a time varying dummy variable which measures whether someone outside the household looks after the child on a paid basis. 'No utilization' is used as reference category. To capture bargaining outcomes, we include the variable for fathers' (self-reported) weekly (log) child care hours for the *first* child.[27]

As mentioned, we know that mothers' education is very positively related to the time devoted to child care. The standard practice of using education as a proxy for her human capital and opportunity cost is accordingly problematic. Hence, we prefer to use her wage rate and and participation in professional training to capture potential career opportunities.

Most importantly, we introduce an interaction term (mother's investment in training × father's dedication to child care). This variable is a key, in order to identify whether U_m $(n > 1 | \ tc_f > 0)$ for career-oriented women at any level of HC_m. The real issue is not whether mothers' bargaining power influences fathers' time dedication *per se*, but whether it does so when the opportunity cost of motherhood mounts. The crucial test lies in the *interaction effects* between mother career characteristics and fathers' care contribution.

All time-varying right-hand side variables are lagged by one period, in order to capture parents' situation at time of conception, i.e. 1 year before childbirth, since this is presumably when couples decide on the second child. Since our observations are annual, our second-birth analyses adopt a discrete time approach with logit estimations that account for the repeated observations on individuals via the cluster option. We introduce a log-time covariate (time elapsed since first birth) to capture duration.[28] The data is organized in person-years and most of the covariates are time-varying. The only time-constant covariates are parents' education, mother's participation in professional training, and months employed by the mother.

We fit the event-history data to a discrete-time logit model for Denmark and Spain, respectively. The eight ECHP waves yield 624 observations for Denmark and 1702 for Spain. With such relatively scarce observations, the estimates tend to suffer from high standard errors. Estimation includes, as mentioned, a 'pseudo' two-step Heckman procedure to test for selection based on a probit model for the likelihood of motherhood in the first place:[29]

$$P(n = 0{,}1) = (c + \beta Z + \sigma)$$

where c is the intercept, Z is a vector of the same mother-specific variables as included in our estimation of second births. σ represents the unobserved heterogeneity, and is assumed to be distributed normally with mean 0 and variance σ^2. We stress the word 'pseudo' because two-stage estimations using inverse Mills-ratios cannot be applied to logit models. We opt for a second-best solution which is to incorporate the inverse Probit-estimated Mills ratio (λ) in an OLS regression re-estimation of the probabilities of a second child that includes the entire set of covariates included in our logit models. [30] The results should at least provide some plausible clues with regard to potential bias.

Analyses

In Table 1, we present the results of our second-birth analyses. Recall that the focus is on 'bargained fertility', which implies that the key variables are those that capture the mother's opportunity costs and the father's contribution to diminishing such. Mothers' (log) earnings is certainly an important proxy for opportunity costs, but our primary focus is on the 'professional training' variable. Accordingly, the 'acid' test of our hypothesis lies in the interaction term (mother's professional training × father's share of child care time). In seperate analyses, we estimated with the alternative interaction, namely mother's wage × father's care, but it performs less well. In Denmark, the very compressed wage structure means that earnings do not explain much. For each country we compare two models: one including, the other excluding, the interaction term.

We would, in the most generic sense, conclude that statistical insignificance across the entire menu of co-variates implies the absence of any reconciliation problems in the case of second births. Our limited sample sizes imply, however, large standard errors. In any case, the models bring out the orthogonal nature of fertility decisions in the two societies.[31] Considering that almost no variables reach significance, the Danish estimates suggest that the obstacles to motherhood are generally modest.

From model 1 we see that, in Denmark, the decisional logic diverges substantially from standard theory. Firstly, the male partner's role as breadwinner has *de facto* disappeared. His human capital, earnings (and household income) have no influence whatsoever on second births. Second, Danish mothers' labour supply (months employed) is positively related to fertility—as is higher education (but statistically insignificant). However, Danish women conform in one crucial respect to conventional theory since their investment in professional training is powerfully negative for second births (in terms of odds ratios, it reduces the likelihood by more than half). For career women, then, there remain important trade-offs.

Consistent with earlier research, highly educated Danish women are more likely to give second births. With medium education as reference, the odds for women with tertiary education are 1.48 (not significant). In seperate tests that omit mother earnings, we also found that second births are not affected by whether the mother works part-time, full-time, or is inactive, nor whether she is employed in the public sector. And we note that her earnings level has no impact whatsoever.

