Squeezing Birth into Working Life. Household Panel Data Analyses Comparing Germany, Great-Britain, the Netherlands and Sweden

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Chapter 1 addresses why and how this book analyses women's labour market position in Germany, Great-Britain, the Netherlands and Sweden in the period they plan and actually have children. Women in these countries have increased their educational level and their labour force participation rates during the 1980s and 1990s. For increasing numbers of young couples the question of how to fit a birth into a woman's curriculum vitae is a difficult decision problem. We concentrate on individual women and social policies on work and family in this book. In this book we are mainly interested in women's human capital accumulation before they give birth and in the immediate period after giving birth. Labour force participation, hours of work and wages in the period around child birth are considered to be crucial for the women's later life time career. Also characteristics of the spouse such as earnings have an influence on this decision. Social costs of incompatibility of paid work and children include for example depreciation of women's human capital investment, women's loss of economic independence, possible harm to children if parents have less time for their children, medical costs related to having children beyond the optimal biological age.

Governments in different countries have developed social policies on the combination of work and children. There are differences in expenditure and in ideology of family values and economic independence of household members.

In Chapter 2 the governmental policies on the family of Germany, Great-Britain, the Netherlands and Sweden are characterised making use of Esping-Andersen's (1990) welfare state typology and Sainsbury's (1994) gender based welfare state typology. These policies have been used to formulate hypotheses on women's labour force behaviour in connection with childbirth laid out in Chapters 4-7. Chapter 3 describes and comments on the choice and construction of variables from household panel data sets collected in the countries included. A comparative fertility and work file has been created including monthly changes in women's labour market position in the period of birth giving. Chapter 4 empirically investigates labour force transitions in connection with child birth by birth order in Germany, Great-Britain, Sweden and the Netherlands. Furthermore the determinants of being a career oriented mother are analysed considering the labour force status three months before giving births and twenty four months after giving birth. In addition the determinants of the likelihood of entering the labour market rather quickly after giving birth are empirically analysed. In Chapter 5 we analyse the short term effect of childbearing on women's career and earnings for first and second births in Germany and Sweden. The hypothesis is that human capital accumulated before first birth will determine earnings during and after mothering. The determinants of the share of women's earnings in combined market earnings of the household after child birth is decomposed into predicted wage, probability of labour force participation and predicted hours of work given labour market participation. In Chapters 6 and 7 we empirically analyse to what extent economic factors are responsible for the decisions on delaying the time of first birth. Chapter 6 explains how decisions on the timing of births are influenced by economic factors such as opportunity costs of time, which primarily consist of labour market income forgone and investments in human capital forgone. Chapter 7 estimates the gains in life time earnings by education that women have made by postponement of maternity in the Netherlands.
analysing potential earnings curves and women's wages, labour force participation and
hours of work after giving birth.

**Breadwinner ideology against individual and equal role sharing ideology**

Women will choose to remain working at home or to enter market work depending on
the net benefits in a broad sense from choosing one of the alternatives. A number of
factors influence this choice and have been discussed in chapter 2. These factors are, the
tax and benefit system (Blundell 1993; B. Gustafsson and Klevmarken 1993;
Zimmermann 1993), whether taxes are jointly or individually assessed (Gustafsson
1992; Gustafsson and Bruyn-Hundt 1991; Nelson 1991), day care subsidies, availability
of good quality child care (Gustafsson and Stafford 1992; Leibowitz et al. 1992), the
duration and replacement ratio of parental or maternity leaves (Sundström and Stafford
1992), the organisation of the school day and after school care, the availability of
(part-time) jobs and finally regulation as regards leave for caring for sick children. In all
these respects, Sweden has chosen a policy mix that benefits the two-earner family
according to an ideology of individual responsibility and equal role sharing which began
in the 1930s and 1940s inspired by the 1934 book by Alva and Gunnar Myrdal on the
Population Crisis (Gustafsson 1994). Germany on the other hand, has chosen policies
that benefit the one earner family according to the breadwinner ideology (Sainsbury (ed)
1994; Gustafsson 1984, 1994; Gustafsson and Stafford 1994, 1995) offering tax-benefits
to one earner/one carer couples, long maternity leave period with low pay, part-time
child care facilities and part-time school day. The Netherlands changed from mostly
bread winner oriented social policies in the 1960s and 1970s to mostly equal role
sharing social policies in the 1990s. On the breadwinner-individual model axis the
United Kingdom takes a place in between the breadwinner and the individual model of
governmental policies on the family.

