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# educational attainment on third births in
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## The effect of public policies and educational attainment
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**Abstract**

The standardised rate of third births declined by over 50 percent in Austria between the late 1970s and the mid-1990s. The third birth was also postponed gradually over the years up through 1991-92, after which the tempo of childbearing suddenly increased in response to a change in the parental-leave policy. This new policy inadvertently favoured women who had their second or subsequent child shortly after their previous one. We cannot find any indication that the general decline in third births can be seen as a consequence of women's increasing independence from their husbands at the stage in life we study. Furthermore, it still seems to be more difficult to combine motherhood and labour-force participation in Austria than in Sweden, which is a leader in reducing this incompatibility. These developments reflect the tension between advancing gender equality and the dominance of traditional norms in Austria.

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# 1. INTRODUCTION

Austria experienced a considerable drop in fertility from the mid-1960s to the late 1970, as did most other industrialised countries at the time. Since then the country's fertility level has exhibited only small undulations around a slow downward path (Figure 1). Cohort parity progression ratios (Figure 2) suggest that much of the fertility decline has been concentrated at parities two and above, which means that Austrians have had falling rates for third and higher-order births. (Parity progression ratios at parities 4 and 5 are very close to those for parity 3 and are not shown in the diagram.)

In this paper we provide an account of the patterns in third-birth rates for Austrian women, especially between 1975 and 1996. Beside the pivotal role that third births seem to have had in the recent (slow) fertility decline, they also represent a kind of borderline case between the births that just about 'everyone' has and those that many people feel they can abstain from. In a country with a strong two-child norm[1] (Gisser et al. 1995, pp. 50-59), the third birth is in some sense the first birth that couples may decide not to have. As a mirror image of this, it is also the lowest-order birth that allows a couple with a preference for children to go against the stream. We concentrate, therefore, on the third birth in this first in-depth demographic investigation of childbearing behaviour in Austria.

We focus on the influence of educational attainment and the role of public policies as determinants of the rate at which parents have a third child.

Educational attainment is an indicator of several differences between individuals. It is a measure of talent, income potential, and social status or class. It should also measure individual autonomy, for one would expect more highly educated women to be more independent – of men in general, of their husbands in particular, and perhaps also of general norms in society. Educational attainment also influences fertility indirectly. First, educational aspirations are a determinant of the age at which childbearing starts (if ever), and there is much evidence that age at first birth is important for the timing and extent of subsequent childbearing. Second, educational attainment influences labour-force behaviour. For a mother of two, involvement in the labour force is likely to affect her further childbearing decisions strongly, particularly in a welfare state such as Austria, where social rights and social benefits are tied to participation in the labour market and where child-care facilities are scarce. Labour-force participation affects more than one's income potential. It also provides other elements of gratification and life satisfaction. We believe that more highly educated women probably have an advantage on all these counts.

Conversely, Austrian public policies should tend to reduce individual differences, since all eligible mothers (and fathers) must accept the same rather inflexible arrangements concerning the length and conditions of any parental leave and subsequent childcare. These arrangements probably impede labour-force participation for women who have children. Austrian parents also receive essentially the same monetary benefits during such leaves, irrespective of previously earned incomes. Thus, the reduction in income connected with a birth and parental leave should rise noticeably with the woman's educational attainment, which should create a strong interaction between policy and attainment. By including both of these major dimensions in our analysis, we are able to view each of them in light of the other, and we can pick up tensions between them that influence couples' childbearing decisions.

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[1] In view of the low level of the Total Fertility Rate (Figure 1), the strength of the two-child norm in Austria may be surprising, but it also shows up again in the response distribution for the question on the ideal number of children in the survey that produced the data set we use. About 49 percent of all male respondents and about 51 percent of all female respondents indicated two children as the ideal norm for a family.

Some of these tensions should become apparent through measurable effects on women's labour-force participation, which appears as an intervening factor. Public policy regulations can facilitate or impede labour-force participation for women who have children by being more or less flexibly adapted to the circumstances of the individual during the period of parental leave and later through childcare and workplace arrangements. In this, Austrian family policies that make possible a combination of employment and childrearing constitute an interesting contrast to Swedish policies, say, which are much more generous and flexible. We are able to understand childbearing behaviour in Austria better by approaching our investigation from a comparative perspective, where we use Sweden as our country of reference.

We have picked Sweden for two reasons. First, we know its policies well and are intimately acquainted with previous investigations of third births in this country (Hoem and Hoem 1989; B. Hoem 1993, 1995, 1996; Berinde 1999).[2] The other reason for picking Sweden is that during the 1970s and early 1980s it served explicitly as a model country for the Austrian government in its endeavour to modernise Austrian society and the Austrian welfare state (Fischer-Kowalski 1980, pp. 103-110, 1994, p.96; Tálos and Falkner 1992, p. 201). In particular, the reforms of the maternal-leave policies and labour-market policies of the 1970s were influenced by their Swedish counterparts and were directed toward furthering greater individualism, improving gender equality, and enhancing labour-force participation among women with children. Despite this, class, status, and gender differentials have remained stronger in Austria, whose family policies have adhered far more than Sweden's to notions of private childcare and to traditional views on gender segregation in childrearing and employment. We should be able to shed new light on fertility developments in Austria by contrasting our results on third births in this country to those of Sweden and by taking into account explicitly the ambivalent approach to family policies in Austria since the 1970s. For an overview of Austrian parental-leave legislation between 1957 and 1996 see Appendix B. For a comparison of Swedish and Austrian family policies (parental-leave policies, employment policies for mothers, child-care policies, and family benefits) see Appendix C.

Using intensity (or hazard) regression analysis we display a consistent and sometimes surprising story about the influence of educational attainment on third births. It has been much harder to pick up direct consequences of public policies. As is often done, we have represented such features by including a period factor among our explanatory covariates and have grouped the calendar years of observation into periods that reflect both economic trends and reforms in Austrian parental-leave and childcare provisions as well as general workplace arrangements. We know from previous experience with other data sets, however, that this method is inefficient and likely to pick up effects only of major economic shocks and massive public interventions. True to form, our period factor turns out to reflect mainly the secular decline in third births, of which we already observed one aspect in Figure 2. As in so many other countries, most Austrian family policies have developed gradually and we should expect their effects to build up cumulatively over time and to become perceptible only when they have worked over a considerable amount of time. A period-factor covariate in an intensity-regression analysis is not an efficient instrument for detecting such effects.

One policy feature is different, however, and it has had much more noticeable effects. As of July 1, 1990, Austria extended its parental-leave period by one year. Although this

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[2] Third births have been given special attention in other countries as well, notably Great Britain (Wright et al. 1988; Ní Brolcháin 1993), Norway and the United States (Kravdal 1992). But they all fit into the same pattern, and we believe that the utility of further cross-national comparisons would be minor at this time and for our purposes.

hardly was the intention behind the prolongation, it favoured women who brought their second or higher-order birth forward, and we are able to show (for third births) that Austrians subsequently reacted by increasing the tempo of childbearing. This change in the timing of the third birth constitutes a reversal of a slow postponement that had occurred over the preceding two decades. Unless some other explanation can be given for this reversal, this should show that public policies might indeed affect childbearing behaviour, as was previously shown for Sweden (Hoem 1993b).

We suppose that the development of Austrian policies on maternal (and later paternal) leave may have served as a cushion against a stronger decline in fertility in the short run. What happens in the long run may be a different matter, however. It is possible that current Austrian policies may tend to preserve the comparatively low present level of fertility by failing to facilitate sufficiently the combination of motherhood and labour-force participation.

## 2. DATA, METHOD, AND PRESENTATION

Our data comprise retrospective individual-level life histories from the Austrian Family and Fertility Survey, which was conducted in 1995/96 (Doblhammer et al. 1997). In the survey, retrospective histories of partnerships, births, employment, and education were collected for 4,581 women and 1,539 men between the ages of 20 and 54. The overall response rate was 72 percent (Integral Markt- und Meinungsforschungsgesellschaft 1996), which is good for a study of this content and scope in present-day Austria (Birgit Weiss, personal communication). Our analysis is based on the records of female respondents who had at least two surviving children from the same marital or nonmarital union, which we will call her *birth-union* for short. (Very few unions in our analysis are non-marital.) Records were censored at a twin birth of order 1 or 2, at the adoption of any of the first two children, and at the death of a child, at union disruption, or at the death of a partner. We would also have censored records at the adoption of the third child, but we found no such cases.

Almost 3,000 of the original 4,581 records for women were excluded due to the focus of our study. In addition we excluded a very small number of records because they were in-complete or visibly erroneous.[3] We ended up including 1,623 women in our analysis. They had 519 recorded third births. To prevent reverse causality between the respondent's em-ployment and educational history on the one hand and the birth of a third child on the other, we backdated the event under study to seven months before the third birth. This is the time when the respondent must have been sure she was pregnant. For the first and second birth, we used the recorded month of birth.

We have used only categorical covariates in our intensity regressions, and our baseline intensity is piecewise constant. Our basic duration variable is the age of the second child. Our analysis produces maximum-likelihood estimates for the regression coefficients of the inten-sity model. We present them in the form of relative risks. The procedures are well known (Cox 1972, Kalbfleisch and Prentice 1980, Andersen, Borgan, Gill, and Keiding 1993, Lancaster 1990), to demographers perhaps mostly through the work of Tuma and Hannan (1984), Allison (1984), Yamaguchi (1991), or Blossfeld and Rohwer (1995). J. Hoem (1987, 1993a) has reviewed their connections with life-table and standardisation methods otherwise common in demography.

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[3] For a more detailed account, see Table A3.

We are fortunate in having information about educational attainment not only for each female respondent but also for her husband or partner in the birth-union. This allows us to investigate the relative role of the educational attainment of each member of the couple. By concentrating on third rather than earlier births, we get satisfactory variation in individual educational attainment as well as in the values on the intervening variables. For the *respondents* we have essentially complete educational biographies, and we have used them to develop a time-varying covariate in the intensity-regression analyses that we perform. Very little educational activity is recorded after the start of the birth-union for either male or female respondents, however, and even less after the second birth. Our results would have remained the same if we had used the attainment by the time of the second birth or at union formation as a fixed covariate. For their *partners* all we have is the attainment at union formation, which we have used as a fixed covariate. For both categories we can argue as if all education has been completed before childbearing begins.

In accordance with our theoretical considerations and in compliance with the given data, we have followed common practice and grouped our regressors into (i) those that represent *social background* (number of siblings, religiousness), (ii) indicators of *demographic outcomes* (respondent's birth cohort, her age at first and second birth, age of her partner at second birth, sex of the first two children, whether the birth-union was her first or second union or of a higher order, and current civil status in any month of observation), (iii) variables that reflect *educational attainment* and *labour-force behaviour*, and (iv) a period factor designed to reflect economic trends and the development of parental-leave policies.[4] We have run them through our regressions in a stepwise procedure in which the covariates are entered in a systematic sequence. Causally more distant factors are entered before those that are causally closer to the childbearing behaviour that we are examining. Covariates that have entered the regression at one stage may be removed again at a later stage to keep the number of covariates manageable at all times. We have done this whenever the values of their regression coefficients turn out not to be influenced noticeably by the inclusion of other covariates and if, conversely, removing them does not affect appreciably the values of covariates more central to our current topic. We do not hesitate to remove peripheral covariates even if they have significant regression coefficients. This removal constitutes a misspecification of the intensity model, but the misspecification is harmless and therefore acceptable, as we have discussed elsewhere (J. Hoem 1992, 1995).

Many of these covariates have been included as control variables to avoid confounding. Their regression coefficients have turned out to have the properties usually found in such studies, e.g., the very religious have higher third-birth intensities than others, respondents with three or more siblings have higher intensities, a short interval between the first two births is associated with an increased third-birth intensity, and so on. We do not report much about such features in what follows. In order not to disturb our main story line, we only display the highlights of our experiments. Further documentation can be found in Appendix A.

### 3. THEORY

*3.1. Educational attainment*

In our analyses, a couple's educational attainment is reflected in the educational level attained by the respondent (in any month of observation) as well as that of the partner (at

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[4] The distribution in our data across the levels of various representations of these variables can be seen in Tables D2 and D3.

union formation). In both cases we have grouped their educational level by attainment into (i) basic schooling, (ii) lower-secondary education, (iii) upper-secondary education, and (iv) tertiary education. If the partner has a higher level of education, we suppose that the family can better afford a third child. The educational attainment of the respondent has an income component as well, but it also has an additional range of functions in our analysis. In contrast to many other demographers, we expect women with an education classified as 'high' to have at least as high a level of fertility as women from other educational groups. This is consistent with the pattern in Sweden, where women on the highest assigned educational level have significantly elevated intensities for a third birth (B. Hoem 1993, Table 5; Berinde 1999, Table 7; Ermisch, 1989, has reported similar findings for the U.K.). At the very least, we assume that they do not have lower intensities than others (B. Hoem 1996, Table 1), and we can think of several reasons for such a pattern.

First, women with a 'high' level of education can better afford a third child in general and they may be better at making use of the advantages of the public system. This effect may be at least as strong as the effects of other factors, such as differential family-orientation, female independence, or opportunity costs. Neo-classical economics as well as the narrative of the second demographic transition build on the assumption that more highly educated women want fewer children than others, strive for greater independence from family life, and have higher opportunity costs than other women. Faced with findings like those we just described for Sweden and the U.K., economists (who normally focus on monetary aspects of behaviour) would say that income effects are stronger than substitution effects.

Secondly, we want to contest some of the basic notions concerning education. We believe that the theoretical and empirical basis for common expectations about the effect of educational attainment on childbearing behaviour is suspect, at least for third births, much in the same way as Oppenheimer (1995, 1997) has been critical of common notions of the impact of education on marriage formation. We do not find it self-evident that a higher degree of individualism among women must lead to a lower level of natality at the life stage that we are studying. We doubt that respondents in our most highly educated group necessarily have less family-oriented values than other women, and we are not even certain that the best educated have the highest total opportunity costs in all societies. Selectivity and the peculiarities of the definition of educational levels in a small data set may both contribute to playing havoc with conventional notions. Here is why.

(1) General expectations about highly educated women may really only pertain to a small group consisting of the very highly educated, if they apply at all.[5] Such women may be too few to appear as a separate group; this is certainly the case for our data set. A large part of the women we have assigned to the tertiary level of education are in the teaching professions. We would expect female teachers to have at least as strong a family orientation as other women. In fact, their choice of occupation may reflect such an orientation.

(2) Perhaps the advantages of education are reinforced in Europe, and certainly in Austria and Sweden, by the fact that the public sector is the most important employer of better-educated women in these populations. Since people employed in the Austrian public sector so far now have had more protective labour contracts than most others (as is typical of European countries), it may be easier for them to combine work and parenthood. For this reason, it is not even certain that more highly educated women who interrupt their employment after childbearing (as almost all eligible women in Austria do) will always have higher total 'opportunity costs' than other women.

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[5] Kathleen Kiernan has expressed similar sentiments in oral discussions.

(3) Individual autonomy may entail preferences quite different from what researchers usually focus on, namely career prospects and income potentials. Autonomy is not necessarily a one-way street to fewer children. Rather, it may be a question of realising one's reproductive choices even when they deviate from the societal norm. Suppose that better educated women have greater freedom to transgress existing rules. Why should their preferences then necessarily be toward having *fewer* children than the two-child norm? What if the deviation consists in having rather than abstaining from a third child, especially since having no children – or only one child – has been the legal and cultural norm imposed upon educated women well into the twentieth century? Advocates of gender equality have strongly backed a woman's right to *both* having a satisfying job *and* choosing the number of children she wants, and have been demanding public policies that facilitate this for quite some time. (For Austria, see Neyer 1984, Anderson 1992.) At issue is the question as to whether actual policies have supported or hampered their demands (Neyer 2000a, 2000b).