Turning to model 1 for Spain, the picture is more consistent with conventional theory. Mothers' wage has a significantly negative effect on births, while fathers' human capital goes in the opposite direction—and quite strongly so. The same holds for full-time employed Spanish women (estimated in seperate tests that exclude her wage). Yet, as in Denmark, we see a positive but non-significant, effect of being highly educated.

The key test, for our purposes, lies in the interaction term. Model 1 suggested that neither Danish, nor Spanish, fathers' child care contribution affects

Table 1 The Likelihood of a Second Birth in Denmark and Spain. Discrete-time Logit estimations with standard errors adjusted for clustering on nid

	Denmark		Spain	
	Model 1	Model 2	Model 1	Model 2
(log) time	1.525***	1.528***	1.101***	1.100***
	(0.241)	(0.242)	(0.153)	(0.152)
Mother covariates				
Age	−0.112***	−0.111***	−0.061**	−0.061**
	(0.038)	(0.038)	(0.026)	(0.026)
Low education	−0.240	−0.271	0.086	0.084
	(0.397)	(0.400)	(0.203)	(0.203)
High education	0.392	0.378	0.259	0.249
	(0.253)	(0.256)	(0.225)	(0.226)
(log) wage	−0.079	−0.083	−0.077**	−0.077**
	(0.050)	(0.051)	(0.039)	(0.039)
Months employed	0.111***	0.109***	0.049*	0.049*
	(0.029)	(0.029)	(0.026)	(0.026)
Invests in training	−0.885***	−0.215	−0.240	−0.120
	(0.301)	(0.785)	(0.233)	(0.311)
Father covariates				
Age	−0.050*	−0.048	0.011	0.011
	(0.029)	(0.030)	(0.022)	(0.022)
Low education	−0.007	−0.010	0.117	0.108
	(0.326)	(0.327)	(0.205)	(0.205)
High education	0.113	0.102	0.640***	0.639***
	(0.243)	(0.244)	(0.231)	(0.231)
(log) wage	−0.029	−0.031	0.060	0.060
	(0.057)	(0.057)	(0.048)	(0.048)
(log) Child care time	−0.069	−0.035	−0.008	0.001
	(0.086)	(0.090)	(0.049)	(0.052)
Household covariates				
(log) income	0.598	0.651*	0.053	0.053
	(0.384)	(0.375)	(0.094)	(0.093)
Married	0.344	0.337	0.215	0.202
	(0.221)	(0.221)	(0.394)	(0.396)
Use paid child care	−0.155	−0.163	0.078	0.076
	(0.274)	(0.274)	(0.174)	(0.174)
[Mother training × Father's child care]		−0.231		−0.075
		(0.257)		(0.140)
Constant	−3.876	−4.559	−3.000***	−3.009***
	(3.873)	(3.800)	(1.164)	(1.167)
N	624	624	1702	1702
Wald chi^2	79.82	81.83	79.90	80.01

Robust standard errors in parentheses.
Significant at 10 per cent%; ** significant at 5 per cent; * significant at 1 per cent.*

births directly. In Denmark, however, fathers' care *does* matter for career mothers. As we can see in model 2, the negative effect of mothers' professional training now becomes insignificant. This suggests, in other words, that Danish career women do condition second births on their partners' dedication to child care. This adds a new twist to the traditional specialization thesis, in particular because we know that the compensatory behaviour of Danish males is far stronger among the highly educated. For Spain, it is evident that men married to career women do little to alleviate career-motherhood trade-offs.

One additional comment on our results: we note that paid external child care has no effect on fertility.

This is to be expected in Denmark since practically all children from age 1 onwards are in public day care (Esping-Andersen, 2002). In Spain, one would have expected a positive effect due to the scarcity and cost of child care (in particular because we control for household income). The sign is, as expected, positive but not significant. Basically, if child care burdens are a major obstacle to motherhood, Spanish women can count on neither paid child care, nor on their husbands, to help soften the incompatibilities of motherhood and careers. Grandmothers may be the only realistic recourse but this, of course, we cannot identify in the data.[32]

As discussed, research has emphasized the harsh reconciliation problems that Spanish women face due to the high incidence of precarious jobs, unemployment and the lack of access to flexible part-time options. The negative impact of mothers' earnings (and also of full-time employment) on second births suggests that this is indeed the case—although controls for permanent contract and public sector job (in alternative estimations, not shown) do not have any significant independent effects.