The type of welfare state ideology also influences policy choice. Germany is the
prototype of the conservative corporatist welfare state. Also the Netherlands till the
1990s to a large extent falls into this category. Sweden is the prototype of the
institutional universal social democrat welfare state. A third type of welfare state is
characterised as the liberal or residual welfare state with the United States as the
prototype. Great Britain as regards policies for the family to a large extent fall into this
category. In comparison to Germany, the Netherlands and Sweden very little
government support to families with children exists and having children is seen as a
private concern. Individual parents can enjoy better provisions than the national
standards if they work with an employer who has as a result of negotiations conceded to
better provisions. Since the 1990s the Dutch government stimulates employers to create
care facilities for employees, subsidies for child care capacity have been increased
employees' right to work part time and the right to increase work hours again are on
the political agenda. However, only the collective labour agreements for government
employees allow half a year paid parental leave as compared to national legislation
which allows only unpaid leave.

Making use of the 'fertility and work' files which we created out of the national
household panel data sets as described in Chapter 3, the purpose of Chapter 4 has been
to analyse labour force transitions around childbirth and the extent to which these lower
labour force participation rates of mothers are explained by policies in connection with
childbirth.
Labour market status before entering motherhood

Twelve months before birth should indicate the situation before any adjustments in connection with birth have been made and three months before birth could possibly be the beginning of adjustments. Although the proportion participating in the labour market of first time mothers 12 months before giving birth to the first child is highest in Sweden, the proportion of these being in full-time work is lower than in Germany and Great Britain. In this respect Sweden does not appear to be the work society it is usually considered to be and which is also the intention of the institutional welfare state. Among German women both in West and East Germany, two thirds are in full-time work three months before the birth of the first child as against only 51.1% of the Swedish women. This result may imply that German women make the most of their working life before becoming mothers because they know they will soon enter into the status of home maker.

Of the groups considered in Table 4.1 only immigrant women in West Germany are full-time home makers to any large extent before they have children. In this group 27% are full time home makers 12 months before the first child is born and 41% 3 months before the first child is born. There is a considerable decrease in probability of full-time work from 12 months before having the first child to 3 months before giving birth among immigrant women in Germany. In West Germany part-time work does not increase during this period, but in East Germany it does. Being on maternity leave does increase as the date of birth is approaching, and in Sweden this increase is relatively large. A rational Swedish mother to be should make sure her income is as large as possible right before birth. The drop in ‘long part-time’ and increase in ‘on leave’ between 3 and 12 months confirms such behaviour, but the low full-time participation rate does not.

In East Germany the drop from 83% full-time a year before birth of the first child to 66% three months before birth is accompanied by an increase in total unemployment and an increase in part-time work. This may be a period phenomenon caused by reunification which resulted in an increase in unemployment in the new German states of former East Germany from 10% in 1991 to 21% in 1993. Similarly, the decrease of full-time and the increase of part-time work may be explained, by demand for labour considerations particular in this period rather than labour supply considerations of wishing to size down work efforts before birth. In West Germany the drop in full-time work is accommodated by increases in unemployment and unpaid work at home both among German women and immigrant women.

The lowest employment rate 3 months before first birth is found among women in Great Britain (51%) and Immigrants in West Germany (43%). According to Table 4.1, the employment rate of British first-time mothers declines sharply between 12 and 3 months before birth from 79% to 51%. A large proportion of British women end up in leave of absence three months before birth but unlike mothers in Sweden and similar to immigrant women in Germany the largest proportion of British women end up in unpaid work at home three months before birth. The most likely explanation is that during the observation period a high proportion of the economically active British women were not entitled to maternity leave.
Because Swedish women lose benefits during parental leave if they have smaller earnings three months before birth, we had expected Swedish women to be more work-oriented right before birth than women of the other countries where benefits are unrelated to previous earnings. However this is not what we find. The tight labour market in Sweden until 1991 may have induced women into thinking that the risk of losing their job was small so that they chose to be on leave rather than to be at work.