(4) Women with 'high' educational attainment who have had two children are a select group (Heckman et al. 1985) and have already manifested a certain preference for children. It is possible that women for whom personal independence is important are strongly underrepresented in our data segment and that the more highly educated women whose records we analyse value a different kind of independence, namely independence from the existing two-child norm. These women, who have a better-situated husband on average, may prefer to make use of the better opportunities and the greater freedom of their social class to go beyond that norm (Tölke 1989, 1993). Such preferences were documented in the recent Austrian Population Policy Acceptance Survey, where the percentage of mothers-of-two who wanted another child increased with educational attainment (Gisser et al., 1995, p. 51, Table 16; see also their p. 54, Table 20; for preference persistence over the 1980s, see their p. 57, Table 22). Note that women with no more than basic schooling fell outside this pattern and had a stronger preference than other women for a third child.

### 3.2. Employment history

It is desirable to include some representation of a woman's employment history in a study of third-birth rates, since the level of the third-birth intensity for those who have an attachment to the labour market relative to those who do not (when all else is equal) may indicate how difficult or easy it is to combine parenthood with gainful employment. Moreover, any change in employment status from before to after a birth might be a sign of significant revisions in the woman's employment and childbearing plans. There is no single, evident way to represent a woman's employment experience for our analysis, however, and we have carried out extensive experiments to avoid confounding it with the factors we focus on, namely, educational attainment and public policies. Despite all this effort we have not come to any shattering new conclusions about the role of labour-force attachment in third-birth behaviour. As it is 'only' a control variable in the present picture in any case, we leave out an account of the procedures we used and most of our findings to Appendix A, so as not to disturb the main story line here.

### 3.3. Public policies and economic trends

In an attempt to capture the effects of changes in family policies and the country's economic performance, we include (as a time-varying covariate) the *calendar-time period*, split into six distinct sets of calendar years, which we have determined as follows.

Major changes in Austrian family policies in recent decades (see our Appendix B) and

the fact that there were no exposures in our data before 1960 and only a small number of third births recorded in 1961-1973 led us to define a first calendar partition as 1960-1973, 1974-1990, and 1991-1996. In a second step we split these periods in order to capture economic up- and downswings in Austria. This gives the following set of calendar periods: 1960-1973 (high economic growth), 1974-1979 (fluctuating economic growth), 1980-1987 (low economic growth), 1988-1990 (high economic growth), 1991-1992 (declining economic growth) and 1993-1996 (low economic growth). We expect higher intensities of the third birth event during periods of economic upswings and when family policies became more generous, though we are sceptical as to the strength of the effects we can pick up in this manner. We do expect our period variable to reflect the downward secular trend in third-birth intensities suggested by Figure 2, however.

One feature of Austrian parental-leave regulations deserves special attention. From before our period of observation (since 1961, in fact) and until 1996, a woman who had once claimed (paid) maternity leave (or later: parental leave) was entitled to another such paid leave after a subsequent birth, provided she had been in insurable employment for at least twenty weeks during the year before this birth. The duration of active employment could actually be shorter than twenty weeks since the compulsory maternity protection period (*Mutterschutzfrist*) was normally counted fully as part of the twenty-week employment requirement. In principle, the *Mutterschutzfrist* begins eight weeks before the expected date of delivery and lasts until eight weeks after the actual birth. (In some cases this is extended up to twelve weeks after delivery.) Moreover, all employment requirements are waived if the maternity protection period for a new pregnancy begins while a woman is still on parental leave from her previous birth.

Starting in 1961, the (optional) paid maternity leave lasted until the child's first birthday. Effective as of 1 July 1990, it was extended to last until the child's second birthday. So long as the parental leave was 'only' a year, the waiver of employment requirements had little practical consequence, as only very few women got pregnant quickly enough after a birth to take advantage of it. Once the period was extended to two years, parents who intended to have another child had an incentive to make sure that it was conceived in time for this regulation to come into play.[6] We therefore expect to find an increase in the tempo of childbearing (for third births) in the period that followed. This should show up when we run an interaction between our period variable and the age of the second child.[7] One advantage of the version of intensity regression that we use is that it is no problem to compute such an interaction with the basic duration variable.

## 4. RESULTS

### 4.1. Secular trends

As expected, Austrian third-birth intensities declined over the birth cohorts involved (Table A1, first page) and the decline continues to be picked up when we switch to the calendar period as the bearer of secular trends (Table A1, page 2). Other coefficient estimates are not influenced much by this change of covariate. As we suspected, for the most part we cannot discern much specific influence on period trends of (changes in) family policies or of

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[6] Moreover, since 1990, mothers are entitled under certain circumstances to parental leave payments after a second or higher-order birth if their (paid) maternity protection period starts within 6 weeks after their previous parental leave (12 weeks since 1995).

[7] Even though the extension was made in the middle of 1990, we have assigned all of 1990 to the preceding period on the assumption that fertility reactions to the reform could not be immediate.

economic fluctuations. Changes in public policies may have softened the downward path of third-birth intensities in Austria, but if they did, we have no way of detecting this with our model specifications, with the following single possible exception. As we have mentioned, there was a significant extension of the parental leave as of 1 July 1990, and this may well have helped to produce the reduction in the <u>rate</u> of decline that we can observe thereafter. The reform also has further consequences, which we discuss in the following.

Our use of a piecewise constant baseline intensity facilitates a check of the proportionality assumption in the hazard specification. If we run an interaction between the basic duration variable (i.e., the age of the second child) and any other covariate, the interaction with the period factor reveals that there is a significant difference between the baseline intensities in the various periods ($p=0.000$). We have plotted selected baseline hazards in Figure 3. (In order not to clutter up the diagram, we have left out the curves for 1974-79 and 1980-87. They fall neatly into the progression of the plotted curves.) Evidently, the duration profile moved toward the right between 1960-73 and 1991-92, which means that over that stretch of time Austrian couples postponed their third births progressively, in addition to reducing the corresponding natality level. By 1993-96, however, a substantial portion of the third-birth intensity moved back toward the left and the corresponding baseline curve acquired two peaks, one in the second and one in the fifth year of the second child's life. (The first peak is significant at $p = 0.039$.)

As we expected, it appears that the parental-leave extension in mid-1990 led many Austrian women to increase the tempo of their childbearing in order to benefit from the changes in parental-leave regulations for higher-order births. If a sufficient number of couples did so while a considerable segment followed natality patterns from preceding years, this could produce a bimodal intensity curve like the one observed for 1993-96. This profile would be in keeping with a situation where knowledge about the 'speed premium' (as it has been called in Sweden; see J. Hoem 1993b) spread gradually through the population. Slow diffusion may also explain why we cannot discern much immediate reaction to the new possibilities already in the period 1991-92. When Sweden introduced a 'speed premium' in 1980 and extended it in 1986, the new benefits were widely publicised and people adapted their childbearing behaviour quickly (J. Hoem 1993b, Andersson 1999). In Austria the possibility of easier access to parental leave benefits for higher-order births did not get similar publicity.

In fact, the motivation for the Austrian leave extension seems to have been quite different from what it was in Sweden and the increase in tempo must have been an unintended side effect. The law was changed partly to prolong a woman's stay at home and to reinforce the separation between childrearing and labour-force participation. Although calculations suggested that the extension would increase public expenditure, one also thought that this increase would be limited, because women would stay out of the labour market longer and would accumulate less benefit entitlement as a consequence. How difficult it was for policy-makers to foresee the public's reaction is demonstrated by the unexpectedly large rise in public expenditure that followed when couples had their children faster instead. As a consequence, family benefits were cut in 1995 and 1996. This is likely to have contributed to the further reduction in Austrian fertility in subsequent years.[8]

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[8] The length of (paid) parental leave for one parent was reduced by six months and the employment requirements for parental leave benefits in case of subsequent births were extended. Birth benefits and the higher parental-leave benefits for single mothers and lower-income families were eliminated, totally or in part. For details see Neyer (2000a). All of this occurred after our period of observation.

## *4.2. Educational attainment*

*The woman's educational attainment*. When we include in the analysis the *respondent's* own educational level in each month of observation and use her age (in 'absolute' years) at second birth as a fixed covariate, then the educational variable contributes significantly to the model and women with a tertiary educational level have noticeably <u>higher</u> third-birth intensities than other comparable women. The first column in Table 1 contains the relevant effects (Model 1; we regard a *p*-value of 0.095 as sufficient for significance in this small data set).[9]

The interaction (not displayed here) between the educational and age variables reveals, however, that this elevated fertility of the highly educated is entirely due to a greatly increased third-birth intensity for respondents with a tertiary education whose age at second birth is 24 years or lower. This age is very low in comparison to other women with a tertiary education. Only nine per cent of our respondents with a tertiary education have their second child before age 25. By comparison, a total of 55 per cent of our respondents with no more than basic schooling had their second child before age 25. Women's second births occur at widely discrepant ages in the respective educational groups.[10] What is quite common childbearing behaviour for one educational group is quite unusual for the other. In other words, absolute age attained at second birth must have a different meaning for women at different educational levels, as has been pointed out before by B. Hoem (1996). We have therefore partitioned the individual women's ages at second birth roughly into quintiles for each educational group separately and have used this grouping as a new 'relative' age variable in our analysis. With this replacement, the respondent's educational attainment loses its significance and the elevated fertility for the highly educated largely disappears (Model 2 in Table 1).

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[9] Table 1 summarizes the most important findings of the more extensive Table A2.

[10] See Table A3a.

**Table 1. Effects of educational attainment**

| | Effects of respondent's attainment | | | Effects of partner's attainment |
| | with absolute age of respondent in model | with relative age of respondent in model | | |
| | Model [a] 1 | Model [b] 2 | Model [c] 3 | Model [c d] 3 |
| --- | --- | --- | --- | --- |
| Educational attainment | *0.095*[e] | *0.150* | *0.523* | *0.000* |
| basic | 1 | 1 | 1 | 1 |
| lower secondary | 0.86 | 0.83 | 0.87 | 0.60 |
| upper secondary | 0.86 | 0.79 | 0.80 | 0.67 |
| tertiary | 1.33 | 1.10 | 0.96 | 0.89 |

NOTES:

[a] Absolute age of mother at second birth, grouped into 16-22, 23-24, 25-26, 27-28, and 29-40 years. Model 1 does not include partner's educational attainment.

[b] Age of mother at second birth, grouped separately into five quintiles for each individual educational level. Model 2 also excludes the partner's educational attainment as a co-variate.

[c] Model 3 has age of mother grouped relative to educational attainment as in Model 2, but it also includes the partner's educational attainment.

[d] All these intensity models include the following additional covariates: interval between the first two births, calendar period, indicators of the respondent's labour-force attachment, and age of second child (our basic duration variable). Model 3 includes additionally partner's age at birth of the second child. Further standardisation with respect to the respondent's religiousness and number of siblings makes no difference.

[e] *p*-values for covariates are given in small italics.

Source: Own computations based on the Austrian FFS.

Evidently, educational attainment is a strong determinant of the age at second birth, and it influences subsequent childbearing indirectly via this age. In principle, it could also have a direct influence on third-birth intensities, but we have not found any. When the relative age at second birth has been fixed under the influence of the woman's educational attainment, there is essentially no difference in third-birth intensities between women at the various educational levels. In particular, when we know the life stage at which a highly educated woman has her second child as compared to other women on the same educational level, she does *not* have a lower third-birth intensity than a corresponding woman with less education. There may be differentials in female autonomy between the educational groups, but this does not affect the third-birth intensity. Those who would prefer to use absolute rather than relative age at second birth are faced with the fact that the corresponding 'results' contradict conventional autonomy arguments even more strongly.[11]

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[11] We get completely parallel results when we replace absolute or relative age at second birth with the corresponding age at first birth (not displayed here). Using the absolute instead of the relative age at first or second birth may in fact amount to a harmful misspecification of the intensity model.

*The educational attainment of her partner.*[12] For our female respondents, the impact of their partners' educational attainment on third births depends only weakly on our model specification, but it is always strongly significant.[13] The regression coefficients suggest that, at least for third births, there may be two patterns of childbearing behaviour in Austria, much as Lesthaeghe recently described for Belgian cohabitants (Surkyn and Lesthaeghe 1996, quoted by Lesthaeghe 1998, p.11). Austrian families in which the husband has no more than basic schooling have higher third-birth intensities than other families.[14] In families in which the husband has a lower-secondary education or more, the third-birth intensity increases monotonically with the man's educational attainment. (For a case in point, see the last column in Table 1.) It seems that social classes form subcultures with different norms as to the appropriate goals in life (Lesthaeghe 1998, p. 9).

Something important happens when we add the partner's educational attainment to our regression. As we see in Table 1, the respondent's own educational level loses significance completely and its estimated regression coefficient is reduced. Once we control for her age at second birth,[15] the educational attainment of the woman appears to function mainly as a signal of what educational level her husband has. When we know the latter, the influence of her own attainment on natality vanishes.[16] These results may indicate that the husband's social class and the norms tied to it may have an important influence on childbearing behavior in present-day Austria.

## 5. DISCUSSION

### 5.1. Conformity or increasing autonomy among women?

As we have seen, there is a remarkable lack of any effect of the respondent's own educational attainment in our Austrian data, even when we leave her husband's attainment out of the analysis. (This is in keeping with corresponding findings for Sweden by B. Hoem, 1996.) We interpret this as an indication that women's educational attainment influences their third-birth intensities mainly via its impact on the age pattern of their own childbearing behaviour as they start their family-building process. Furthermore, we learn a lot about the husband's educational level once we know a woman's own attainment. His characteristics (as far as we know them) are important for the rate at which the family has a third birth. Once we control for her age and his educational attainment, there does not seem to be any further (direct) impact of her educational level on the third-birth intensity.

In many ways, these features go against the grain of the notion of increasing female autonomy that dominates existing theory about these matters. If autonomy means a woman's independence from men, it should be particularly disconcerting that any impact of the wife's educational attainment on third births is overshadowed by her husband's attainment. This may be an indication of general power relations in Austrian marriages.

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[12] See our Appendix A3.7 for details on how the educational attainment of the partner was coded.

[13] See the second page of Table A1 (Model II) and columns 3 and 4 of Table A2.

[14] We noted a similar pattern in preferences for another child among mothers-of-two in the Austrian Population Policy Acceptance Survey; see Section 3.1 above.

[15] We get equivalent results if we replace age at second birth by age at first birth.

[16] One might suspect that an identification problem could produce this finding, but we doubt it. We have checked and not found any indication of a linear relation between the wife's and the husband's educational attainment, or of anything close to it.

One could perhaps try to interpret the clear downward trend that we have found in third-birth intensities for married women as a manifestation of progress in their autonomy in general, but if that were the case, it does not seem reasonable that it should affect women on all educational levels uniformly. Demographic theory would lead one to expect increasing mental and economic independence to spread like an innovation process. If it were to have consequences for third births, women on our highest educational level should have <u>lower</u> third-birth intensities than other women at any point in time – which they conspicuously do not.

If arguments based on the growing independence of Austrian women from their husbands are unwarranted, an explanation of the drop in Austrian third-birth rates must be sought elsewhere. We believe that increasing opportunity costs connected with the third child in general may be part of the story, as labour-force participation among women seems to have increased over much of the period we study, while there was little corresponding growth in job-and-parenthood compatibility after the maternity leave. Even though labour-force participation is included among our covariates, we probably have limited control over compositional effects of this variable, so some further documentation would be valuable. Unfortunately, it has been difficult to get reliable documentation on any growth in labour-force participation in the relevant population segment. Increasing rates of labour-force participation do show up in diagrams for women of all parities, as published by Cyba (1995, p. 439, Graph 1) and Biffl (1995, p. 375, Graph 5). This is also true for married Austrian women with two children below age 15 (minors), which is more relevant for our argument (Figure 4). However, women on leave from a job should normally be included in the labour force by definition, so some of the observed increase must reflect extensions in women's rights to maternity/parental leave rather than a genuine growth in the amount of labour-force participation. (Note the spurt in labour-force participation rates after 1991 in both curves for Austria in the same Figure 4.) We have been unable to locate a time series based on data that eliminate women on maternity/parental leave for a substantial part of our period of observation.