One might offer different—but not necessarily mutually exclusive—interpretations. One, that Spain continues to adhere to the conventional male breadwinner culture. The figures presented in Table 1 suggest this to be the case, but here we should also remember that the typical Spanish working day is exceedingly long and will normally not even permit the most dedicated father many hours to care. Two, the inability or unwillingness of fathers to contribute to child-care may have something to do with the sheer size of the caring gap that needs to be filled. Most Danish children attend child centres full day, and the margin of required additional parental attention is thus modest. In Spain, the vast majority of under-3s are not in any external care and this implies that parental care will seriously jeopardize careers. In lieu of such obstacles, the upshot may be that career-dedicated Spanish women forego children altogether (if the grandparent option does not exist), rather than seek to rebalance the allocation of market and home production time.

Here, then, we arrive at possible selection bias relevant for our analysis. Probit models for the two countries do not suggest that, overall, higher educated, more career oriented women are under-represented in our sample of couples with one child already—at least on the observables.[33] In fact, our estimates show that educated Danish women with higher earnings, and who invest in training, are *more* likely to have a first child than the low educated women. For Spain, there is no negative selection with regard to women's education or earnings, but there is on the professional training variable (where the negative effect of having a first child is strong and significant). In other words, there is some selection on observables in Spain. And when we consider that the proportion of Spanish women with professional training in our probit sample is non-trivial, under-representation of this group in our sample is, accordingly, substantial since these women are far less likely to have even one child. This, of course, simply confirms the view that reconciliation in Spain is far more difficult. But it also underscores the need to be cautious in generalizing beyond the population of women who already have one child. Interestingly, for Denmark we find that the percent women who invest in training is higher among mothers than non-mothers—another piece of evidence that suggests that motherhood there is not associated with major career trade-offs.

To identify selection on unobserved heterogeneity, we estimate inverse Mills ratios from the probits and retest our second-child models (using OLS regressions with bootstrap estimation of standard errors). The bootstraps show that our estimates remain stable throughout.

For Denmark, the analyses suggest some bias due to selection on unobservables. Conditioning on the λ, the negative effect of mother's age loses significance, and the (previously non-significant) positive effect of high education declines towards zero—very much in line with Kreyenfeld's (2002) findings for Germany. But the inclusion of λ does not affect the impact of mother's earnings nor of her professional training. In short, for Denmark there is little reason to suspect that our main findings are biased due to underlying selection. For Spain there appears, very similarly, to be no major bias due to unobserved heterogeneity. As in Denmark, the mother age effect is reduced and loses significance and the positive effect of being highly educated (which was not significant to begin with) declines substantially. Our inability to detect selection bias on the unobervables is, in any case, comforting since this implies that our key explanatory variables do capture quite well the main preferences and attributes of concern.

Overall, the only detectable selection bias that should matter lies in our Spanish analyses, and this must be kept in mind for our interpretations of Table 1. Indirectly, we confirm the finding that Spanish career-oriented women are more likely to remain childless (Gonzalez and Jurado-Guerrero, 2006).

Conclusions

Considering data limitations, it would be folly to offer strong conclusions. With only eight panel waves and small Ns, our analyses suffer from large standard errors. Since we only have annual data, we are restricted to discrete-time estimations. And key variables are either missing (in particular the duration of the partnership) or are measured in ways that are not optimal for this kind of research. Strong multicolinearity also compels us to omit several potentially important variables (such as contract status), although seperate estimations suggest that this is no major problem.

Still, our study does help reveal important and under-explored dimensions of couples' fertility decisions when they face career-family tensions. It is precisely in this spirit that we selected two essentially orthogonal worlds of fertility and female employment, namely Denmark and Spain. The former country is no doubt an international vanguard, and the latter a laggard, with regard to mother-friendly policy. As regards motherhood, Danish women have achieved *de facto* economic independence on a lifetime basis and this, of course, implies far less reliance on the male as income provider.