**Flows into and out of the labour force 3 months before and 24 months after child birth**

Section 4.5 examined the group of women with certain characteristics that are career-oriented in the sense that they were participating in the labour force until 3 months before birth of their child and returned to wage employment after the end of legal maternity leave, which we chose to be 24 months after the birth of the child. The choice of 24 months was to capture career-oriented women under the German provisions, which allowed for 24 months job protection until 1992, whereas the Swedish job protection period is 18 months. For Great Britain, and the Netherlands this time span after childbirth may not be as useful at capturing career oriented women, because the job security period is only 6.7 months in Britain and 6 months per parent in the Netherlands since 1990 but only paid in public sector.

In each successive birth order among West German and Dutch women, the group of continuous labour force participants (ee) decreases while the group of continuous home makers (hh) increases to well over half of the women. Among Swedish women the group of continuous career women remains about half of all women who had their child during the observation period, also for the higher birth orders while the group of continuous home makers remains a minority of about 12% of all women having a child. The employment rate declines to 57.8 after the birth of the first child. The proportion of women in 'eh' is higher after the first birth, whereas the proportion 'he' is higher after the second birth. This is consistent with findings of Hoem (1993) and indicates that Swedish women are making use of the “speed premium”, which means that maternity pay will be based on earnings before the first birth if the second child is born within 30 months after the first child.

The British low employment rates before and after birth are also reflected in the small proportion of ‘ee’ mothers in Great Britain. Only 23% of the British first-time mothers were employed three months before and 24 months after first birth. The findings of other British studies suggest that our proportion of ‘ee’ mothers is low (Macran et al. 1995) and that more mothers do return if we would have chosen an earlier month, for example 12 months instead of 24 months after childbearing. Because of the poorer maternity leave provisions, many British women return to work earlier. The short supply of day care and the costs of care will also contribute to some mothers either not returning to work after childbirth, or not continuing to work for much longer after they have returned. Also the transferable ZRA (see chapter 2) creates disincentives for secondary earners, mostly women to work. The proportion of recent mothers in Great Britain who are not employed 24 months after the second and third birth is much higher than in Sweden.
Determinants of being a career oriented mother

The next step is to analyse the probability of being an ‘ee’ woman when considering women’s own human capital and the income of her spouse. For German women in West Germany and for Dutch women the results tell a convincing story that the human capital accumulated by the women before the birth of the child matters in determining whether or not she is an ‘ee’ woman. The longer the education of the woman and the more labour market experience she had before birth the more likely she is to have a continuous labour force career. This is true irrespective of birth order. The breadwinner ideology would assume that wives of richer husbands do not have to work in the market so that we could expect a negative influence from husband’s income on the probability of being an ‘ee’ woman. Only for second births of West German women we see that the husband’s income is significant. A higher income then increases rather than decreases the likelihood of the mother being a continuous labour force participant. This suggests assortative mating in the marriage market rather than a breadwinner effect. For the Netherlands we do not find that husband’s income is significant. Further we expected that women whose husbands relative to themselves had larger human capital would be less likely to be career women. In a more extended logit model we measured this by the difference in years of schooling but this variable was never significant, nor was the age differential significant. Finally it may be expected that women who do not intend to have another child may have a different labour force behaviour than women who expect to have another child in the near future. We entered a dummy variable for not having another child during observation period, but the variable was not significant. The findings on the determinants of being an ‘ee’ woman among immigrant women in Germany are similar to those for West German women; the woman’s own human capital determines her behaviour while husband’s income does not influence the woman’s choice for a continuous career.

Joshi et al. (1995) suggest that polarisation has been occurring between low and highly educated women. Highly educated women who delayed their first birth, built up work experience before birth and were able to use the new maternity legislation and pay for child care. In their analysis, the age of the mother at child birth became insignificant when education and work experience were included since those who delay return are less educated and had their child at an early age. Similar findings are obtained in studies by Dale and Joshi (1992), Jenkins (1994), Gregg and Wadsworth (1995). Our results in Table 4.3 do not reflect such polarisation, rather we find that the woman’s own human capital i.e. education and labour force experience determine whether or not she is in market work both three months before and twenty four months after birth.

Turning to a similar analysis for Sweden we get much less precise and insignificant results. We are inclined to believe that these results reflect real differences in comparison to the other countries. Swedish mothers are able to combine work and family also with fairly small amounts of human capital. German and Dutch women can act according to the individual equal role sharing model only if they are well educated. If they are less educated the breadwinner ideology and institutions put them into the home maker position.

