Fertility of Power Couples in Sweden, 1991-2005
A Longitudinal Register-Based Study of the Impact of Education and Income on Second and Higher Order Births

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#### Abstract

This paper studies the fertility of power couples, i.e. couples in which both partners are academic graduates and have high-powered careers. The determinants of second and higherorder births are analyzed multivariately using longitudinal data on couples from different population registers in Sweden, 1991-2005. Power couples are identified using level and field of education, and sector of employment, controlling for couple income. The importance of educational status is supposed to reflect different degrees of work-family conflicts in different fields and the relative power balance within the couple. The results show that power couples have higher fertility than other couples, which implies that despite the expected higher opportunity costs of childbearing for these couples, those who start a family seem to manage both careers and continued childbearing. The analysis also indicates that power relations within the couple, measured by the age difference between partners, affected continued childbearing, while couple income seem to have different effects in different intervals.


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## Introduction

The presence of so called power couples is a growing feature of modern life that consists of two individuals both of whom have high-powered careers or are otherwise influential (cf. Costa \& Kahn, 2000; Compton \& Pollak, 2004). There are different ways of gaining power in the public eye, such as money, fame, expertise and influence in important decision-making. Today's power couples are different from those of the past (Abbott, 2003), and related to the huge increase in female education and labor force participation since the 1960s and the increased prevalence of the dual-earner family. Power couples are also called dual-career couples (Rapoport \& Rapoport, 1969; Rapoport \& Rapoport, 1971) or discussed in terms of "coupled" or "coordinated" careers (Bernasco, 1994). Power couples or dual-career couples, however, differ from dual-earner couples since both partners pursue a career that is characterized by high professional standards, continuous progress through a hierarchy, and a high degree of challenge and commitment. In the dual-earner couple, both partners hold a job but only one (at the most) has a career. A dual-career couple faces a number of challenges of which co-location and geographic mobility, and family responsibilities are the most important. From a gender perspective, these aspects, especially that of family responsibilities, affect women's careers more than men's careers. The incompatibility between family and a true career helps preserve a number of gender gaps and have made researchers throughout the Western world draw attention to women who "opt out" (Stone, 2007), and to the late and low fertility as well as the increasing childlessness among highly educated and professional women (e.g. Gerson, 1985; Hewlett, 2003).

A large literature explains low fertility in the industrialized world by an increase in women's education and economic opportunities, and, at the same time, connects women's greater responsibilities for childbearing and childrearing to their lower performance in the labor market. The incompatibility between career and family is mainly discussed with respect to women. Much less attention has been given to the situation of men, or to that of couples. Numerous studies have shown show that women's educational attainment has a negative effect on various fertility measures (e.g., Blackburn, Bloom \& Neumark, 1993; Bloom \& Trussel 1984; Blossfeld \& Huinink, 1991; Gustafsson \& Wetzels, 2000; Happel, Hill \& Low, 1984; Marini, 1984; Rindfuss, Morgan \& Swicegood, 1988; Spain \& Bianchi, 1996). Others have found positive relationships between educational attainment and fertility after first birth (e.g. Gerster et al., 2007; Hoem \& Hoem, 1989, Hoem, 1993; Joshi, 2002; Ni Brolcháin, 1993; Kravdal, 1992). While this partly might be a result of self-selection when modeling birth intervals separately (Kravdal, 2001, 2007; Kreyenfeld 2002), it probably also reflect genuine differences between contexts in career-family compatibility (Blossfeld \& Drobnic, 2001). In addition, two recent studies of Swedish women born 1955-59 stress the importance of educational orientation, rather than educational level, for childlessness and ultimate fertility (Hoem, Neyer \& Andersson, 2006a, 2006b).

Women's labor force participation is another factor that often has been associated with low fertility and delayed childbearing. It is hypothesized that the general trend towards later childbearing is most pronounced among the better-educated and most career-oriented women, because they see childbearing as a costly interruption in their careers. With an increase in women's investment in education and labor force participation, added to increasing female wages, the cost of children increases and more individuals are induced to have fewer children. On the other hand, labor force participation and commitment to work renders the individual an income, and in contemporary Europe not only men's income, but also that of women, seems to be positively related to fertility (Engelhardt, Kögel \& Prskawetz, 2004; Stanfors,
2003). The link between female labor force participation, or female wages, and fertility is to a large extent dependent on the degree of compatibility of work and family for women, which differs a great deal between countries (e.g., Bernhardt, 1993; Brewster \& Rindfuss, 2000; Rindfuss \& Brewster, 1996). As work and family becomes more compatible, and motherhood and career not necessarily are at odds with each other, the assumed negative effect of women's employment on fertility disappears. If there are significant differences in compatibility between occupations according to sector of employment, position, type of contract, etc., there will be groups of women experiencing a more problematic situation with respect to childbearing.

Most research has focused on women, their socioeconomic standing and the way this is likely to affect their fertility decisions, while much less attention has been devoted to highly educated and professional men (e.g., Bledsoe, Lerner \& Guyer, 2000; Goldscheider \& Kaufman, 1996; for a discussion and review). Scattered results indicate that the relationship between education, career and income, and fertility is less problematic, and even positive, for men. If analyzed, men are usually seen as exogenous factors - partners with certain characteristics. Some, however, apply another approach and analyze couples (Morgan, 1985; Sorenson, 1989; Thomson, 1983, 1990; Toulemon \& Lapierre-Adamcyk, 2000).