Of course, even with universal child care, job security and flexibility the potential income penalty of motherhood will not disappear entirely and this we register, in terms of the reduced proclivity of strongly career oriented Danish women to have a second child. The key result from our Danish model is that men's alternative role as care givers can help diminish this penalty. In brief, our results suggest that a decision-making logic is very different from that depicted in standard fertility models evolving in Denmark. Spanish women face far more severe trade-offs. Our results suggest some bi-modality of behaviour: women with strong career ambitions are more likely to renounce on motherhood altogether, but those that do become mothers appear to adhere more closely to conventional norms, i.e. that second births depend more on the husband's breadwinner capacity than on their career prospects.

For second births in Spain, the unitary utility approach in conventional fertility theory still appears rather valid—although that would not be the case for first births. And in a context such as the Danish, we clearly need to discard it all together. In conclusion, we provide some added support to the argument that fertility research must pay far more attention to the male as father and not just as breadwinner.

Notes

1. One should, nonetheless, assume that very career oriented women are less likely to have any children at all. As discussed, we include tests for such selection bias in our study.
2. Sundstrom and Duvander (2002) show that, in Sweden, high educated and higher earning fathers are more likely to take extended father leave. As shown for several countries, such men contribute, similarly, far more hours to domestic work and, especially, to child care (Bianchi et al., 2004; Deding and Lausten, 2004). This is exactly contrary to what standard economic theory of the family predicts.
3. Child care coverage for the under-3s lies around 7–8 per cent. Research suggests that traditional gender roles prevail notwithstanding the rise in employment among Spanish women (Alvarez and Miles, 2003).
4. Danish legislation has changed and the description mentioned earlier refers to the years covered in this study (1994–2002). Formally, the parental leave system includes a father-leave but in practice the take-up is very low (Pylkkanen and Smith, 2003).
5. The aditional-child penalty is, however, quite modest in the Nordic countries.
6. For an overview of fertility variations, see Brewster and Rindfuss (2000).
7. In the Nordic countries, fertility is curvilinear with respect to education: lower among the least and most educated women, and highest among those with a semi-professional, tertiary education (Bernhardt, 1993; Esping-Andersen, 2002).
8. The mean age of first births in Spain is now 31 (Jurado *et al*., 2003).
9. This feature was also noted by Hakim (2003) in her comparison between British and Spanish women.
10. See, however, Cigno (1991) and, for a rare empirical application, Del Boca (2002). Tolke and Diewald (2003) have examined birth probabilities for Germany focusing primarily on fathers' employment characteristics.
11. The need for more attention to the family's members in empirical research has been stressed by Kooreman and Kapteyn (1990) and by

Del Boca (1997). There are of course exceptions, particularly within the literature on joint labour supply decisions.