The timing of entering the labour force after birth

In section 4.6 we analyse how long it takes before recent mothers enter market work for the first time after birth. We do not require that the woman remains in the labour market
for an extended period. Such a restriction on the data would lower the numbers because in all the groups studied there is a considerable amount of in and out movements. We also analyse return to the labour market regardless of having a subsequent child. The effect of subsequent children on return to work after the first child birth is included in Chapter 6.

The cumulative proportion of recent mothers still not entering the labour market by three monthly intervals after birth controlling for the exposure to risk, shows that very few mothers were at work 3 months after child birth in any of the groups we studied. Interestingly and consistent with the shorter job protection period, Dutch and British mothers entered a job considerably sooner after birth than women in Sweden and Germany. Already three months after the birth of the first child 28 per cent of Dutch women returned to their job. It takes nine months before one quarter of British mothers are in market work after the first birth but after six months already 15% are employed.

The differences between Sweden and Germany are very small when comparing the proportion of mothers who are employed when the child is 6 months old, and it does not differ between the first and second birth. When the child is twelve months old the Swedish mothers are much more likely to be in market work than the German mothers. This difference between the two countries becomes more pronounced as the child grows older. When the child is three years old 80% of Swedish mothers have entered the labour market compared to 55% of the German women and 43% of immigrant women in West Germany. When the child is three, the proportion of women observed in the labour market after birth is highest in Sweden at every birth order. But the Dutch figure is almost on the same level as the Swedish figure with only 24 percent have not yet re-entered the labour market.

The proportional hazard models of the duration in months before entering market work for mothers after childbirth presented in Table 4.5 show that among West German women, at the mean experience, the older the woman is at the child’s birth, the later she returns. At the mean age at childbirth, the more market related human capital she accumulated before the birth of her first child, the earlier she entered employment. Income of the spouse has a significantly negative effect implying that women with richer husbands delay their entrance to the labour force. Time dummies to capture changes in the German job protection period were never significant. The only difference between immigrants and other West German women is that years of employment experience is the most important explanatory factor when analysing the tempo of entering the labour market after birth of immigrants, while educational level is most important for West Germans. This is irrespective of birth order.

The regression on the Swedish duration before entering work after second birth shows that education does not influence the timing of entering employment. After the second birth, a mother returns to work later the older she was at birth of her second child (at mean work experience). The positive interaction effect between age of the mother and her experience for second time mothers in Sweden indicates that at ages above the mean, more employment experience increases the tempo of entering the labour market after birth while the opposite is true at younger ages at second birth. We do not find any significant results for first births, which may have to do with the fact that about 80% of Swedish women who have one child proceed to have a second child and it is profitable to have the second child soon after the first without re-entering.

In contrast to the German and Swedish mothers, British mothers of 2 or 3 children are in employment sooner the older they are at childbirth. This result is consistent with other
British studies which have found that career oriented women who are also highly educated, delay childbirth and return quicker after giving birth when their maternity leave has expired (Macran et al. 1995; Joshi et al. 1995). The variable that controls for interaction between age and experience turned out to be significant for the first child, revealing a positive effect of more work experience on return to work, but the effect declines with age at motherhood.

Chapter 5 concentrates on the economic vulnerability that women experience around childbirth. Whereas the long run effects of labour force interruptions on earnings have been researched both using cross sectional data (Mincer and Polacheck 1974, Corcoran & Duncan 1978, Dankmeyer 1996, Gustafsson 1981, Albrecht et al. 1997) and using longitudinal data (Mincer and Ofek 1982) chapter 5 focuses on the short run effects. We use information on earnings for the women and their spouses, taking one wave before birth and two waves after birth, which is approximately two years, to compute women’s contribution to family earnings before and after giving birth.

**Women’s contribution to family income**

Swedish women go through the childbearing process with only a small drop in earnings. The variation in the proportion of family income earned by the women in Sweden varies from 44 percent before first birth to 34 percent after second birth. The smallest earnings of German women occur after the birth of the first child and before the second child when German women only secure 12 to 14 percent of family earned income. German women have smaller earnings in comparison to their husbands than Swedish women have. Swedish women however always lower their earnings after birth in comparison to before childbirth. This is true also for German first time mothers but not for German second time mothers who rather increase their earnings after their second birth in comparison to before their second birth.