The fact that unemployment has risen for both men and women over most of our study period (Cyba 1995, p. 443, Graph 3; Biffl 1995, p. 373, Graphs 2 and 3) may be an equally (or even more) important factor. Men's unemployment is important for fertility trends in any population, particularly in a country where the man is the sole income-earner in a large portion of households with children, as is the case in Austria. (Compare the emphasis that Oppenheimer et al., 1997, put on the impact of men's career developments on first-marriage rates in the United States.) Increasing difficulties in acquiring adequate housing for a growing family (Gisser et al. 1995, p. 62) may be another element in this story, as may improved fertility control through better contraceptive usage. It would go well beyond the scope of the present paper to pursue these ideas. We leave them to future research.[17]

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[17] Here is some documentation based on material published by others:
(1) Housing costs increased considerably in Austria, especially during the 1990s, and families found themselves spending an increasing part of their income on housing. Almost a third of the 20-39 year-old respondents in the recent Austrian Population Policy Acceptance Survey said that inadequate housing conditions are an important (very important or rather important) reason for not having children (or for not having another child). Among the respondents aged 20 to 39 who had two children, 25.9% stated that their housing conditions were a (very or rather) important reason for not having another child (Gisser et al. 1995, p. 62).
(2) For whatever it is worth, we also note that the proportion of second births that were reported as planned in our data set rose steadily from about half in the years before 1974 to above 80 percent in the mid-1990s.

*5.2. More about the incompatibility of motherhood and labour-force participation*

Here is a short summary of our results concerning the influence of the respondent's recorded employment history on her third-birth intensity. (See Appendix A for a more extensive report.)

We have found that respondents with a stronger attachment to the labour force have significantly lower third-birth intensities than women with little such attachment.[18] We are struck by the fact that no significant difference in this direction appeared in recent Swedish studies (Hoem and Hoem 1989, B. Hoem 1993, Berinde 1999). We believe that the greater relative difficulty of combining motherhood and labour-force participation in Austria may explain this contrast between the two countries and that this may be an important factor in the differentials of recent fertility developments in Austria and Sweden.

Public policies in Austria seem to place considerably less stress on issues of gender equality and seek to promote women's labour-force participation less consistently than is the case in Sweden. Swedish family and labour policies (and collective labour contracts) are designed to make it feasible for families to have both children and a working mother (a policy called *arbetslinjen*), and policies and wage settlements have developed under the assumption that both adults in a family have an income of their own. Austrian polices have some similar features, but they have not pursued these goals as vigorously. The policies appear to be based more on traditional notions of the non-employed mother as the primary childrearer. The policies largely segregate family obligations from labour-market participation and offer much less of a systematic infrastructure to facilitate a combination of activities for mothers and fathers of small children. Austrian women even work part-time much more seldom than Swedish women do (Figure 5). In a nutshell, we believe that the greater generosity of the Swedish system and the greater flexibility of arrangements offered to its families are important reasons for the differences that we observe. The details of this assessment have been spelled out elsewhere. The details of this assessment have been spelled out in Appendix C.


*5.3. Summing up*

Third-birth intensities have declined in Austria over our data period, but we have not found much that could be interpreted as effects of increasing female autonomy, at least not if that is to be understood as an increase in the independence of women from their husbands. What we do see in Austrian childbearing behaviour are effects of a persistent conformity to traditional social norms. There is a considerably stronger incompatibility between motherhood and labour-force participation in Austria than in Sweden, which we have picked as our country of reference. In this light, Austria appears to be a country that has hesitated to put its money on gender equality and that has retained much of the old spirit of family-role specialisation. It may not be a particularly extreme case in this spectrum. The accounts by Schiersmann (1991) and Hantrais (1994) of family policies in Germany suggest that the ambivalence we have noted in Austria's policies and the demographic effects they produce may be typical of the current situation in Central Europe.

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[18] See Appendix A3.8 for such details.

**ACKNOWLEDGEMENTS**

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### APPENDIX A. MORE DETAILS ABOUT OUR INVESTIGATION

To avoid overloading our main text with too many technical details about our procedures and covariates, we have collected further details in this appendix.

### A1. INCLUSION AND EXCLUSION OF RECORDS

Fully 2953 of the original 4581 women in our achieved sample were ineligible due to the focus of our study. In addition we have excluded a very small number of records (namely five) because they are incomplete, as described below. A count of the various exclusions is given in Table A3. We ended up including 1623 women in our analysis. They had 519 recorded third births. The remaining 1104 records were censored at the death of the first child if it occurred after the birth of the second (and before the censoring date), at the death of the second child if there was a record of such a death, at the date of any disruption of the birth-union, or at interview, whichever occurred first.

We have excluded from our analysis those who had one or both of their first two children outside of any union or who had them in different unions, because their childbearing behavior is likely to be different (Vikat, Thomson and Hoem 1999). For similar reasons we have excluded records where the respondent lost her first child before the second birth, adopted rather than gave birth to her first or second child, had twins at the first or second birth, had an interval of more than seven years between the first two births, or was over 36 years at first birth. We have also excluded women who were pregnant with their third child at interview. (We cannot know whether the pregnancy would result in a live birth, and our analysis is about live births.) Furthermore, we have excluded five women for whom we had no record of their numbers of siblings (for we wanted to use this information in our analysis). Similarly, we have eliminated a few records where information was lacking about religiosity or about the partner's age at her second birth when those covariates were included in the regression. We have also excluded the records of eleven women who had no recordable individual exposure time because they were interviewed in the month of birth of their second child, broke up their union in that month, or had some other special circumstances. Finally, we have excluded the small number of respondents (58) who were recorded as non-Austrians (see table A.3) at the time of the interview, mostly because non-Austrian interviewees are not representative of the corresponding sub-population in Austria. Their "sample" is skewed by over-representation of German nationals and of respondents with higher education. In general such records also notoriously caused problems during data collection, so the validity of the

data is in doubt (Christiane Pfeiffer, Johannes Pflegerl, personal communications) and we are none too sure about their quality. It has not seemed worth the risk of including in our analysis the few cases in our data set.

To sum up, we have excluded very few records because they are incomplete or visibly erroneous; most excluded records were ineligible because of the focus of our study.

## A2. METHOD

Our analysis is based on intensity (or hazard) regression. This method efficiently allows us to make use of even incomplete life histories and to study the simultaneous effects of several explanatory variables and circumstances on the behavior (or life-stage transition) of interest. It enables us to find the specific effect of one covariate while all other covariates included are held constant. We have used only categorical covariates and have specified the baseline intensity to be piecewise constant. We permit interactions between covariates and use interactions between a covariate and the duration variable to allow the baseline hazard to vary across the levels of the covariate. Such interactions with duration enable us to test (and possibly remove) the proportionality assumption of the intensity-regression model for each covariate. In particular, an interaction with our period factor is used to pick up any change in the profile of third-birth risks over calendar time.

Our time (or duration) variable is months since second birth (or equivalently the age of the second child, computed in months), and we have partitioned the duration axis into seven intervals corresponding to the years of the second child's life (age 0, 1, 2, 3, 4, 5-6, 7 or more). We behave as if transition rates were constant in each of these intervals.

Dates are given to the accuracy of a calendar month in our data. Our computations are made as if the interview and all demographic events happened in the middle of the calendar month. As we will describe below, we include a grouping of calendar years into periods in some of our analyses. Since calendar years obviously do not end in the middle of a month, we work with a time unit of half a month. For this reason, our exposures are computed in half-month units. (This information may facilitate perusal of the column of exposures in Tables A4 and A5.)

## A3. COVARIATES

### A3.1. Respondent's birth cohort

To catch effects of value changes and residuals left after the inclusion of other covariates, demographers typically include the respondent's birth cohort in their analysis, and so do we some of the time. We have grouped our respondents into the cohorts from the 1940s, 1950s, 1960s, and a residual group born in the 1970s. As we added variables in our stepwise regressions, the birth-cohort covariate became dangerously close to a linear combination of other variables that are more interesting and better grounded in theory, however, and at that stage we removed the cohort variable again.

### A3.2. Character and order of union

In Scandinavian and perhaps some other countries, cohabitation is quite prevalent even among women with two children. Berinde (1999, Table 7) found twice as high third-birth intensities among married Swedish women as among comparable cohabiting women. Evidently, marriage remains an important indicator of a family-oriented life style in that country. We similarly initially considered including a time-varying covariate to indicate

whether the respondent lived in a marital or nonmarital union in any month of observation. When we found that married women account for about 99 per cent of the time of exposure to the 'risk' of a third birth event in our data (see Table A5), we dropped the idea. At the stage in a couple's life that we investigate, cohabitation is very uncommon in Austria.

We also contemplated including the order of the birth-union as a covariate in order to test whether women might have a different natality in a higher-order union. Since 97 per cent of all women included in our study had their first two children in their first union, the prospects of any interesting findings with respect to this variable are bleak and we have left it out.

Even though it has little consequence in the present data set, we mention (for the sake of completeness) that union order is computed consecutively and does not change if a union is converted to a marriage after starting as a nonmarital cohabitation.

### A3.3. Religiousness

Since Austria is a dominantly Catholic country, we would expect individuals with a religious inclination to have higher natality than others. To avoid contamination of effects more central to our study, we have thought it wise to include a corresponding factor in our analysis. Since the strength of our respondent's own religiousness is measured at the time of the interview, it is debatable how one should represent it in our data. We have followed Hoem and Hoem (1989) in taking religiousness to be a stable personal trait for which it does not matter much at what adult age it is measured, and have used the respondent's own statement as to whether she is religious as a sufficiently accurate indication. The information was originally recorded on a five-point scale, but after some initial experimentation we have grouped the responses and have contrasted the very religious with all others. (We do not have information about the religiousness of the respondent's parents.)

### A3.4. Sex preferences

Out of curiosity we have included the sex of the two first children in a small part of our work, even though its effect on third births is of more peripheral interest in our study, which concentrates on education and public policies. B. Hoem (1993) found for Sweden that the desire to have at least one boy or to have at least one boy and one girl increased the third-birth intensity whenever one of these preferred sex compositions had not been attained with the first two births. Schullström (1996) made similar findings. In our own analysis, this covariate turns out not quite to make it to significance ($p$=0.191), but its coefficients suggest that Austrian parents have a third child more readily if they do not have (enough) boys among the first two children. If we use as our baseline the case where the respondent had boys in both her first two births, then the effects are 1.09 for (boy,girl), 1.29 for (girl,boy), and 1.20 for (girl,girl). The (boy,boy) case has an effect of 1 by definition since it is our baseline level.

### A3.5. Family background and social class of the respondent's parental home

One indicator is missing in our list of social background factors: We could not include the social class of the respondent's parents, simply because the Austrian survey does not contain this information. For a study of the stage in life that we address, this should not impair our results. In our experience, the social class of the parental home plays out its role as a determinant of demographic (and educational) behavior at early stages in life, and it has turned out to be unimportant for the study of third births in European investigations as soon as one controls for behavior in those early phases.[19] We see no reason to believe that things

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[19] See for instance our references to previous studies of third births in Sweden in the introductory section of our main

should be different in Austria.

We have, however, one piece of information about the respondent's parental home, namely the number of siblings. We use this information as a proxy for family background. In line with previous findings for Sweden we expect women who grew up with many siblings to have higher third-birth rates than women who did not (Berinde 1999, Table 6). For a general discussion of the experience of such demographic events across generations, see Murphy and Wang (1998).

### A.3.6. Age at first and second birth

It is standard practice among demographers to include the mother's age at first birth and the interval between the two first births in analyses of third births. This is connected to consistent empirical patterns of elevated rates of third birth for women who have their first birth at an early age and the second birth shortly afterwards, and also to theoretical arguments made in explanation of this pattern (Westoff et al. 1963; Rodríguez et al. 1984; Heckman et al. 1985; B. Hoem 1993; Berinde 1999; and many others). As an alternative, one can replace the age at first birth by the age at second birth. So long as one retains the interval between the first two births in the analysis, using one of these ages provides some control over the other. If one groups these variables rather coarsely, the control is less than perfect, however, and one's choice between them depends on which childbearing age one wants to control most completely. We have experimented with both alternatives and have opted for the woman's age at <u>second</u> birth in our presentation in this report, because this gives us better control of her biological age during the life segment in which a third birth might occur. We feel that this may be the more important age to control for biological reasons and also because of the societal expectations about childbearing behavior at various ages attained (rather than starting ages). The third-birth intensity declines as the age at either birth increases, and more strongly so when we use age at first birth (effects not displayed here). Our basic grouping of the mother's age at second birth was 16-22 years, 23-24, 25-26, 27-28, and 29-40 years. We chose these categories to get an even distribution over the groups (Table A4, column 3). For good measure, we have also included the partner's age at second birth, with a similar result. The corresponding grouping of the age at second birth for male partners was 18-25 years, 26-27, 28-29, 30-33, and 34-60.

So far, we have been talking about absolute age at first or second birth, as is common procedure. As has been pointed out by B. Hoem (1996), however, age attained at (say) second birth has a different meaning for women at different educational levels. As is made evident by the distributions of age at second birth (Table A6a), having it before age 23, say, is quite common for women with just basic schooling while almost no women on the tertiary level start childbearing that early. Fully one third of the women with the least education enter motherhood before age 23, while only one per cent of the women in our highest educational category started so early. By the time one third of the latter group had had their first child (at age 27), all of 83 per cent of the former group had entered motherhood. Evidently, women's first births occur at widely discrepant ages in the respective educational groups. Therefore, something can be said for letting the age grouping depend on the educational level. Using the age distributions in Table A6a to subdivide each of the four educational groups roughly into quintiles, we get the four separate age groupings listed in Table A6b. For each level of education, women are characterized there as having their second child very early, early, at a medium age, late, or very late. We have used this attainment-related age variable as an alternative to absolute age at childbearing in our analysis. The division of the respondents into

text.

quintiles on each of these age specifications facilitates comparison between their impacts.

The idea behind this operation is that educational attainment is a strong determinant of the age at second birth (as is evident in Table A6a) and that it may influence subsequent child-bearing in part via this age and in part possibly directly. Using the absolute instead of the relative age at second birth may amount to a harmful misspecification of the intensity model.

It is conceivable that there might be residual effects that would make highly educated women have particularly low 'risks' of third birth events even when we control for the (relative) age at second birth. This could happen if highly educated women had a lower inclination (or ability) to bear a third child than corresponding women with less education do. As we have made clear above, we believe otherwise, but we have taken pains to device a procedure that should be neutral vis-à-vis one's assumptions about this feature. This and most of our arguments hold irrespective of whether we use age at first or second birth in our analyses.

### A3.7. Coding of educational attainment

For practical reasons, we handle our respondents and their partners separately when we compute their educational attainment in any month, as follows.

Respondents: Swedish investigations (Hoem and Hoem 1989, B. Hoem 1993; Berinde 1999) have used months spent in tertiary education (rather than the completion of an academic degree or a similar certificate) as a criterion for assignment of their highest educational level. This practice seems relevant in the Austrian situation as well, and we have assigned the highest of our educational levels to a respondent when she has completed twenty months of tertiary instruction. This means that the respondent should have been influenced by at least some (non-negligible) amount of education at that level, yet need not have completed her tertiary education. We set the cut-off point at twenty months assuming that this exposure to tertiary education is long enough to influence one's attitudes. Such an influence shows up clearly in our analysis of the age at first and second birth (see below). For each respondent, we can compute her educational attainment on this scale for each month of observation, and we have used it as a time-varying covariate.