12. This obviously depends on the cost structure of day care. In the United States costs (and quality) are far more differentiated than in Europe. For several European countries, Esping-Andersen (1999) estimates that private day care is *de facto* priced out of the market for the majority of working mothers.
13. The Danish government subsidizes two-thirds of the total cost, but the policy operates with a sliding co-payment scale so that the subsidy reaches 100 per cent for low income families.
14. It may also be that higher educated women discount the value of future earnings so as to maximize time investment in their children when they are young. In this case, $u_m(q) > u_m(z_m, \lambda_{\mathrm{m}}, h_m)$ on a lifetime basis (see subsequently).
15. As Ellwood and Jencks (2001) argue, births have more significance for women's life chances than does marriage. However, the fertility decision is increasingly related to the perception of a stable and workable partnership and to the assurance of a stable income.
16. Quality and quantity are seen as interactive and this produces a non-linear budget constraint, so that the couple's lifetime income $I = \pi_c NQ + \pi z$ - (ϕn), *where* π_c is cost of children's consumption and π_z denotes the same for adults (for a further elaboration, see Hotz *et al.*, 1997: 294–297, and Francesconi, 2002).
17. Where HC_m is mother's human capital level, $\partial L/\partial HC > 0$, $\partial L/\partial t_m > 0$, $\partial L/\partial t_f < 0$.
18. Here, of course, we need to condition on household income. High income couples can substitute their own time with purchased time. A more comprehensive approach would include bargaining over all dimensions of home production, but this is precluded due to lack of information.
19. A detailed presentation of included variables is presented subsequently.
20. Fathers' relative care is measured as mother's weekly caring time minus the father's. Mothers' relative earnings are measured as percent of fathers' and mothers' combined monthly earnings so as to approximate as closely as possible wage rates. Mother's education would be an inferior, if not misleading, proxy. For one, the degree of marital homogamy is substantial; for another, higher levels of education are closely associated with a preference for '*Q*' and predicts, therefore, mainly the total parental time (and not the father's relative input) dedicated to children (Bonke and Koch-Weser, 2003). We also estimated fathers' absolute levels of caring time, producing similar results. We omit the regression tables in this article. They can be obtained from stefanie.brodmann@upf.edu
21. This is motivated by two concerns. One, the vast majority of second births occurs within 5 years of the first. Two, since father's dedication to childcare is a key variable in our study this needs to be measured, while the first child is still of pre-school age.
22. See Appendix Table 1 for descriptive statistics of the variables included.
23. Her (log) wage rate is calculated by dividing annual earnings from employment by number of months employed (an hourly wage rate is made impossible due to substantial missing information on hours worked). The wage rate is the preferred measure since it adjusts for current labour supply and therefore captures her *potential* lifetime income better. Zero wages are set to 1 Euro for the log transformation.
24. To capture deliberate initiatives towards additional human capital acquisition, we must exclude employer initiated training as well as possible participation in labour market activation programmes. Differences between the two countries with regard to (post- formal education) professional training are not major. In our sample, 23 per cent of Danish and 19 per cent of Spanish women have participated. There are no reasons to believe that career training is more limited in Spain.
25. We exclude, however, the year after the first birth since mothers are likely to be on maternity leave.
26. Due to multi-colinearity (with mother's log earnings) this is the only employment variable that is feasible. The alternative of omitting her earnings variable was rejected since this is a far

better indicator of (i) her bargaining power, and (ii) her potential opportunity cost.

27. Because the underlying distributions are very skewed, we log weekly care hours.
28. We have experimented with continuous time Weibull regressions that, in theory, should constitute the best fit for duration effects. But the few years available for estimation make it impractical. One possible alternative would be piecewise constant (or piecewise linear) estimations, but the Danish data set prohibits this since there is no information on the month of birth.
29. To estimate the probit model, we treat all ECHP waves as one 'mega-year'. Women who already have a child aged 6+ in the first wave are excluded from our probit sample. As noted, this excludes very few women. The values for time varying co-variates (age and income) are set for the first panel year. These restrictions will, no doubt, create some bias and thus inflate σ.
30. This is clearly not a perfect test but it is our only feasible option. OLS can provide a robust alternative to Maximum Likelihood Estimation (MLE) estimation if the values in one of the two cells of the dependent variable do not exceed 20–25 per cent (Goldberger, 1964). Note also that we are precluded from exercising Heckman's exclusion criterion since there is no variable available that is relevant for first but not second births. This need not damage efficiency if at least one of our *x*s contains sufificient variance so as to induce tail-behaviour in λ (Vella, 1998: 135). This should be the case for mothers' (log) wage as well as for (log) household income. In the OLS regressions, we bootstrap the standard errors.
31. The key effects that we highlight in our analyses do remain robust whether we add or delete other variables.
32. In separate analyses of the EU's SHARE data, the grandparent effect does emerge clearly. While the incidence of grandparental care is rather similar in Denmark and Spain, the *intensity* differs hugely: the average time that Spanish grandparents look after their grandchildren is almost four times greater than in Denmark. We wish to thank Marco Albertini for his help in analysing the SHARE data.
33. The results of our two-stage selection analyses are not shown. The relevant tables can be obtained from stefanie.brodmann@upf.edu.

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References

Ahn, N. and Mira, P. (2001). A Note on the Relationship between Fertility and Female Employment Rates in Developed Countries. *Journal of Population Economics*, **15**(4), 667–682.

Alvarez, N. and Miles, D. (2003). Gender Effects on Household Work Allocation. *Journal of Population Economics*, **16**(2), 227–242.

Andersson, G. (2000). The Impact of Labour Force Participation on Childbearing Behaviour. *European Journal of Population*, **16**(4), 293–333.