German women who worked two years after the second birth seem to be a select group. The results indicate that husbands of these women decrease their earnings after the second birth and that the average earnings of the women exceed that of their husbands. Swedish husbands on the other hand in all three panels of Table 5.1 increase their earnings after birth of their child in comparison to before the child was born. The increase from earnings before the birth of the child compared to earnings after the birth of the child among Swedish husbands only varies from one percent to 12 percent. The German data show much more dramatic changes both for mothers and fathers. Fathers increase their earnings after birth of first child. For the German mothers there are dramatic decreases in income after first child and substantial increases after the second child is born. The exception is in panel C of the select group of mothers who were employed after first birth where first time mothers also increase their earnings from before to after birth of the first child.

**Results of estimations on labour supply of recent mothers**

Most studies of women’s labour supply include variables on family composition, number of children and children’s age (Killingsworth & Heckman (1986), Gustafsson (1992), Vlasblom (1998)). In this study we have instead selected the women at precisely
the same moment in their family building cycle namely at the point of having their first birth or second birth respectively. We hypothesise that human capital accumulated before birth of first child will determine earnings during and after mothering of pre-school children. The wage and income variables perform with expected results for the labour force participation decision 24 months after birth of the first child for first time German mothers. The higher her own predicted wage the more likely she is to participate in the labour force and the higher her husband’s income the less likely she is to participate in the labour force. German second time mothers base their decision on hours of work and labour force participation on their predicted wage before first birth. The wage effect is positive implying that women with higher wages work longer hours i.e. the substitution effect is larger than the income effect, which agrees with other research on women’s labour supply.

The results of the Swedish regressions are less conclusive than the results of the German regressions. We find that the higher the first time mother’s wage, the more likely she is to participate in the labour force but she does not base the decision on hours of work on her wage. Husband’s income does not have a significant effect on either a first time mother’s labour supply decision or on a second time Swedish mother’s labour force decision. This result is in line with results in Chapter 4 which showed that about 80 percent of Swedish mothers are labour force participants within 24 months after giving birth to a child.

**Decomposition of after birth’s earnings: a comparison between Germany and Sweden using simulations**

We find that wages of German mothers who were labour force participants 24 months after birth are larger than wages of Swedish mothers but hours of work are smaller for German than for Swedish mothers so that the total difference in average monthly income of working mothers is within 200 Deutsche Marks per month i.e. 10 percent of a monthly income.

The proportion of wife’s earnings in couples joint earnings for the subgroup of women who worked when their child was two years old, does not differ very much between Germany and Sweden. The variation is from 0.35 to 0.43. The large difference between Germany and Sweden is in labour force participation of mothers when the child is about two years old. Whereas 38 percent of first time mothers and 31 percent of second time German mothers were in paid work when their child was two years old, this was true for 77 percent of first time Swedish mothers and 81 percent of second time Swedish mothers. The average income of all German mothers including nonparticipants in the labour force is therefore less than half of that of Swedish first time mothers and less than one third of that of second time Swedish mothers. The resulting proportion of couple’s earnings contributed by the wife is therefore not more than 16 percent for German first time mothers compared to 35 percent for Swedish first time mothers and 12 per cent for German second time mothers compared to 34 percent for Swedish second time mothers.

We use a simple model to predict the woman’s contribution to family earnings. The prediction is fairly close, within a few percentage points of the observed women’s contribution to family earnings, with the biggest relative discrepancy being that the prediction for German first time mothers show that they contribute 13 percent of
earnings in panel 5.4B whereas it is 16 percent in panel 5.4A and 14 percent in Table 5.1A. However the differences between our two countries are much bigger. The overall result is that German mothers would, given their characteristics, have increased their earnings from about 11 to 16 percent of family earnings to 30 to 32 percent of family earnings if they had behaved according to Swedish regressions. Furthermore, Swedish mothers would have decreased their earnings' share in the family earnings from about 33 to 38 percent to about 17 to 21 percent. We believe that these differences can be ascribed to the fact that there are many more facilities to combine work and family in Sweden than in Germany due to better provisions in family policies as explained in Chapter 2.