The nine original categories of educational activity (*Lehre, berufsbildende mittlere Schule, allgemeinbildende höhere Schule*, and so on) reflect both the horizontal and the verti-cal structure of the Austrian school system, but as a precaution against misclassification we have reorganized them into four vertical groups termed basic, lower-secondary, upper-secon-dary, and tertiary education. Basic schooling contains up to nine years of schooling. Lower-secondary education includes apprenticeships and normally between ten and twelve years of ordinary school attendance. Upper-secondary education encompasses the Austrian *gymnasium* and its equivalents, such as corresponding non-academic vocational training at a similar level (*berufsbildende höhere Schule*), including the training of nurses. Tertiary education includes university-level studies (including postgraduate studies), training in art academies, and so on, as well as post-upper-secondary education that lead to a professional certificate rather than an academic degree, such as the training of teachers for primary school. We re-coded as basic schooling the few missing values on the educational variable.

We also introduced the following practice in computing the values of this covariate.

(a) We have never reduced a respondent's educational attainment as her educational history progresses, even if she is recorded as having gone back to take education at a level that is lower than the one once attained.

(b) We have ignored a recorded transition to postgraduate studies in a few cases where the respondent had not completed upper-secondary school first. As a consequence,

such cases were 'frozen' at the lower-secondary level. This precaution was prompted by indications that some respondents may have been confused by the inclusion of 'postgraduate studies' (with the words used in English) as a response category, since post-graduate studies are not very common in Austria and the term itself not widely known.

Partners (mostly marital spouses): The representation of the educational level of the partner has required some further consideration. We know the educational attainment of the respondent's birth-union partner, but 'only' at the start of that union. This raises two issues.

First, we have assigned a tertiary level of education to the partner when such attainment was claimed in the interview. This means that, in principle, a partner is assigned our highest level of attainment only if he has actually completed a degree or certificate at that level. A partner with education on the upper-secondary and tertiary level may therefore have more education than a respondent who has been assigned the same formal level. After some consideration, we have decided to give priority to the comparability with the Swedish data for our (female) respondents and to accept the slightly asymmetric representation of the educational attainment of the respondent and her partner.[20]

Secondly, we need to ask how well the partner's educational level at the beginning of the birth-union represents his educational attainment during the segment of life we are interested in, namely after the second birth. The question is how much change there is in the partner's educational attainment (on the educational scale that we use) up through that later life segment. To check this, we have selected male respondents in the same manner as we did for females and have inspected their educational histories after the start of the relevant union.[21] It then turns out that there is very little subsequent educational activity at the stage in question. We feel confident that our variable captures the educational attainment of the partner at and after the birth of the second child as well.

Back to the respondents: A corresponding check for female respondents shows that they hardly have any educational activity after entry into motherhood.[22] We might as well have represented the woman's educational attainment by how far she had got by the time of her first or second birth, and will often use this fact without further reference below.

### A3.8. Employment history

There is no single, evident way to represent a woman's employment experience for our analysis, and we have carried out extensive experiments, only some of which are displayed here. Our attempts have been hampered by the fact that some features are missing from the Austrian employment biographies. There is no information about the length of unemployment in the data set, so we have not been able to account for it. (We suspect that unemployment is underreported in most such data sets.) Except for the situation at the time of the interview, the Austrian survey also does not distinguish between part-time or full-time work, so we have had to credit every respondent equally for her labor-force participation for every month for which employment is recorded.

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[20] With our definition, 5.9 per cent of the exposure time was at the tertiary level for female respondents and 7.8 per cent for the men (Table A4). Any stricter definition of this level of education for women would have made the distribution more lopsided.

[21] As we mentioned above, in principle we have 'complete' educational histories for all respondents, whether male or female. It is the partners that we have less information about. Most corresponding surveys contain even less.

[22] According to the tabulation under 'current activity status' in Table A4, only about three-quarters of one per cent of the exposure time recorded after the second birth was spent in some educational activity, and the figure for the time after the first birth is similar.

On this basis, we have defined her <u>employment ratio</u> as the number of months recorded as spent in employment during a life segment divided by the corresponding number of months not spent in education in a first attempt at capturing the respondent's employment history. The denominator of this ratio is the number of months that she was free from school and in principle could have used in the labor force. Table A5 shows how our respondents were distributed over deciles for the employment ratio. We see that in each life segment, as many as about 20 per cent of our respondents have an employment ratio of one per cent or less. On the other hand there is also a strong concentration in the upper tail of these distributions.

Following our Swedish precedents, we could define women as persistent housewives in a life segment (or throughout) if they have spent less than 25 per cent of the time in employment, as persistent jobholders if they have more than 75 per cent, and as 'intermediary' otherwise. While about 57 per cent of our Austrian respondents might be regarded as persistent jobholders before the formation of the birth-union, this number decreases to about 26 per cent in the segments between the formation of the birth-union and the birth of the second child. As many as 16 per cent of our exposure time comes from respondents who withdrew from the labor force as early as at the start of the birth-union. About 55 per cent of all our recorded exposure time after second birth was contributed by women who never were in the labor force in that final observed life segment. This is an entirely different picture than the one for Sweden (B. Hoem 1995, Rønsen and Sundström 1998), where there is much more labor-force participation among women, both before and after entry into motherhood.

The subdivision into persistent housewives, jobholders, and others gave a sensible structure to third-birth patterns in the Swedish studies. Despite repeated attempts from various angles, we have not been able to gain nearly as sharp results as theirs with this representation in our Austrian data. Labor-force participation patterns in Austria are sufficiently different from those in Sweden to make a different representation necessary. (See also Biffl 1991, 1996, and Findl 1985, p. 110 etc.)

To get a robust set of covariates for our Austrian data, and also to account for the very strong concentration at the lowest and highest deciles of labor-force participation discussed above, we dropped the fine-graded net implied by our partition into deciles and developed measures that are much cruder but also less influenced by any reporting errors in the employment histories. We now turn to this solution.

In this connection, we partitioned a woman's working life into four segments. Her first segment starts on her fifteenth birthday and ends at the beginning of the birth-union. Her second life segment ranges from the formation of the birth-union to the birth of the first child. Her third segment goes from there to the arrival of the second child. And for any month that we keep her under observation after the second birth, she is in her fourth life segment. We have considered various measures to capture her labor-force attachment during each segment and have settled for the following representation.[23]

For each of our four life segments we have computed an indicator of whether the respondent had any recorded participation in the labor force at all. Let us call them indicators of (minimal) labor-force attachment. We have then concentrated on the three segments in the birth-union in the following manner.

(i) We take a lack of any recorded labor-force participation in the birth-union before

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[23] We are grateful to Britta Hoem for the incentive to try this solution. Much of the following reasoning follows her lead (B. Hoem 1993, Hoem and Hoem 1989).

the first child has arrived as an indication that the respondent has little attachment to the labor force.[24] We have used the corresponding indicator as a separate (fixed) covariate. We expect the intensity of the third birth event to be the higher for respondents who did not even spend a month in the labor force between the start of the birth-union and the first birth.

(ii) We combine the indicators of labor-force attachment for the two life segments that follow upon the first birth into one indicator with four levels. Let $x$ be 1 or 0 as the respondent has or has not any recorded labor-force participation in the months between first and second birth. Also, for any month $t$ since second birth, let $y(t)$ be 1 or 0 as she is or is not recorded as employed in the labor market in that month. Then the pair $(x, y(t))$ has four possible values, namely 00, 01, 10, and 11. (For simplicity, we write $xy$ for $(x,y)$.) We use this pair as a time-varying covariate with four levels in our intensity regressions. The value 00 is our counterpart to the persistent-housewife status used in the Swedish studies, 11 is our counterpart to their persistent jobholders, and 01 and 10 are our counterparts to the in-between statuses.

Because of our expectation about the effects of the pair $(x,y)$, we have locked the two covariates into a permanent interaction in our analysis. A likelihood-ratio test shows that this fits the data better than if we let them operate without interaction. (Our significance level for this test is $p = 0.086$, which we consider adequate for a data set of our size.)

For reasons that we explain elsewhere in this article, we expect the combination of motherhood and labor-force participation to be difficult for many Austrian women with (small) children. In consequence, we expect the value 1 on either coordinate to mean the stronger labor-force orientation and therefore the lower intensity of the third birth event. This is pretty obvious for coordinate $x$ but it should hold for $y$ as well. Remember that $t$ runs over the months from the second birth to seven months before any third birth, so for each $t$ where we use $y(t)$, it is measured at least seven months earlier than the third birth. Therefore, the pregnancy leading up to that birth cannot motivate a woman who has a job to stay in the labor force at duration $t$ to avoid losing her maternity rights connected with it, simply because $t$ comes before she can act on any actual pregnancy. For the same reason, an actual pregnancy is unlikely to induce a woman who is jobless at duration $t$ to enter the labor force to gain those rights. If we had not taken the precaution of stopping observation seven months or so before any third birth (or a precaution equivalent to it), we could have run into a case of cause reversal. If we had kept going up to the third birth itself, the prospect of maternity rights could have out-balanced the difficulty of combining job and further motherhood.

By way of summary, our general expectation is that the intensity associated with the factor level 00 will be higher than for any of the other levels (01, 10, and 11). We suppose that the intensity for 10 will be higher than the one for 11. Finally we expect the intensity connected with the covariate value 01 to be the lowest of them all, for it indicates that the woman has entered the labor market after the second birth even though she stayed out of it throughout the months between her first two births. Presumably, this occurs when she plans not to have a third birth anytime soon in most cases. We make all of these comparisons under a *ceteris paribus* assumption where the values on all other covariates in the analysis are kept constant.

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[24] Because we have no complete data on unemployment, we can not distinguish between intentional or imposed absence from the labor market.

## A4. RESULTS

### A4.1. Demographic covariates

The basic outcome of our empirical work is summarized in Table A1. (Note that it extends over two pages.) Much of the outcome is as expected. We see that very <u>religious</u> women have a 'risk' of a third birth event estimated at some eighty-five per cent above other women. Being religious still has a strong influence on women's childbearing behavior in Austria, but not as much as in Sweden, where being religious is the exception rather than the norm. (On a weaker definition of religiosity, about half as many respondents were classified as religious in a Swedish survey as in the Austrian one, and B. Hoem (1993) found that religious Swedish women had a relative 'risk' of 2.25 for third births.)

Respondents with three or more <u>siblings</u> had a relative 'risk' estimated at 1.43 for the third birth event by comparison to respondents whose parents followed the cultural norm of two or fewer children. This confirms our expectation that the siblings variable would pick up an aspect of family orientation. We have been disappointed in our hope that it would help throw more light on how other variables work, however, for it has turned out to be largely orthogonal to them. It does not matter much to the estimated effects of other covariates whether the siblings variable is included in the regression or not, nor does the selection of other covariates seem to have much influence on the estimated effect of the siblings variable. For these reasons, we eliminated it from our work once we had established its effect pattern.

With some important exceptions that we will mention soon, it is actually remarkable how little effect the inclusion or elimination of other covariates has on the estimated effect of a given variable. Another case in point is the <u>interval between the two first births</u>. As we see from Table A1, the third-birth intensity declines as the birth interval becomes longer, as expected, but the coefficients are remarkably robust against model re-specification. We have kept this variable in our regressions to avoid contamination of other effects.

Correspondingly, third-birth intensities decline as the respondent's <u>age at second birth</u> increases. See Tables A1 and A2 for two of our specifications of this covariate. The age coefficients have a number of features:

(i) The various model re-specifications of the other covariates included in the analyses only produce small changes in the age coefficients. As we have mentioned already, this is typical of our findings for most covariate effects.

(ii) There is no important difference between the coefficients in the three age groups up to 26 years at second birth, nor does it matter much whether the birth arrives very early, early, or medium early relative to other respondents on the same educational level (Table A2). For this reason, we have combined the first three levels on the age variable in the regressions given in Table A1. The age covariate seems to capture primarily the slow-down at the higher childbearing ages.

(iii) The age effects remain largely the same if we switch from absolute age at second birth to a separate age grouping for each educational attainment ('<u>relative age</u>'). Even though the <u>age</u> effects are not affected much by the specification of age at second birth, the effect of <u>educational attainment</u> is, as we saw in Section 4 of the main paper.

We get a similar pattern but a stronger negative gradient in the effects if we replace it with <u>age at first birth</u> (not displayed here). An early first birth is more of an indicator of high natality at later stages of childbearing than an early second birth is.

*A4.2. The respondent's labor-force behavior*

Among all our experiments with the representation of the respondent's labor-force behavior, the effect coefficients of the one we have settled for are listed at the end of page 2 in Table A1. (No other representation gives a radically different pattern.) The effect of the labor-force attachment between the start of the birth-union and the first birth is disappointingly small and not significant, but otherwise the coefficients confirm all of our expectations. Respondents who moved into the labor market (group 01, who had no labor-force attachment between the first two births but who returned to the labor market after the second birth) have the lowest third-birth intensity among our four groups, and the value of 0.61 is significantly smaller than the baseline level of 1 ($p = 0.007$). We read this as an indication that most of them do not have any immediate plans for a third birth. Conversely, respondents who moved out of the labor market (group 10, who were in the labor market between their first two births but who are not there in the current month after the second birth), have a relatively low fertility level, again as expected. However, their relative risk of 0.81 is not significantly different from 1 ($p = 0.162$) nor from the risks of any of the other groups ($p > 0.33$). We read this as a mild indication that they may be planning for a third child and abstain from labor-force participation for the time being. With a coefficient of 0.74 ($p = 0.011$), women who were in the labor market between births 1 and 2 and who are currently there (group 11) have significantly lower third-birth intensities than our baseline group of respondents who have no recorded job activity between the first two births and who are currently not in the labor force (group 00, risk coefficient 1).

A significant interaction between our indicator $y(t)$ of current participation in the labor force (Section A3.8) and the age of the second child ($p = 0.087$) reveals a striking difference between the third-birth intensity profiles of women inside and outside of the labor market (Figure 6). While working women have much the lower intensities when their second child is over two years old, they have by far the highest intensity (*ceteris paribus*) when the child is in its second year. (Their relative risk is about 1.25 at that point, standardized for our other covariates.) Several interpretations come to mind: It is possible that women who want more than two children <u>and</u> also want to remain in the labor force choose to have their third child quickly after the second one to limit the life segment during which they must attend to small children. (Ní Bhrolcháin, 1986, has made a similar finding and interpretation.) It is also possible that the prospect of paid maternity/parental leave (which women outside the labor force do not have) make some women return to the labor force to generate new maternity rights. In addition, an ambiguity in the meaning of labor-force participation can easily lead to a misinterpretation of the peak in the child's second year of life in the curve for women who formally are in the labor force. In Austria, women on maternity/parental leave are officially regarded as 'employed' if their work contract has not expired. Long before the introduction of a two-year parental leave for all employed and unemployed women in 1990, the large percentage of women who are in public service enjoyed the right to an unpaid extension of their parental leave well beyond the general leave period of one year. During such a leave extension, a woman in public service retains her job contract. It is not clear whether a woman on paid or unpaid maternity/parental leave should (or would) be recorded in the interview as a member of the labor force or not. There may be similar problems for self-employed women, especially in agriculture. If a sufficient number of women do record themselves as employed in this situation, then the notion of incompatibility of parenthood and market work gets blurred in our data, and intensity profiles like those in Figure 6 become less surprising.

Those intensity profiles are present in our data for the years before 1990 already and

are not produced by a reaction to the new 'speed premium' or by the extension to women outside of public service. Their features are also retained if we add to the interaction the respondent's indicator of labor-force attachment between the first two births. We do not display either sub-finding here.