Anderson, D., Binder, M. and Krause, K. (2002). The Motherhood Wage Penalty: Which Mothers Pay it and Why? *American Economic Review*, **92**, 354–358.

Baizan, P. (2004). El Efecto Del Empleo, El Paro y Los Contractos Temporales En La Baja Fecundidad Española De Los Años 1990. Paper presented at the 8th Spanish Sociology Congress, Alicante (23–25 September).

Becker, G. (1991). *A Treatise on the Family*. Cambridge, MA: Harvard University Press.

Becker, G. and Lewis, H. (1973). On the Interaction Between Quantity and Quality of Children. *Journal of Political Economy*, **81**, 279–288.

Bernardi, F. (2003). *The Spanish Child Gap: Rationales, Diagnoses, and Proposals for Public Intervention*. Laboratorio Alternativas Working Paper, 13. Fundacion Alternativas, Madrid.

Bernhardt, E. (1993). Fertility and Employment. *European Sociological Review*, **9**, 25–42.

Bianchi, S., Cohen, P. and Nomaguchi, K. (2004). Inequality in Parental Investment in Child Rearing. In Neckerman, K. (Ed.), *Social Inequality*. New York: Russell Sage, pp. 189–219.

Bianchi, S., Milkie, M, Sayer, L. and Robinson, J (2000). Is Anyone Doing the Housework? *Social Forces*, **79**, 186–214.

Billari, F. C., Castiglioni, M., Castro Martín, T., Michielin, F. and Ongaro, F. (2002). Household and Union Formation in a Mediterranean Fashion: Italy and Spain. In Corijn, M. and Klijzing, E. (Eds), *Comparative Research on Fertility and the Family in Contemporary Europe: Findings and Lessons*. New York/Geneva: United Nations.

Blossfeld, H. P. and Drobnic, S. (2001). *Careers of Couples in Contemporary Society*. Oxford: Oxford University Press.

Bonke, J. and Koch-Weser, E. (2003). The Welfare State and Time Allocation in Sweden, Denmark, France and Italy. *Advances in Life Course Research*, **8**, 231–253.

Breen, R. and Cooke, L. (2005). The Persistence of the Gendered Division of Domestic Labour. *European Sociological Review*, **21**, 43–57.

Brewster, K. and Rindfuss, R. (2000). Fertility and Women's Employment in Industrialized Countries. *Annual Review of Sociology*, **26**, 271–296.

Brines, J. (1994). Economic Dependency, Gender, and the Division of Labor at Home. *American Journal of Sociology*, **100**, 652–688.

Browning, M. (1992). Children and Household Economic Behavior. *Journal of Economic Literature*, **30**, 1434–1475.

Calhoun, C. and Espenshade, T. (1988). Childbearing and Women's Forgone Earnings. *Population Studies*, **42**(1), 5–37.

Cigno, A. (1991). *Economics of the Family*. Oxford: Clarendon Press.

Datta Gupta, N. and Smith, N. (2002). Children and Career Interuptions: The Family Gap in Denmark. *Economica*, **69**, 609–629.

Deding, M. and Lausten, M. (2004). *Choosing Between his Time and her Time?* Unpublished paper, Danish Institute for Social Research, (March).

Del Boca, D. (1997). Intrahousehold Distribution of Resources and Labor Market Participation Decisions. In Persson, I. and Jonung, C. (Eds), *Economics of the Family and Family Policies*. London: Routledge, pp. 65–83.

Del Boca, D. (2002). The effect of Child Care and Part-Time Opportunities on Participation and Fertility Decisions in Italy. *Journal of Population Economics*, **15**(3), 549–573.

Del Boca, D., Aaberge, R., Columbino, U., Ermisch, J., Francesconi, M., Pasqua, S. and S. Strom, (2003). *Labour Market Participation of Women and Fertility: the Effect of Social Poliocies*. Report prepared for the Rudolfo de Benedetti Foundation Conference, Alghero (July).

De la Rica, S. and Iza, A. (2004). *Career Planning in Spain: Do Fixed Term Contracts Delay Marriage and Parenthood?* Discussion Paper No. 1192, Bonn: Institute for the Study of Labor (IZA).