Public Policies and Timing of Birth

Chapter 6 analyses timing of first birth in Sweden, Germany and Great-Britain. In Sweden we may expect fewer differences between more economically productive women and less economically productive women because of policies to combine work and family. However Swedish mothers to be have a financial incentive to postpone birth until they have earned a fairly high income because parental benefits for 12 months are based on earnings before birth, 90 per cent for one month and 75 per cent for 11 months. In addition the so-called ‘speed premium’ makes clustering of births a profitable option which should distinguish Swedish women’s behaviour from behaviour in the other two countries. In Germany the combination of work and family is not facilitated by social policies, rather the contrary. The incentive for highly economically productive women to postpone births is therefore strong. Once the first child has been born, a rapid return to paid work is unlikely. German women considering spacing their children close together rather than two shorter career interruptions are not influenced by public policies and should therefore be indifferent between the two choices. Because Germany favours full-time maternal care rather than assisting mothers to combine work with family, there could be a demarcation line between the highly productive women who want to combine work and family and others who do not wish or cannot struggle against the ‘male breadwinner’ organisation of the German society. Individual human capital considerations will be more important in Germany than in Sweden. The same reasoning applies for British women since they are not assisted by public policies to combine work and family.

Timing of first birth

The micro data show that in all three countries more highly educated women tend to have their first child at a later age than less educated women. Secondly, women who proceed later to have another child have had their first child earlier in life than women who are observed only to have had a first birth. This pattern is true within each educational group and across educational groups for all three countries, except for more highly educated Swedish women. Also the women who were observed to have three children in the data had their first child at a still younger age than those who were observed to have two children.

Comparing our three countries we observe some consistent differences. Women in Great Britain become mothers at a younger age than either in Germany or in Sweden. In Great Britain because benefits are small less educated women have less reason to think about obtaining a right to a maternity benefit than is the case in Germany and Sweden.
This may lead to earlier motherhood among less educated British women in comparison to German and Swedish women. However as in the other two countries, more highly educated women in Britain have to consider their labour market prospects and this induces postponement of motherhood as explained in section 6.2. The relatively brief job guarantee period in Britain might make having a child more costly in career terms than would be the case if the job protection period was larger because a mother may have to give up her job and find a new one before she can return to paid employment. Consequently British women are forced to pay more attention to the career costs of having children. Demographic trends in all three countries have shown a rise in the age of first-time mothers over time. Since the British data period starts earlier and therefore covers 1980-1992 different from Sweden and Germany for which the data start in 1984, British mothers on average are expected to be slightly younger out of the demographic reason.

One of our theoretical predictions implies that other things equal, the higher husband’s income, the earlier the birth of the first child. The theoretical variable for the influence of husband’s income is the present value of his life-time earnings which is not available. Therefore we use predicted income at age 40 following Willis (1973) for the Swedish and the German data for which we have information on husband’s income at the birth of the first child and his age at this point in time. However the effect of husband’s income at age 40 on the timing of motherhood is positive and statistically significant for Sweden which means that the higher husband’s income, the later first birth – contrary to economic theory. The variable husband’s schooling is meant to capture his education and career planning and we find that there is an effect independent of income, for Germany and Great Britain, but not for Sweden. In Britain first births are timed later the higher the husband’s level of education and the higher his positioning on a seven-steps occupational ladder (used because husband’s income is not available for 1980-1990). For all three countries we found when husband’s income and education are held constant, the more well-educated the woman the longer she postpones motherhood.

*Clustering births or second career break?*

The time it takes before entering into paid work after giving birth is not influenced by whether the woman enters into part-time or full-time employment. This is true for both Germany and Sweden. In both countries a large majority of mothers choose part-time employment rather than full-time employment. This is true for 63 percent across categories in Germany and for 75 per cent in Sweden. For Great-Britain the data do not allow to make this distinction. Swedish mothers are assisted in this choice by family policies because parents have a legal right to shorten work hours to six hours a day until their child is eight years old, and then return to full-time in the same job. One interesting similarity across countries is that women who enter the labour market between births do so after about 12 months in all three countries, although the job protection period varies between countries. This might lead one to posit a biologically and emotionally optimum of 12 months full-time baby care coupled with a subsequent return to work on a part-time basis. One difference between Sweden and the other two countries is that a greater proportion of Swedish first time mothers re-enter the labour market between first and second births: 35 percent in Germany and 39 percent in Great Britain compared to 47 percent in Sweden. Although Swedish parents have a right to the extend to another 18 months parental leave when the second child is born within 30
months of the third, this does not mean that they could not enter the labour market during 36 months (18 months for the first child and 18 months for the second child) of leave. Swedish parents are allowed to interrupt leave in order to save days for later use. Sweden also differs from the other two countries in that the duration of time out of the labour market is about one year both for the women for whom we observe only the first birth and for women who re-enter between births. For women who do not re-enter the labour market between the first and the second birth the duration of home time is about three and a half to five years.