Rainer Münz and Wolfgang Lutz (personal communications) have made us aware that women in the labor force are somewhat underrepresented among the respondents. If working women have fewer third births than others, then this differential nonresponse should mean that if anything our relative-risk estimates for the 11 and 01 groups are too low, as is the curve for respondents in the labor force in Figure 6. Third-birth differentials by labor-force behavior should be even stronger in an unbiased sample.

**APPENDIX B. MAJOR CHANGES IN AUSTRIAN PARENTAL-LEAVE POLICIES,
1957 THROUGH 1996**

1957

- paid mandatory maternity-protection period of 6 weeks after birth (8 for nursing mothers) extended by 6 weeks before birth, at least 12 weeks in all, nursing mothers up to 14 weeks, premature births up to 18 weeks; benefit (*Wochengeld*) equals average income over preceding 13 weeks
- unpaid maternity leave up to 6 months with job security

1961

- paid maternity leave up to child's first birthday with job security
- maternity leave payment equal to unemployment benefit for single mothers, half of unemployment benefit for married women; with reductions according to household income, no benefit above a certain maximum household income; eligibility requirement: 52 weeks of (insurable) employment during the two years immediately preceding a first birth, 20 weeks during the most recent year for second and higher-order births

1974

- paid mandatory maternity-protection period extended to 16 weeks, 20 weeks for premature or multiple births
- maternity leave payment independent of household income at flat rates with a 50% higher rate for single mothers and for married mothers if husband has little or no income
- special maternity leave payment (*Sondernotstandshilfe = SNH*) for single mothers up to child's third birthday if mother cannot be gainfully employed due to lack of childcare; SNH benefit related to unemployment relief
- eligibility requirements for mothers under age 20 reduced from 52 to 20 weeks of employment preceding a first birth as well
- mandatory maternity protection period counted as part of employment requirements for maternity leave payments if work contract exceeds mandatory maternity protection period.

1976

- entitlement enhanced to gainfully employed mothers with adopted children and to foster-mothers

1978

- paid mandatory maternity protection period extended to 20 weeks in case of Cesarean section

1982

- farmers and self employed mothers entitled to 16 weeks of flat rate transfer payments, 20 weeks in case of premature birth, multiple birth or Cesarean delivery

1984

- special maternity leave payment (*SNH*) restricted to 'actually' single (=noncohabiting) mothers

1989

- employment requirements for maternity leave payment for women below age 25 reduced to 20 weeks at first birth as well

1990

- parental leave for fathers if mother is eligible for parental leave herself or if mother is employed; switch from one parent to the other permitted once, three-months minimum leave for one parent
- special maternity leave payment (*SNH*) extended to married women and women in a consensual union (paid if husband/partner has little or no income)

1.7.1990
- parental leave period extended up to the child's second birthday
- employer's consent required for part-time work.
- part-time leave permitted after the child's first birthday up to the 2$^{nd}$ birthday (both parents at the same time) or up to the 3$^{rd}$ birthday (one parent alone or both parents alternating)
- parental leave subsidy (of half the regular flat-rate parental-leave payment) for farmers and self-employed mothers up to the child's second birthday
- parental leave subsidy (also of half the regular flat-rate parental-leave payment, until entitled to full parental leave payment) for mothers who are not self-employed and who do not meet the 52 (respectively 20) weeks employment requirement for parental leave payments

1993
- part-time leave possibility extended to the child's first year of life and up to its 4$^{th}$ birthday
- unemployment-benefit (up to 26 weeks) for mother/father if dismissed from job after parental leave; participation or willingness to participate in training course offered by the labor office required
- paid maternity protection period extended up to16 weeks after birth in case of premature birth and shorter maternity protection period before birth

1995
- special maternity leave payments (SNH) made dependent on certification from local authorities that no childcare facilities are available; municipality must pay a third of SNH-benefit

1996
- employment requirement for parental leave payments kept at twenty weeks for mothers under age 25 extended: 16 out of the 20 weeks of employment requirement must be spent in active employment
- employment requirements for parental leave payments for second and subsequent births extended from 20 to 26 weeks
- parental leave payments at one flat rate for all eligible mothers; single mothers and mothers whose husband/partner has little or no income may get additional loan-benefit (about 45% of flat rate); loan-benefit must be paid back by the child's father (vice versa if father goes on parental leave)

1.7.1996
- parental leave payments reduced to a maximum of 18 months for one parent, 6 months for the other parent; part-time parental leave payments adapted accordingly (max. 3 years for one parent, 1 year for the other parent)

Source: Neyer 1998. For the history of the maternity legislation in Austria since 1885, see Neyer (1984, 1997).

### APPENDIX C. SWEDISH AND AUSTRIAN FAMILY POLICIES

## C1. INTRODUCTION

The structure of labor-force participation among married women is quite different in Austria and Sweden, and this has important implications for our interpretation of the patterns we have found in intensities of the third birth event. We believe that much of the difference in market work among women with children can be understood as a consequence of the different approaches to labor and family policies in the two countries.[25] This appendix contains an account of what we take to be most important elements in this connection. Chronological accounts are given in our Appendix B and the corresponding appendix of Hoem and Hoem (1996).

First of all, in reflection of the higher incompatibility of motherhood and market work in Austria, labor-force activity rates among mothers of minors are notably lower in that country than in Sweden.[26] Secondly, Swedish regulations give parents much greater flexibility vis-à-vis the labor market and daycare arrangements. Thirdly, Swedish benefits to parents are by far the more generous ones. We spell this out in the following sections.

## C2. LABOR-FORCE PARTICIPATION

Figure 4 shows labor-force activity rates for women who have children below age 17 in Sweden and below age 15 in Austria. The Swedish data come from annual summaries of labor surveys issued by Statistics Sweden. The Austrian data come from annual averages of the quarterly micro-censuses and have been published by the Austrian Central Statistical Office. (The Austrian data for 1994 are not available.)

Figure 5 shows the extent of part-time work. We would have liked to display curves for the same women as in Figure 4 (i.e., women with minors), but it turned out to be too difficult and costly for our purposes to obtain them. For Austria we could not get data restricted to women with children, and we could not get data based on the same definition of part-time work for both countries. Here is the information we have been able to piece together:

In the curve for Austria, part-time work is defined as gainful employment with 14-36 normal weekly working hours for 1974-83 and 13-36 hours for 1984-1990. For these years, women on maternal leave are included in the data. In a separate time series for 1988-1995, part-time work was defined as 12-35 normal weekly working hours and women on maternity leave were excluded. Our plot is based on data from the Austrian micro-censuses as summarized by Bartunek (1993, 1997).

It is easy to get more complete data for Sweden, again based on the annual labor-survey summaries. We have obtained data separately (i) for all women and (ii) for women with children under age 17, but in either case part-time work is defined as either 1-34 or 20-34 normal weekly work-hours. We have plotted the per cent that have 1-34 normal weekly working hours among all women in the labor force for the years 1968 through 1997 as our main basis of comparison with the Austrian percentages. It is evident that part-time work is

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[25] An enlightening contrast between the political climates in which decisions on family policy are made in Austria and Sweden can be inferred from the accounts of Badelt (1991) and Sundström (1991). For an insightful account of the philosophy behind Swedish family policies, see Söderström and Meisaari-Polsa (1995).

[26] See Figure 5. The decline in Swedish activity rates after 1990 reflects the difficult times that the country's economy then encountered. We describe the data basis for Figures 5 and 6 in Appendix C2.

much more common in Sweden than in Austria.[27]

To account better for the differences in the definition of part-time work, we have also plotted the percentage of women who have 20-34 normal working hours among all women who spent at least 20 hours per week in the labor force for the years 1987-97. Since we are primarily interested in women with children, we have done the same for this more restricted group, and have then excluded women who were absent from work both in the numerator and the denominator of our calculation. Of course, part-time work is more prevalent among women with children than among all women, and more prevalent the more short weekly hours we include as part-time work, but the differences are small by comparison to the difference between the Swedish and the Austrian data.

See Biffl (1991, 1996) for further comparisons of labor-market participation in these (and other) countries.

## C3. SYSTEM FLEXIBILITY AND THE COMPATIBILITY OF MOTHERHOOD AND MARKET WORK

Let us first address various aspects of the issue of flexibility. One important feature of it is the far greater availability and significantly more extensive use of part-time work in Sweden than in Austria (Figure 5). Beside even more favorable individual and collective con-tractual arrangements, all Swedish parents have had an unconditional right since 1979 to re-duce their working hours to three-quarters of full-time work until the youngest child is eight years old. The corresponding rule in Austria covers 'only' parents in public service and gives them the right to half-time employment until the child enters school or for a total of four years.[28]

This means that while a rather high percentage of working women in Austria are covered for a non-negligible period of early parenthood (Neyer 1990), in practice the time re-duction must be considerably lower than the one used by their Swedish counterparts.

Another difference in flexibility of great importance for the compatibility issues we consider is the availability of childcare. It has been hard for us to get consistent and reliable relevant time series of childcare for Austria for all of our period of observation, but some highlights should suffice to make our point. On the surface, childcare coverage for age groups that lead up to entry into primary school appears to have been about the same in the two countries in recent years. At the beginning of the 1990s, for instance, both had recorded child-care spots for some sixty-odd per cent of such age groups as a whole (ages 3 to 5 for Austria, 3 to 6 for Sweden; Neyer 1995, Statistics Sweden 1991, Table 2; Statistics Sweden 1997, Table 2C; see also Waldfogel 1998). However, differences in coverage between the different parts of Austria are much greater than in Sweden, which has the ambition that everyone should have the same benefits no matter where in the country they live. Opening hours can

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[27] Women who work 1-19 normal weekly hours account for only some six per cent of the total Swedish female work force every year. In Austria, there is a category called '*geringfügig Beschäftigte*'. It comprises employed persons whose monthly income from employment is below the requirement for social-security coverage. In general such low income is equivalent to a very limited number of weekly working hours. In 1994 this group alone constituted some six per cent of the female labor force, and it grew fast in the years that followed, to some eight per cent in 1996 and to almost ten per cent in late 1998/early 1999 (Karl Wörister, personal communication). This may reflect an adaptation to current regulations by Austrian women who want to combine motherhood with some labor-force participation.

[28] There are exceptions to this regulation so that part-time work is not available to all parents in public service. However, parents in public service may also take an unpaid leave after their parental leave until the child enters school. They have a right to this leave if the child is disabled.

also be problematic in Austria. While childcare normally is offered full-time and children regularly are offered meals while in daycare in Sweden, it is quite common that they must be picked up for lunch in Austria, or that the *Kindergarten* is only open half the day. (According to the childcare statistics of the Austrian Central Statistical Office, about one quarter of the *Kindergärten* were closed for lunch and another quarter were open for only half the day in 1993/94; for calculations see Neyer 1993, 1995, and Faßmann et al. 1988.) Similarly, the number of days that an Austrian parent has the right to take out to tend to a sick child (since 1977 one week per year for all children taken together, since 1993 an additional week if a sick child is under 12 years of age) is much less than the corresponding number of days in Sweden (two months for each child since 1980, three months since 1989, and four months since 1990).

Some of these items may look marginal but their sum total may produce quite different life situations for parents of post-toddlers in the two countries. For parents of children below age 3, we are no longer talking about marginal items but of radical differences. About one third of all Swedish children are in public daycare at these ages (Statistics Sweden 1991, Table 2); Austria provides its public *Krippen* for little more than two per cent (Neyer 1995, Waldfogel 1998). This must mean that most mothers of Austrian toddlers must either sever any relation they might have with the labor market at least until the child is three or even four years old,[29] or else they must rely on private (paid or unpaid) help for childcare.

The final aspect of flexibility differences that we will mention is connected with the length of the statutory parental leave. It has been longer in Austria than in Sweden since 1961, and it is now all of nine months longer (since mid-1990). In Austria its usefulness is restricted by the requirement that the leave be taken out in one go, however; once the mother returns to her job, she forfeits the right to any remaining part of the leave for the present child. (No wonder Austrian women rarely return to the labor market before the end of their statutory leave, see Münz and Neyer 1986.) In the last half-decade covered in our data, Austrian parents could stretch out the leave period by taking out part-time leave until the child's third or fourth birthday if they could get their employer's consent; they could also share the leave between the mother and father. Swedish parents have had similar but more flexible rights since 1974. They can mix work, vacation, part-time leave, and full-time leave in any manner that they like until the child's eighth birthday. (This upper age limit has varied somewhat over time). If they fall ill during parental leave, they can go off leave and record the sickness period as absence from work, saving a corresponding number of days of parental leave for later use. There is no forfeiture of any remaining leave days if a Swedish parent returns to work.

In this light it is not surprising that Austrian mothers put much store in greater system flexibility when they are asked about their preferences concerning family-policy reforms. (Over half of our respondents said that above all they wanted better labor-market conditions for working parents with small children, for instance more flexible hours and more part-time work.)

Since 1990, Austria has made its parental-leave system somewhat more flexible than before, but to make use of the new flexibility, Austrian parents must decide within four weeks after childbirth how they want to arrange their parental leave. Once they have decided there is little room for them to change their minds. Moreover, the complexity of the whole system stands in striking contrast with the transparency and generality of the Swedish system. The details of the Austrian regulations have been less than lucid from the onset, and since their

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[29] Eligibility for kindergarten is three or four years of age, depending on which state (*Bundesland*) or municipality the child lives in.

introduction they have been changed several times, which must have increased their impenetrability to the common parent. Such complexity may influence people's behavior on its own. It may be part of the reason why the majority of Austrian parents largely have adhered to 'traditional' behavior where the child's mother takes out all the parental leave and does so on full time.[30]

### C4. SYSTEM GENEROSITY

We turn finally to monetary matters. The one public payment for children where Sweden has not been massively more generous than Austria is the cash child benefit. The Swedish *barnbidrag* for a third child was equivalent to some US$ 155 per month at the same time as the Austrian *Familienbeihilfe* was something like US$ 120, or 'only' some twenty per cent lower. The child benefit did not depend on personal income in either country. The *Familienbeihilfe* may have amounted to some fourteen per cent of the total benefit for a third child in Austria. Even though this is not a negligible contribution to family income, we doubt that it is important for the issues we address here. We include it for completeness only.

Other differences between the countries cannot have failed to influence their childbearing patterns in different directions. The most important contrast in generosity level between the two countries is probably the one connected to maternity benefits**.** They are much higher in Sweden, and their structure may upset common notions of how opportunity cost of childbearing differ between different segments of the population.

First of all, between 1974 and the end of the observational period in the Swedish data, Swedish maternity benefits were all of ninety per cent of the salary of the parent who was on leave.[31] The benefit was taxed at normal rates, and there were no tax reductions for any family member. In Austria in the corresponding period, the standard benefit has been independent of the salary and an additional tax reduction (*Kinderabsetzbetrag*) has also been the same for everyone who paid enough tax to make use of it. Rough calculations suggest that for a couple with a normal combined income, the total maternity benefit for a third child in Sweden may have been something like twice that for a corresponding child in Austria. Thus, the monetary opportunity cost of childbearing was much the higher in Austria, and progressively more so as the mother's income increased. If we take educational attainment as an indicator of income potential, then this should work toward a smaller educational gradient in third-birth intensities in Austria than in Sweden (according to current economic theory). If the gradient is about zero in Sweden, as is suggested by B. Hoem's findings (1993), it should be negative in Austria. If more highly educated women have higher intensities than other women do in Sweden, as Berinde (1999) suggests on the basis of a younger data set, then in Austria they should not be as much higher as in Sweden, and possibly lower than for other women. In fact, we find little or no effect of educational attainment in our Austrian data. For reasons that we discussed in our Section 3.2, we are not surprised.