Duvander, A. and Andersson, G. (2003). *Gender Equality and Fertility in Sweden*. Working Paper No. 13, Rostock: Max Planck Institute for Demographic Research.

Ellwood, D. and Jencks, C. (2001). *The Growing Difference in Family Structure: What Do We Know? Where do we Look for Answers?* Unpublished Paper, J.F.Kennedy School of Government, Harvard University (August).

Ermisch, J. (2003). *An Economic Analysis of the Family*. Princeton: Princeton University Press.

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

Esping-Andersen, G., (with Gallie, D., Hemerijck, A. and Myles, J. (2002). *Why We Need a New Welfare State*. Oxford: Oxford University Press.

Esping-Andersen, G. (2007). Sociological Explanations of Changing Income Distributions. *American Behavioral Scientist*, **50**(5), 639–658.

Francesconi, M. (2002). A Joint Dynamic Model of Fertility and Work of Married Women. *Journal of Labor Economics*, **20**, 336–380.

Gauthier, A. and Hatzius, J. (1997). Family Benefits and Fertility: An Econometric Analysis. *Population Studies*, **38**(3), 295–306.

Goldberger, A. (1964). *Econometric Theory*. New York: Wiley.

Gonzalez, M. and Jurado-Guerrero, T. (2006). Remaining Childless in Affluent Economies. *European Journal of Population*, **23**, 1–36.

Gornick, J. and Meyers, M. (2003). *Families that Work. Policies for Reconciling Parenthood and Employment*. New York: Russell Sage.

Gustafsson, S. (2001). Optimal Age at Motherhood: Theoretical and Empirical Considerations on Postponement of Maternity in Europe. *Journal of Population Economics*, **14**(2), 225–247.

Gustafsson, S. and Stafford, F. (1992). Childcare Subsidies and Labor Supply in Sweden. *Journal of Human Resources*, **27**(1), 204–230.

Hakim, C. (1996). *Key Issues in Women's Work*. London: Athlone.

Hakim, C. (2003). *Models of the Family in Modern Societies. Ideals and Reality*. London: Ashgate.

Hoem, B. and Hoem, J. (1989). The Impact of Women's Employment on Second and Third Births in Modern Sweden. *Population Studies*, **43**(1), 47–67.

Hotz, V. J., Klerman, J. A. and Willis, R. (1997). The Economics of Fertility in Developed Countries. In Rosenzweig, M. and Stark, O. (Eds), *Handbook of Population and Family Economics*. Vol. 1A, Amsterdam: Elsevier, pp. 276–347.

Jensen, P. (2002). *The Postponement of First Birth: Does it Lead to a Decline in Completed Fertility or is There a Catch-up Effect?* Unpublished paper, Department of Economics, Aarhus University (November).

Jurado, T., Gonzalez, M. J. and Moisy, M. (2003). *Aprroaching the Forties and no Babies!* Paper Presented at 6th ESA Conference (Murcia, September 23–26).

Kohler, H. P., Billari, F. and Ortega, J. A. (2002). The Emergence of Lowest-Low Fertility in Europe. *Population and Development Review*, **28**(4), 641–680.

Kooreman, P. and Kapteyn, A. (1990). On the Empirical Implementation of Some Game-Theoretic Models of Household Labor Supply. *Journal of Human Resources*, **24**, 584–598.

Kravdal, O. (2001). The High Fertility of College Educated Women in Norway. *Demographic Research*, **5**, 187–216.

Kreyenfeld, M. (2002). Time-Squeeze, Partner Effect or Self-Selection? *Demographic Research*, **7**, 15–48.

Lundberg, S. and Pollack, R. (1996). Bargaining and Distribution in Marriage. *Journal of Economic Perspectives*, **10**(4), 139–158.

Martin, S. (2002). *Delayed Marriage and Childbearing*. Unpublished paper, Maryland Population Research Center, University of Maryland (October).

McDonald, P. (2002). *Low Fertility:Unifying the Theory and the Demography*. Paper presented at the Population Association of America Meetings, Atlanta, 9–11 May.

Mincer, J. (1985). Trends in Womens' Work and Education. *Journal of Labor Economics* **3**(1) (Special Issue), S1–S32.