In Germany and Great Britain the younger the mother is at the birth of the first child the less eager she is to enter paid employment afterwards. In Germany and Great Britain, women with more human capital accumulated at time of first birth spend less time at home since both education of the mother and years of experience of the mother have a positive effect on the number of months before entering paid employment. This effect is in line with our expectations that women with more human capital should be more eager to return to paid work.

**Theoretical considerations on optimal age at maternity**

In Chapter 7 we are interested in the planning problem of young women: when is the right time to give birth considering their life time earnings? We intend to measure the direct costs and the human capital investments loss for different patterns of hours and participation during different lengths of labour market spells of women after having had their first child. In the simulations we fully concentrate on women and assume that husband's income has not an influence. Since women have different market productivity because of different educational attainment and different number of years of experience, the career costs differ by women's age at having their first child (as laid out in chapter 6). Career costs consist on the one hand of direct loss of earnings due to leaving the labour market to give birth and care for a new born child and on the other hand the loss of returns until retirement because of human capital investments not undertaken during a period of home time.

Which is the relevant potential earnings curve in the planning problem of a future mother? We believe that current and prospective caring tasks are the main explanatory factor in the male/female wage gap. The relevant potential earnings against which the woman will judge her career prospects is the age earnings curve on average of narrowly defined educational groups. Therefore men's age earnings curves will be used as potential earnings for a woman in her planning decision for the timing of maternity. We showed that women's prebirth wages are rather similar to those of men.

A second assumption which is empirically confirmed is that the wage that a woman receives by return to work after a period of home time is the same as that which she earned before leaving her job for childbearing and infant care.

**Simulations of life time earnings loss in the Netherlands of having the first child at different ages**

We simulate the life time earnings loss by varying assumptions on years of home time, probability of labour force participation in the post maternity period and varying hours of work in the post maternity period. The number of years of home time in connection with childbirth are assumed to be either 1, 4 or 10 years. In some simulations we use
information on probability of labour force participation one wave (two years) after first birth for women who gave birth to their first child in the period 1990-1996 by educational group and information on hours of work for women who were employed one survey after giving birth to their first child. The labour force participation of the 1990 generation of Dutch mothers is much larger than those of the 1980 generation of Dutch mothers and we believe that future mothers who now have to make this planning decision are more likely to behavior like the 1990 generation. Life time earnings loss is expressed as a fraction of potential life time earnings discounted back to age 23. We do the simulations for three educational groups high, medium and low educated.

If you plan to be a full time home maker during 10 years the life time earnings loss will be about 24 per cent of potential life time earnings if you have your child at age 35 in comparison to having a child at 23 which means a loss of 31 per cent of potential life time earnings. If part time work becomes a life long behaviour in the post maternity period the earnings loss will be 30 to 50 per cent of potential earnings for all educational groups. There are big differences in observed employment probabilities and the life time earnings loss by applying observed values will therefore vary between educational groups. Whereas high educated women lose at a maximum 40.5 per cent of potential life time earnings the loss always amounts to more than 45 per cent for low educated women with a maximum of 77.1 per cent for a low educated woman who decides to have a child at age 23 stay out for 10 years full time and then have the observed probability of becoming employed afterwards.

If the probability of employment and hours of work of employed women will remain the same for the whole post maternity period until retirement the life time earnings loss will vary across educational groups with low educated women losing at least 56 per cent of potential life time earnings and at most 88.5 per cent and high educated women losing a minimum of 33.7 per cent and a maximum of 65.1 per cent. Losses of this magnitude have been the rule for Dutch women of earlier cohorts (Dankmeijer, 1996, Mertens, 1998).