An additional monetary difference between our two countries is the much lower public subsidies paid in Austria for daycare. Grants to parents normally cover up to half of childcare costs (ILO 1988, pp. 81-82). This may sound generous, but in Sweden the subsidy was rarely

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[30] In 1997 only 3.1 per cent of all parents on parental leave were on part-time leave and less than one per cent were fathers (Arbeitsmarktservice Österreich 1997). The percentage of women on part-time leave has increased somewhat over time, but the percentage of fathers who take out parental leave has been persistently low since the introduction of the paternal-leave legislation.

[31] In the public sector and parts of the private sector, an *additional* ten per cent of the salary was paid for a substantial part of the maternity leave in Sweden.

below ninety per cent during the period covered in the Swedish data (Gustafsson 1990, p. 65).[32] Such generosity cannot have failed to influence patterns of childbearing and labor-force participation.

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[32] Even in 1997, when Sweden had encountered several years of adverse economic trends, parental contributions to public childcare only amounted to some fifteen per cent of the expenses (Svenska Kommunförbundet 1998, p. 128). See also the annual publication of accounts data for Swedish municipalities, e.g., Statistiska centralbyrån och Svenska Kommunförbundet (1998).

Titles, captions and notes for Figures 1 to 6 and Tables (A1 to A6):

Figure 1.          Total fertility in Austria, 1956-1997. Source: Statistik Austria.

Figure 2.          Probability of having a(nother) child, by current party. Austrian women born in 1925-1950. Source: Hanika 1996.

Figure 3.          Baseline third-birth intensities for selected calendar periods, standardised for all covariates. Austrian women. Source: Own calculation based on the Austrian FFS.

Figure 4.          Per cent in the labour force among women with minors. Sweden and Austria. Sources: Statistics Sweden, Annual Labour-Survey Summaries (changed definition from 1989); Statistik Austria, Microcencus (yearly average).

Figure 5.          Part-time work by women in Sweden and Austria. Per cent. Sources: Statistics Sweden, Annual Labour-Survey Summaries (changed definition from 1989); Statistik Austria, Microcencus (yearly average), Bartunek 1993, 1997.

Figrue 6.          Baseline intensities of the third-birth event, by the woman's current labor-force status, standardized for all other countries. Source: Own calculation based on the Austrian FFS.

Table A1.          Relative risks of the third birth event. Austrian women. Selected models. Source: Own calculation based on the Austrian FFS.

Table A2.          Effects of educational attainment, standardized for all covariates in Model II (Table A1). Source: Own calculation based on the Austrian FFS.

Table A3:          Number of respondents excluded or censored, by cause. Source: Own calculation based on the Austrian FFS.

Table A4.          Basic counts in the present analysis. Occurrences and exposures distributed. Respondents distributed over selected characteristics by characteristics. Source: Own calculation based on the Austrian FFS.

Table A5.          Further counts in the present analysis. Occurrences and exposures distributed Respondents distributed over selected characteristics by characteristics. Source: Own calculation based on the Austrian FFS.

Table A6a.          Age attained at second birth; cumulative percentages. Source: Own calculation based on the Austrian FFS.

# Figure 1. Total fertility in Austria, 1956-1997
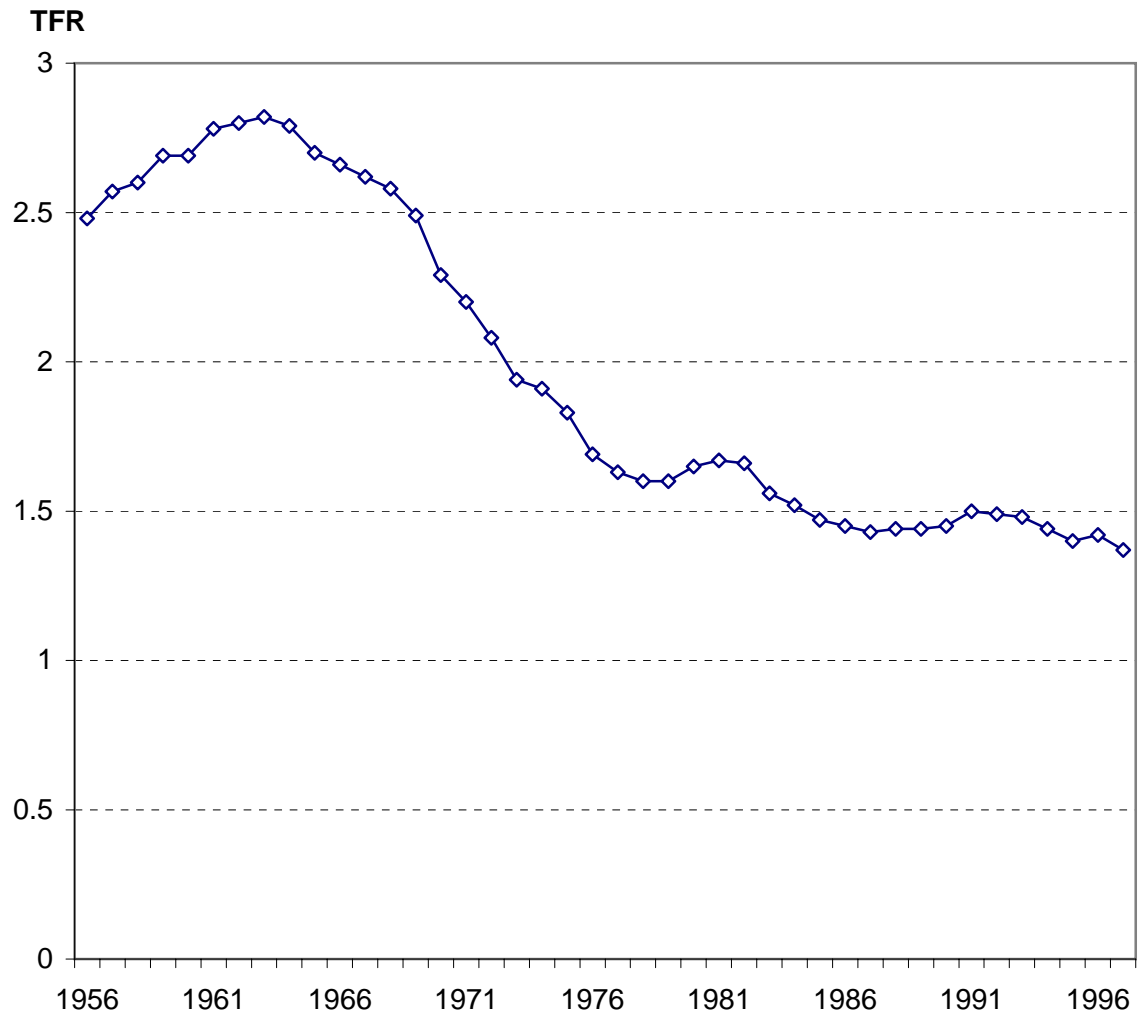
Figure 2. Probability of having a(nother) child, by current parity.
Austrian women born in 1925-1950
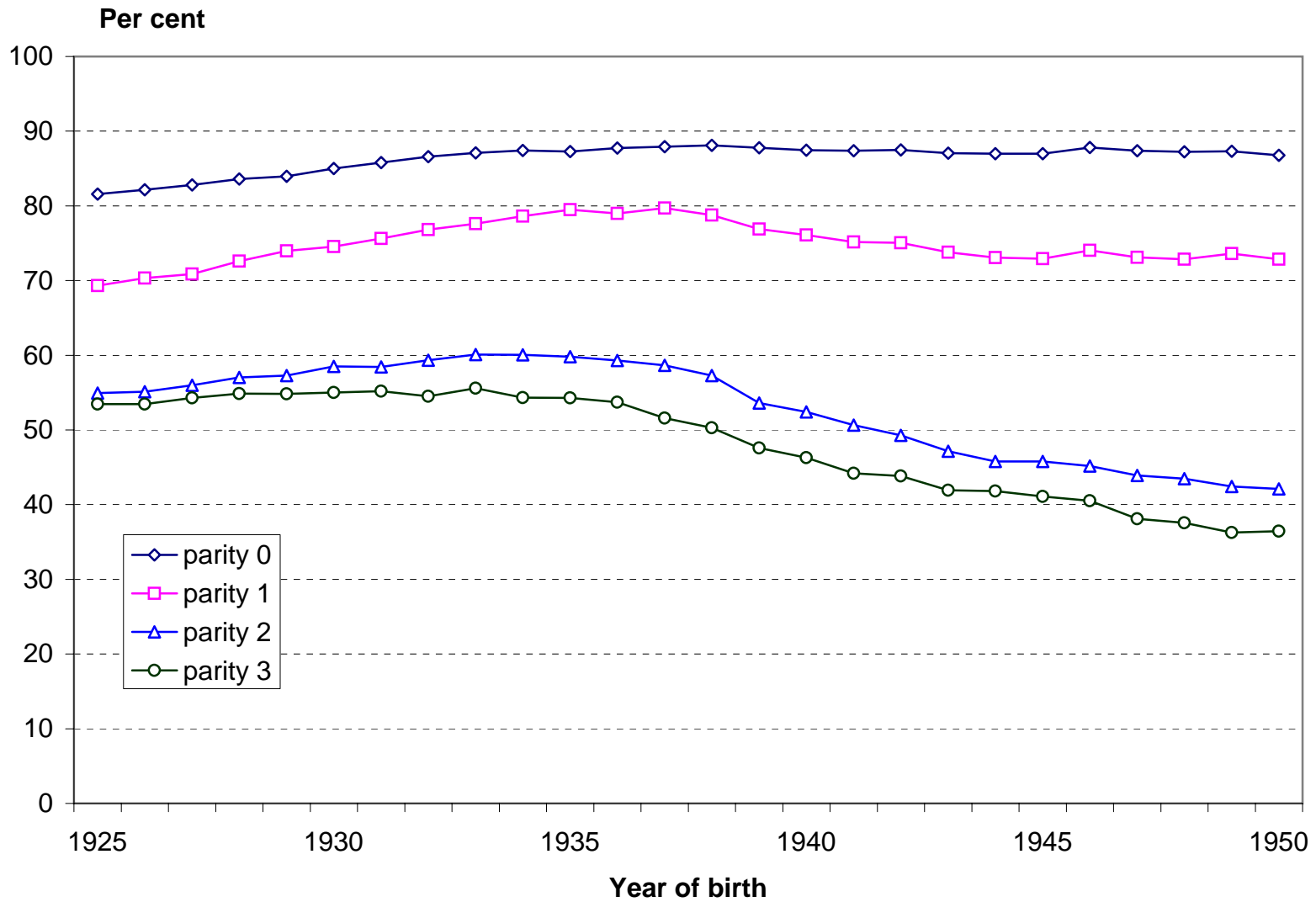
**Figure 3. Baseline third-birth intensities for selected calendar periods, standardised for all other covariates. Austrian women.**
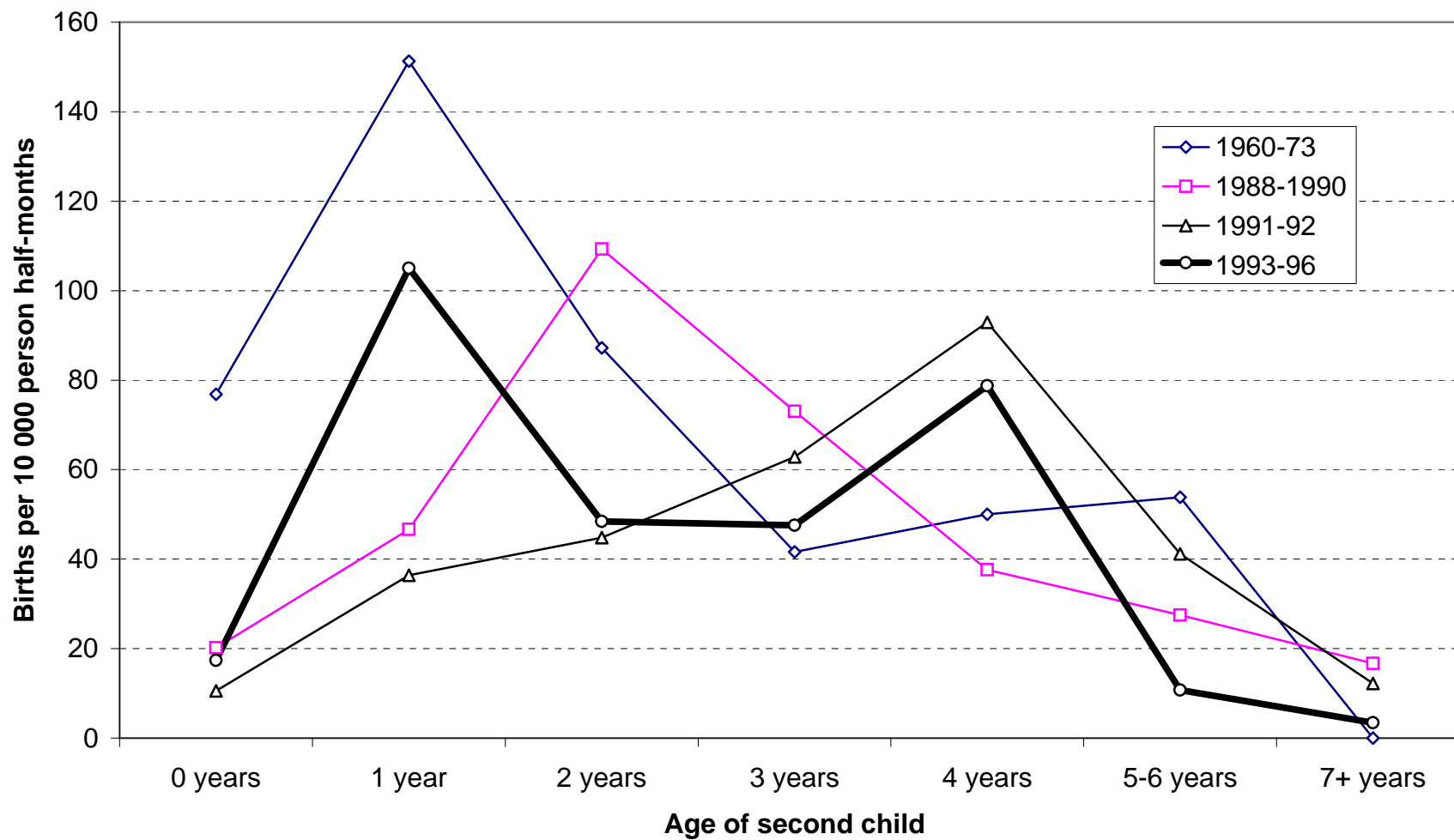
**Figure 4. Per cent in the labour force among women with minors. Sweden and Austria**
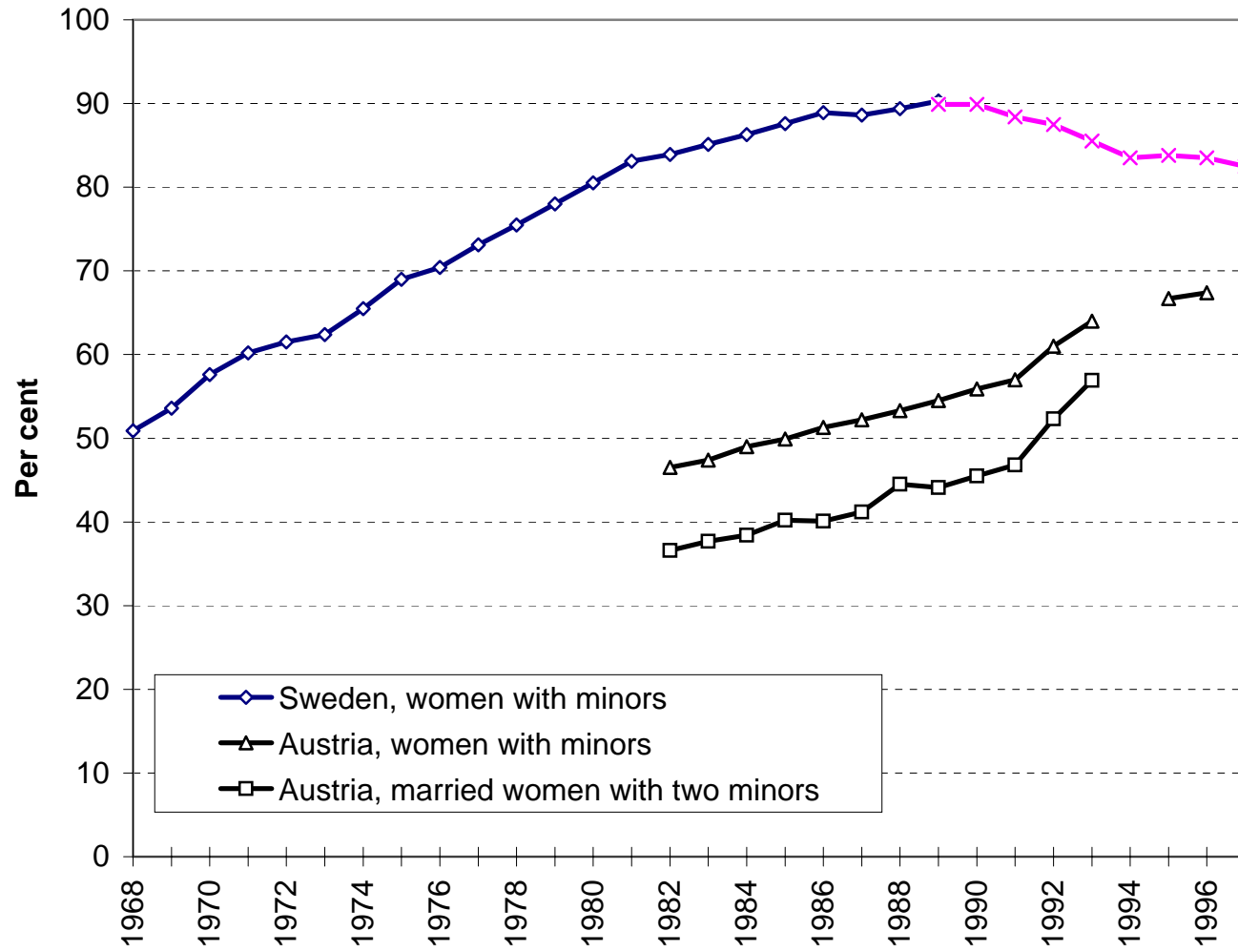
**Figure 5. Part-time work by women in Sweden and Austria.**
**Per cent**
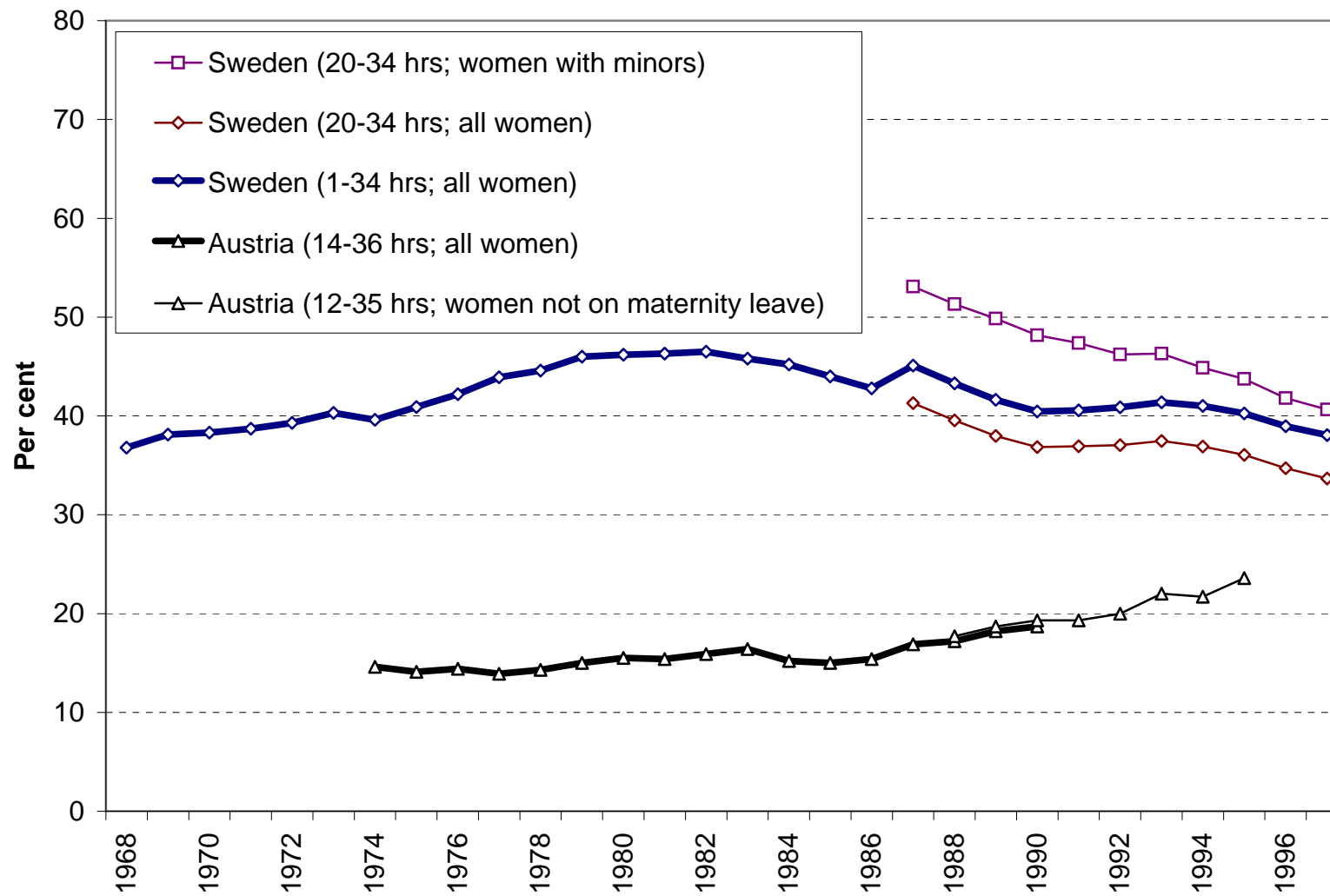
**Figure 6. Baseline intensities of the third birth event, by the woman's current labor-force status, standardized for all other covariates**
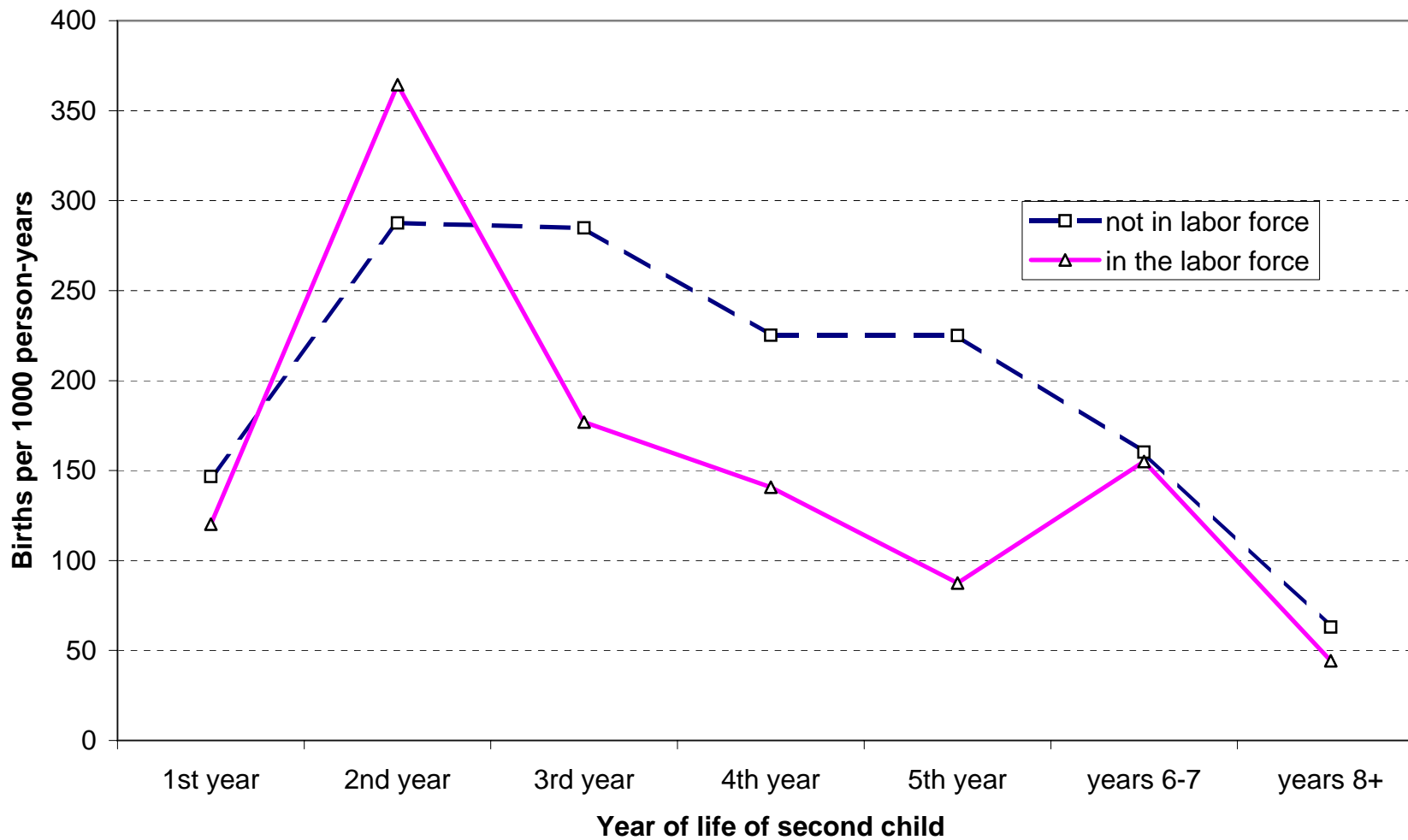
**Table A1. Relative risks of the third birth event. Austrian women**
**Selected models**