Neyer, G. (2003). *Family Policies and Low Fertility in Western Europe*. Working Paper No. 2003-021, Rostock: Max Planck Institute for Demographic Research.

Olah, L. (1998). *Do Public Policies Influence Fertility? Evidence from Sweden and Hungary from a Gender Perspective*. Research Report in Demography No. 130, Stockholm: Stockholm University Demography Unit (SUDA).

Pylkkanen, E. and Smith, N. (2003). *Career Interuptions Due to Parental Leave. A Comparative Study of Denmark and Sweden*. OCED Social, Employment and Migration Working Paper 1, Paris: OECD Directorate for Employment, Labour and Social Affairs.

Sigle-Rushton, W. and Waldfogel, J. (2006). *Motherhood and Women's Earnings in American, Continental European, and Nordic Countries*. Working Paper No. 454, Luxembourg: Luxembourg Income Study.

Sleebos, J. (2003). *Low Fertility Rates in the OECD countries*. OECD Social, Employment and Migration Working Paper 15, Paris: OECD Directorate for Employment, Labour and Social Affairs.

Stier, L, Lewin-Epstein, N. and Braun, M (2001). Welfare Regimes, Family Supportive Policies, and Women's Employment Along the Life Course. *American Journal of Sociology*, **106**(6), 1731–1760.

Sundstrom, M. and Duvander, A. (2002). Family Divisions of Childcare and the Sharing of Parental Leave Among New Parents in Sweden. *European Sociological Review*, **18**, 433–447.

Taniguchi, H. (1999). The Timing of Childbearing and Women's Wages. *Journal of Marriage and the Family*, **61**, 1008–1019.

Tolke, A. and Diewald, N. (2003). *Insecurities in Employment and Occupational Careers and Their Impact on Transitions to Fatherhood in Western Germany*. Working Paper No. 2003-016, Rostock: Max Planck Institute for Demographic Research.

Vella, F. (1998). Estimating Models with Sample Selection. A Survey. *Journal of Human Resources*, **33**(1), 128–169.

Vikat, A. (2004). *Women's Labor Force Attachment and Childbearing in Finland*. Working Paper No. 2004–001, Rostock: Max Planck Institute for Demographic Research.

Waldfogel, J. (1998). The Family Gap for Young Women in the United States and Britain. *Journal of Labor Economics*, **16**(3), 505–545.

Willis, R. (1973). 'A New Approach to the Economic Theory of Fertility Behavior'. *Journal of Political Economy*, **81**, 14–64.

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Appendix Table 1. Descriptive Statistics of Variables Included

	Denmark				Spain			
	Mean	**S.D.**	**Min**	**Max**	**Mean**	**S.D.**	**Min**	**Max**
Mother								
Age	30.09	4.67	19	47	30.30	4.47	18	49
Education								
Tertiary	0.45	0.50	0	1	0.29	0.46	0	1
Secondary (ref.)	0.43	0.49	0	1	0.24	0.43	0	1
<Secondary	0.13	0.33	0	1	0.46	0.50	0	1
Invests in training	0.18	0.39	0	1	0.14	0.35	0	1
Months employed	7.62	4.53	0	12	3.70	4.65	0	12
Log wage	5.81	2.84	1	9.01	2.85	3.27	1	8.49
Father								
Age	32.93	5.98	20	60	32.57	4.80	19	56
Education								
Tertiary	0.35	0.48	0	1	0.25	0.43	0	1
Secondary (ref.)	0.50	0.50	0	1	0.23	0.42	0	1
<Secondary	0.16	0.36	0	1	0.52	0.50	0	1
Log wage	6.99	1.90	0	8.98	6.27	1.93	0	8.69
Child care time	31.02	24.94	1	97	14.97	19.71	1	97
Log child care time	2.93	1.28	0	4.57	1.53	1.67	0	4.57
Household								
Age of first child	1.54	1.48	0	5	2.09	1.69	0	5
Married	0.58	0.49	0	1	0.96	0.19	0	1
Log household income	10.58	0.31	9.42	11.83	9.49	1.08	0	11.81
Use paid care	0.63	0.48	0	1	0.31	0.46	0	1
Mother training × Father's child care	0.57	1.30	0	4.57	0.26	0.90	0	4.57
Number of observations	624				1702			

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