In all the simulations where part time work continues for the whole post maternity period the loss of potential life time earnings is substantial and the loss is always smaller the later the woman enters into maternity.

Life Time Earnings Gain by Postponement of First Birth

For all three educational groups comparing the 1980s to the 1990s postponement of first birth in the Netherlands has been substantial. Also more educated women have their children later than less educated women. Women with medium or low education have postponed their first child’s birth beyond age 27 to a very large extent comparing the 1980s to the 1990s. Whereas 70 per cent of these women had their first child by age 27 in the 1980s the percentage had decreased to 45 per cent for women with medium education and to 54 per cent for women with low education. The distribution of first births to high educated women is pushed further into older first time mothers. In the 1980s by age 31 as many as 83 per cent had become mothers but in the 1990s this same proportion was reached not before age 33. As many as 14 per cent of the first time mothers with high education had their first birth after age 35 in the 1990s. The postponement of motherhood across educational groups is presented in the last two columns of Table 7.3. Whereas in the 1980s by age 31 there remained 9 per cent of first births yet to come this was the case for 19 per cent of first births in the 1990s.
Women have been rational in delaying first birth. If the pattern of mother's age at first child birth of the 1980s had prevailed into the 1990s 17 per cent more women would have given birth by age 23. Now instead they postpone first birth say to age 27 and therefore lose 44.3 per cent of potential life time earnings instead of 50.2 per cent. Another 23 per cent according to Table 7.3 would have given birth by age 27 if the age pattern of birth giving had remained the same in the 1990s as it was in the 1980s. This means that their life time earnings loss is reduced to 38.6 per cent from 44.3 per cent of potential life time earnings. There are therefore substantial gains to be made by postponement of birth.

If however it may be the case that the 1990 generation of Dutch women will reenter full time employment after an extended period of half time work the earnings loss will be limited. Say that our medium educated woman works 21 hours per week during four years and then returns to full time work. Her life time earnings loss will then be limited to 4.4. to 6.4 per cent of potential life time earnings and the maximum gain of postponement is only 2 per cent of potential life time earnings. For such a woman there is consequently no big issue to have a child by age 27 rather than wait until age 35, when chances of becoming pregnant decrease and other complications may arise.

Medical costs associated with postponement of births would in principle offset the costs of life time earnings loss as would also the costs of day care which the mother otherwise would do as unpaid work at home. Costs of using biomedical techniques for conception is one aspect of such costs. Other aspects of costs are associated with health of children and health of mothers. It is known that the risk of being born with Down syndrome increases as the mother is older. We do not know if older mothers are observed to have more health risks in connection with births but if this is the case such costs should also be included.

In the setting of the Dutch 1990s subsidised day care is available to a limited extent, but Statistics Netherlands (1993) shows that on average parents still pay 28 per cent. In addition market priced day care for children is expensive to families. Given individual taxes, day care fees and the legal right to keep a job on a part time basis it is an economically attractive option for the couple to share: mother cares for the child at home one day and works 4 days, father cares for the child at home a different day, childcare is paid for 3 days or maybe even 2 days if there is a grandmother who volunteers for one day a week, a situation that would not be unusual given the fact that within the generation of women with adult children more than 50 per cent are housewives (OSA.Kunnen et al. 1997). Results of Rönsen and Sundström (1996) comparing family policies of Sweden and Norway over time show that the longer the job protection period the sooner recent mothers return to work because more mothers can arrange satisfactory day care for a one year old or 18 months year old child than for a two months old child. This implies that a longer job protection period would probably result in more Dutch mothers keeping their jobs after maternity, which is a factor that decreases life time earnings loss and therefore decreases the gains of postponement of maternity. Whereas there is an economic rational for working part time during periods when day care costs are paid the economics of continuing to work part time when such costs are not any more paid are different. However if as the goal is for Dutch equal opportunity policies a shorter work week will apply in equal amount for men and women this is a life quality gain for the society.
Windows of opportunity

BHPS can in future be included in a comparative analysis of GSOEP, HUS and OSA concerning the change of women’s earnings in the period of having a child, because the BHPS requests comparative earnings’ data from 1992 onwards, and OSA continues to collect requested information from 1994 onwards. Another interesting future research theme is the labour market behaviour of (still) childless women, e.g. women who did not yet give birth during the past 5 years. We already included these data in the Dutch fertility and work file.