| Covariate | Model I | | Model II[f] | |
|---|---|---|---|---|
| | *p*-value | | *p*-value | |
| Respondent's siblings | *0.001* | | [a] | |
| none or one | | 1 [b] | | |
| two | | 1.09 | | |
| three or more | | 1.43 | | |
| Religiousness | *0.000* | | [a] | |
| very religious | | 1.85 | | |
| otherwise | | 1 | | |
| Birth interval (months) | *0.001* | | *0.001* | |
| 0-11 | | 1 | | 1 |
| 12-23 | | 1.22 | | 1.05 |
| 24-35 | | 0.84 | | 0.75 |
| 36-47 | | 0.84 | | [c] |
| 48-84 | | 0.73 | | 0.64 |
| Year of birth | *0.001* | | [d] | |
| 1941-49 | | 1 | | |
| 1950-59 | | 0.91 | | |
| 1960-69 | | 0.61 | | |
| 1970-76 | | 0.72 | | |
| Mother's age at birth of second child (years) | *0.000* | | *0.013* | |
| 16-26 | | 1 | | 1 |
| 27-28 | | 0.70 | | 0.78 |
| 29-40 | | 0.55 | | 0.63 |
| Partner's age at birth of second child (years) | *0.012* | | *0.078* | |
| 18-25 | | 1 | | 1 |
| 26-27 | | 0.71 | | 0.77 |
| 28-29 | | 0.64 | | 0.72 |
| 30-33 | | 0.88 | | 0.88 |
| 34-60 | | 0.83 | | [c] |
| Age of second child (years) | *0.000* | | *0.000* | |
| 0 | | 1 | | 1 |
| 1 | | 2.13 | | 2.19 |
| 2 | | 1.75 | | 1.85 |
| 3 | | 1.32 | | 1.46 |
| 4 | | 1.14 | | 1.31 |
| 5-6 | | 0.99 | | 1.20 |
| 7 or more | | 0.28 | | 0.42 |
| Intercept[e] | 0.004205 | | 0.005986 | |

**Table A1 (cont'd). Relative risks of the third birth event. Austrian women
Additional factors in Model II**

| Covariate | | Model II |
|---|---|---|
| | | *p*-value |
| Mother's educational attainment | *0.469* | |
| basic | | 1 |
| lower secondary | | 0.90 |
| upper secondary | | 0.88 |
| tertiary | | 1.19 |
| Partner's educational attainment | *0.000* | |
| basic | | 1 |
| lower secondary | | 0.60 |
| upper secondary | | 0.67 |
| tertiary | | 0.87 |
| Calendar period | *0.000* | |
| 1960-73 | | 1 |
| 1974-79 | | 0.95 |
| 1980-87 | | 0.81 |
| 1988-90 | | 0.61 |
| 1991-92 | | 0.51 |
| 1993-96 | | 0.44 |
| Labor-force attachment, | *0.592* | |
| start of birth-union to first birth | | |
| no employment | | 1.07 |
| some employment | | 1 |
| Labor-force attachment between first | *0.008* | |
| two births, combined with current | | |
| labor-force participation | | |
| 00 (no,no) | | 1 |
| 01 (no,yes) | | 0.61 |
| 10 (yes,no) | | 0.81 |
| 11 (yes,yes) | | 0.74 |

NOTES:

[a] Factor removed due to its peripheral interest for us.

[b] Baseline levels are indicated by a value of 1 without decimals.

[c] Level combined with previous level.

[d] Factor removed to allow inclusion of calendar period (see page 2).

[e] One gets the baseline intensity by multiplying the intercept by the effect coefficients for the age of the second child. The intercepts differ because the baseline groups for the two models are quite different.

[f] Model II fits the data significantly better than Model I. The log likelihood is equal to -2607 for Model I and equal to -2052 for Model II; DF=15.

## Table A2. Effects of educational attainment,
### standardized for all covariates in Model II (Table A1)

| Covariate | Without partner's age | | With partner's age [d] | |
| --- | --- | --- | --- | --- |
| | Definition of respondent's age at second birth | | | |
| | absolute age[a] | relative age[b] | absolute age[a] | relative age[b] |
| Respondent's own educational attainment | *0.095* [c] | *0.150* | *0.476* | *0.523* |
|     basic | 1 | 1 | 1 | 1 |
|     lower secondary | 0.86 | 0.83 | 0.90 | 0.87 |
|     upper secondary | 0.86 | 0.79 | 0.88 | 0.80 |
|     tertiary | 1.33 | 1.10 | 1.18 | 0.96 |
| Partner's educational attainment | | | *0.000* | *0.000* |
|     basic | | | 1 | 1 |
|     lower secondary | | | 0.60 | 0.60 |
|     upper secondary | | | 0.67 | 0.68 |
|     tertiary | | | 0.89 | 0.87 |
| Mother's age at second birth | *0.062* | *0.038* | *0.089* | *0.063* |
|     very low[a] | 1 | 1 | 1 | 1 |
|     low | 0.99 | 0.95 | 0.98 | 0.91 |
|     medium | 0.90 | 0.90 | 0.94 | 0.92 |
|     high | 0.74 | 0.76 | 0.75 | 0.78 |
|     very high | 0.66 | 0.63 | 0.63 | 0.59 |

NOTES:

[a] The groups for the absolute age at second birth were 16-22, 23-24, 25-26, 27-28, and 29-40 years.

[b] Age of mother at second birth, grouped separately for each individual educational level.

[c] *p*-values for covariates are given in small italics.

[d] The groups for the partner's age at second birth were 18-25, 26-27, 28-29, 30-33, 34-60.

## Table A3: Number of respondents excluded or censored, by cause

| | |
|---|---|
| Total number of records | 6120 |
| Of these for women | 4581 |

Of the records for female respondents:

### A. Excluded cases

| Cause of exclusion | Count of exclusions |
|---|---|
| never lived in a union | 668 |
| had less than two children | 1527 |
| first child died before second child was born | 12 |
| first or second child was adopted | 22 |
| twins at first or second birth | 63 |
| first two children not born in the same union | 485 |
| interval between first and second child greater than seven years | 98 |
| age of mother at birth of first child greater than 36 years | 4 |
| pregnant with third child at date of interview | 5 |
| incomplete information on number of own siblings | 5 |
| foreign nationality | 58 |
| no exposure | 11 |
| total exclusions | 2958 |

### B. Censored cases

| Cause of censoring | Censoring date | Count of censored events |
|---|---|---|
| no third child | date of interview | 920 |
| third child adopted | date of adoption of third child | 0 |
| birth-union split | date of disruption | 172 |
| first child died after second birth and before censoring date | date of death of first child | 3 |
| second child died before censoring date | date of death of second child | 9 |
| total censored cases | | 1104 |

### C. Occurrences

| | |
|---|---|
| third births | 519 |
| **total cases** | **1623** |

## Table A4. Basic counts in the present analysis

| Factor | Occurrences | Exposures | | Number of respondents | Per cent |
|---|---|---|---|---|---|
| | | half-months | per cent | | |
| **FIXED CHARACTERISTICS** | | | | | |
| religious (by self-assessment) | | | | | |
| very religious | 114 | 42.075 | 13.0 | 231 | 14.2 |
| less religious, not religious | 405 | 279.857 | 86.6 | 1387 | 85.5 |
| no answer | 0 | 1.227 | 0.4 | 5 | 0.3 |
| number of siblings | | | | | |
| none | 42 | 35.833 | 11.1 | 153 | 9.4 |
| one | 106 | 81.301 | 25.2 | 385 | 23.7 |
| two | 102 | 68.918 | 21.3 | 368 | 22.7 |
| three or more | 269 | 137.107 | 42.4 | 717 | 44.2 |
| year of birth | | | | | |
| 1941-1949 | 218 | 141.314 | 43.7 | 468 | 28.8 |
| 1950-1959 | 199 | 121.132 | 37.5 | 560 | 34.5 |
| 1960-1969 | 97 | 58.609 | 18.1 | 539 | 33.2 |
| 1970-1976 | 5 | 2.104 | 0.7 | 56 | 3.5 |
| respondent's age at birth of second child | | | | | |
| 16 - 22 | 163 | 79.422 | 24.6 | 362 | 22.3 |
| 23 - 24 | 119 | 66.689 | 20.6 | 319 | 19.7 |
| 25 - 26 | 109 | 69.164 | 21.4 | 346 | 21.3 |
| 27 - 28 | 64 | 51.012 | 15.8 | 268 | 16.5 |
| 29 - 40 | 64 | 56.872 | 17.6 | 328 | 20.2 |
| partner's age at birth of second child | | | | | |
| 18-25 | 154 | 66.471 | 20.6 | 339 | 20.9 |
| 26-27 | 93 | 62.174 | 19.2 | 284 | 17.5 |
| 28-29 | 81 | 62.973 | 19.5 | 283 | 17.4 |
| 30-33 | 109 | 70.974 | 22.0 | 400 | 24.6 |
| 34-60 | 74 | 55.025 | 17.0 | 287 | 17.7 |
| no answer | 8 | 5.542 | 1.7 | 30 | 1.8 |
| birth interval between 1st and 2nd child | | | | | |
| 0 -11 months | 15 | 8.127 | 2.5 | 33 | 2.0 |
| 12 - 23 months | 224 | 105.453 | 32.6 | 533 | 32.8 |
| 24 - 35 months | 136 | 89.379 | 27.7 | 477 | 29.4 |
| 36 - 47 months | 78 | 58.734 | 18.2 | 292 | 18.0 |
| 48 - 84 months | 66 | 61.466 | 19.0 | 288 | 17.7 |
| education of partner at start of birth-union | | | | | |
| basic | 105 | 40.384 | 12.5 | 234 | 14.4 |
| lower secondary | 295 | 210.609 | 65.2 | 1017 | 62.7 |
| upper secondary | 71 | 47.728 | 14.8 | 246 | 15.2 |
| tertiary | 48 | 24.438 | 7.6 | 126 | 7.8 |
| labor-force attachment, start of birth-union to first birth | | | | | |
| no employment (w=0) | 164 | 82.785 | 25.6 | 407 | 25.1 |
| at least one month of employment (w=1) | 355 | 240.374 | 74.4 | 1216 | 74.9 |
| labor-force attachment, first to second birth | | | | | |
| no employment (x=0) | 340 | 185.858 | 57.5 | 1014 | 62.5 |
| at least one month of employment (x=1) | 179 | 137.301 | 42.5 | 609 | 37.5 |

(continued)

## Table A4. Basic counts in the present analysis (continued)

**Occurrences and exposures distributed
over selected characteristics**

| Factor | Occurrences | Exposures | |
|---|---|---|---|
| | | half-months | per cent |

**TIME VARYING CHARACTERISTICS**

| Factor | Occurrences | half-months | per cent |
|---|---|---|---|
| current educational level | | | |
| basic | 205 | 111.933 | 34.6 |
| lower secondary | 259 | 177.311 | 54.9 |
| upper secondary | 21 | 14.962 | 4.6 |
| tertiary | 34 | 18.953 | 5.9 |
| current activity status (labor-force participation and enrollment in school) | | | |
| no recorded activity | 373 | 192.501 | 59.6 |
| only educational activity | 2 | 1.389 | 0.4 |
| only job activity | 144 | 128.313 | 39.7 |
| job and educational activity | 0 | 956 | 0.3 |
| labor-force attachment in life segments since first birth | | | |
| 00 | 308 | 145.395 | 44.99 |
| 01 | 32 | 40.463 | 12.52 |
| 10 | 67 | 48.495 | 15.01 |
| 11 | 112 | 88.806 | 27.48 |
| calendar period | | | |
| 1960-1973 | 104 | 28.467 | 8.8 |
| 1974-1979 | 117 | 46.048 | 14.2 |
| 1980-1987 | 163 | 98.795 | 30.6 |
| 1988-1990 | 55 | 48.429 | 15.0 |
| 1991-1992 | 35 | 36.891 | 11.4 |
| 1993-1996 | 45 | 64.529 | 20.0 |
| **Total number** | 519 | 323.159 | 100.0 |

## Table A5. Further counts in the present analysis

| Factor | Occurrences and exposures distributed over selected characteristics | | | Respondents distributed by characteristics | |
|---|---|---|---|---|---|
| | Occurrences | Exposures | | Number of respondents | Per cent |
| | | half-months | per cent | | |
| **FIXED CHARACTERISTICS** | | | | | |
| order of birth-union | | | | | |
| 1 | 507 | 313.865 | 97.1 | 1557 | 95.9 |
| 2 | 11 | 8.878 | 2.7 | 60 | 3.7 |
| 3+ | 1 | 416 | 0.1 | 6 | 0.4 |
| sex of first two children | | | | | |
| both boys | 131 | 93.690 | 29.0 | 440 | 27.1 |
| both girls | 131 | 74.399 | 23.0 | 391 | 24.1 |
| first boy / second girl | 120 | 81.648 | 25.3 | 400 | 24.6 |
| first girl / second boy | 134 | 72.366 | 22.4 | 388 | 23.9 |
| no answer | 3 | 1.056 | 0.3 | 4 | 0.2 |
| employment ratio[a], age 15 to start of birth-union | | | | | |
| no activity or interval<12 months[b] | 74 | 39.161 | 12.1 | 233 | 14.4 |
| <= 1% | 63 | 29.168 | 9.0 | 150 | 9.2 |
| 1 <  < 10% | 14 | 4.353 | 1.3 | 25 | 1.5 |
| 10 <=  < 20% | 9 | 3.890 | 1.2 | 18 | 1.1 |
| 20 <=  < 30% | 8 | 7.033 | 2.2 | 29 | 1.8 |
| 30 <=  < 40% | 8 | 4.663 | 1.4 | 29 | 1.8 |
| 40 <=  < 50% | 15 | 9.986 | 3.1 | 50 | 3.1 |
| 50 <=  < 60% | 16 | 8.519 | 2.6 | 45 | 2.8 |
| 60 <=  < 70% | 16 | 11.286 | 3.5 | 64 | 3.9 |
| 70 <=  < 80% | 35 | 17.303 | 5.4 | 103 | 6.3 |
| 80 <=  < 90% | 40 | 34.722 | 10.7 | 166 | 10.2 |
| 90 <=  < 99% | 109 | 74.823 | 23.2 | 359 | 22.1 |
| >= 99% | 112 | 78.252 | 24.2 | 352 | 21.7 |
| employment ratio, start of birth-union to birth of second child | | | | | |
| no activity or interval<12 months | 17 | 6.784 | 2.1 | 40 | 2.5 |
| <= 1% | 121 | 62.341 | 19.3 | 295 | 18.2 |
| 1 <  < 10% | 28 | 13.652 | 4.2 | 66 | 4.1 |
| 10 <=  < 20% | 50 | 15.337 | 4.7 | 107 | 6.6 |
| 20 <=  < 30% | 31 | 17.922 | 5.5 | 104 | 6.4 |
| 30 <=  < 40% | 35 | 22.271 | 6.9 | 117 | 7.2 |
| 40 <=  < 50% | 33 | 29.636 | 9.2 | 142 | 8.7 |
| 50 <=  < 60% | 37 | 27.617 | 8.5 | 143 | 8.8 |
| 60 <=  < 70% | 30 | 23.504 | 7.3 | 128 | 7.9 |
| 70 <=  < 80% | 25 | 18.671 | 5.8 | 103 | 6.3 |
| 80 <=  < 90% | 17 | 15.058 | 4.7 | 78 | 4.8 |
| 90 <=  < 99% | 11 | 16.733 | 5.2 | 61 | 3.8 |
| >= 99% | 84 | 53.633 | 16.6 | 239 | 14.7 |
| <u>aggregated</u>: | | | | | |
| employment ratio, age 15 to start of birth-union | | | | | |
| no activity or interval<12 months | 74 | 39.161 | 12.1 | 233 | 14.4 |
| 0-24% | 89 | 40.572 | 12.6 | 204 | 12.6 |
| 25-75% | 78 | 46.108 | 14.3 | 256 | 15.8 |
| 76-100% | 278 | 197.318 | 61.1 | 930 | 57.3 |
| employment ratio, start of birth-union to birth of second child | | | | | |
| no activity, or interval<12 months | 17 | 6.784 | 2.1 | 40 | 2.5 |
| 0-24% | 217 | 99.409 | 30.8 | 521 | 32.1 |
| 25-75% | 163 | 124.097 | 38.4 | 639 | 39.4 |
| 76-100% | 122 | 92.869 | 28.7 | 423 | 26.1 |

(continued)

## Table A5. Further counts in the present analysis (continued)

| Factor | Occurrences | Exposures half-months | Exposures per cent | Number of respondents | Per cent |
|---|---|---|---|---|---|
| **labor-force attachment, age 15 to start of birth-union** | | | | | |
| no employment (v=0) | 136 | 65.741 | 20.3 | 361 | 22.2 |
| at least one month of employment (v=1) | 383 | 257.418 | 79.7 | 1262 | 77.8 |
| **labor-force attachment, start of birth-union to first birth** | | | | | |
| no employment (w=0) | 164 | 82.785 | 25.6 | 407 | 25.1 |
| at least one month of employment (w=1) | 355 | 240.374 | 74.4 | 1216 | 74.9 |
| **labor-force attachment, first to second birth** | | | | | |
| no employment (x=0) | 340 | 185.858 | 57.5 | 1014 | 62.5 |
| at least one month of employment (x=1) | 179 | 137.301 | 42.5 | 609 | 37.5 |
| **crosstabulation of labor-force in these three life spans**[c] | | | | | |
| 000 | | | | 166 | 10.2 |
| 001 | | | | 41 | 2.5 |
| 010 | | | | 87 | 5.4 |
| 011 | | | | 67 | 4.1 |
| 100 | | | | 167 | 10.3 |
| 101 | | | | 33 | 2.0 |
| 110 | | | | 594 | 36.6 |
| 111 | | | | 468 | 28.8 |
| **TIME VARYING CHARACTERISTICS** | | | | | |
| | | | | | |
| **current civil status** | | | | | |
| cohabiting | 8 | 3.544 | 1.1 | | |
| married | 511 | 319.615 | 98.9 | | |
| **labor-force attachment since second child** | | | | | |
| no employment | 349 | 176.184 | 54.5 | | |
| at least one month of employment | 170 | 146.975 | 45.5 | | |
| | | | | | |
| **Total number** | 519 | 323.159 | 100.0 | | |

Notes:
(a) The employment ratio in a life segment is defined as the ratio of the time spent in employment to the length of the time period adjusted for time spent in education. Thus, the ratio's denominator is the length of the segment minus the time spent in education during it.
(b) 'No activity' means that neither an educational nor a job activity has been recorded in any segment month. 'Interval' indicates the denominator in the definition of the employment ratio.
(c) Explanation of three digit code: the number vwx gives the labor-force attachments in the three life spans. For each digit (v,w or x), 0 stands for 'no employment' and 1 stands for 'at least one month of employment'.

# Table A6a. Age attained at second birth; cumulative percentages

| Age | educational level | | | |
|---|---|---|---|---|
| | basic | lower-secondary | upper-secondary | tertiary |
| 15 | 0 | 0 | 0 | 0 |
| 16 | 0 | 0 | 0 | 0 |
| 17 | 1 | 0 | 0 | 0 |
| 18 | 3 | 0 | 0 | 0 |
| 19 | 7 | 1 | 2 | 0 |
| 20 | 14 | 4 | 3 | 0 |
| 21 | 23 | 11 | 6 | 0 |
| 22 | 34 | 19 | 9 | 1 |
| 23 | 43 | 29 | 14 | 6 |
| 24 | 55 | 40 | 23 | 9 |
| 25 | 65 | 52 | 33 | 17 |
| 26 | 76 | 62 | 53 | 21 |
| 27 | 83 | 70 | 64 | 33 |
| 28 | 90 | 78 | 77 | 44 |
| 29 | 93 | 84 | 83 | 55 |
| 30 | 95 | 89 | 88 | 71 |
| 31 | 96 | 92 | 89 | 79 |
| 32 | 97 | 95 | 91 | 84 |
| 33 | 97 | 97 | 96 | 90 |
| 34 | 98 | 98 | 98 | 94 |
| 35 | 99 | 99 | 99 | 97 |
| 36 | 100 | 100 | 99 | 98 |
| 37 | 100 | 100 | 100 | 100 |

Note: For each educational level we have grouped together ages in 20 per cent intervals

# Table A6b. Relative age at second birth

| Age | age according to educational level | | | |
|---|---|---|---|---|
| | basic | lower secondary | upper secondary | tertiary |
| very early | 15-21 | 15-22 | 15-24 | 15-26 |
| early | 22-23 | 23-24 | 25 | 27-28 |
| medium | 24-25 | 25-26 | 26-27 | 29 |
| late | 26-27 | 27-28 | 28-29 | 30-31 |
| very late | 28-40 | 29-40 | 30-40 | 32-40 |