In this paper, we analyze the fertility behavior of power couples in Sweden since 1990. We define power couples as couples in which both partners are academic graduates and have high-powered careers. ${ }^{1}$ In particular we focus on childbearing patterns of high-achieving couples and compare to other couples. By using a career measure that includes not only educational level, but also the field of education and sector of employment, and controlling for couple income and a set of demographic and other variables, we investigate the relationship between career and fertility in a setting in which increasingly more women and men opt for higher education and professional careers. Generally speaking we examine to what extent dual careers are compatible with continued childbearing. More specifically, we ask to what extent power couples, once they have had a child, continue their childbearing and have a second, third or even fourth child? Are dual careers incompatible with family life and thereby inhibiting family size? Does higher couple income imply higher fertility? Finally, do the power relation between the spouses in a couple affect fertility outcomes? The analysis is made using longitudinal data from population registers.

The paper is organized as follows: first we discuss theoretical considerations and previous research followed by a presentation of data, variables and methods before turning to the empirical results and their implications.

## Theoretical background and previous research

## Power couples

Power couples or dual-career households (cf. Costa \& Kahn, 2000; Rapoport \& Rapoport, 1969) make up a small share of the population but are nevertheless becoming an increasingly common phenomenon since more women and men acquire academic degrees and opt for high-powered careers. There are different ways of gaining power, of which expertise or holding influential positions in corporate and public administration, and high income, are perhaps the most evident. In this study we distinguish between different kinds and degrees of power among couples by a measure which captures educational level as well as educational

[^0]orientation, and sector of employment, while controlling for couple income. We focus on couples in which both partners are academic graduates and have high-powered careers. This elite group consists of women and men who have a lot in common compared to the general population, but, who also face certain problems more acutely (i.e. bargaining, co-location, family responsibilities and opportunity costs) than other couples.

Power couples are also discussed in terms of "coupled" or "coordinated" careers (Bernasco, 1994) since this is what distinguish them from the more common dual-earner couples. In the dual-earner couple, both partners hold a job but only one (at the most) has a career. In the dual-career couple, both partners pursue a career that is characterized by high professional standards, continuous progress through a hierarchy, and a high degree of challenge and commitment. The often cited incompatibility and difficulties of combining a true career and a family, make many professional women and men in dual-career households limit their family size or remain childless (Altucher \& William, 2003). Whereas some remain childless by choice, because of the negative impact of parenthood on their careers (Bram, 1985), Hewlett (2002, cf. Chen \& Morgan, 1991) argues that many successful female professionals in the United States find themselves in this situation through a "creeping nonchoice" because they each year, for the sake of work, put off family formation and one day they discover it is too late. This is, however, not a problem for their male colleagues. From a gender perspective, family responsibilities still affect women's careers more than men's careers throughout the Western world.

In addition to the problems which any couple may face, dual-career couples are challenged by another five dilemmas: overload, normative expectations, identity, social network, and role cycling (Rapoport \& Rapoport, 1969). These dilemmas are, to a high degree, accentuated once the couple has one or more children. 'Overload' comes from the fact that couples, in which both partners are highly committed to work and career, may lack domestic back-up and therefore are not only facing a "second shift" problem (Hochschild, 1989) but also emotional stress, not least regarding their children. ${ }^{2}$ Making use of 'social networks' may help a stressful situation, but often dual-career couples have relocated and live away from kin, and a time bind reduces leisure and social activities; interactions that often maintain networks. The dilemma of 'normative expectations' arises from the clash between personal and social norms (Rapoport \& Rapoport, 1969:13), notably at important events in family and professional life. Especially women face the pressure because there are strong social norms regarding motherhood and childcare practices that are not conducive to a professional career or prioritizing work instead of family obligations. A similar pressure may, however, face men in the workplace if they deviate from the established role of male provider and successful professional and put family responsibilities first. This feature is also incorporated in the 'identity' dilemma that "stems from the socio-cultural definitions of work and family as intrinsically masculine and feminine" (Rapoport \& Rapoport, 1969:15). Women and men who depart from the traditional behavior may experience tensions when it comes to maintaining distinct, and perhaps different, identities at work and within the family. The incompatibility between work and family may also be exacerbated depending on what stage of career and family formation the spouses are at. Role conflicts are captured both as 'career-family cycling dilemmas' (i.e. between the spouses' occupational roles and their family roles) and 'dualcareer cycling dilemmas' (i.e. between the spouses' occupational roles). The former is clearly connected to childbearing decisions among dual-career couples since timing is important. Due

[^1]to both practical and economic reasons, childbearing is delayed until both partners have finished their education and are established in their profession. The spacing of children also depends on career steps and whether spouses meet up with work demands and get promotion. The dilemma is more severe when both spouses are highly educated and career oriented. The dilemma of balancing and considering both spouses' occupational roles and careers is most evidently connected to relocation and the situation when the career of one spouse requires a sacrifice of the other but it may also be connected with childbearing and childrearing, if the career advancement of one spouse leaves the other party with considerably more family responsibilities than otherwise planned so that the promotion of one party actually is at the expense of the other party's career.

However, dual-career couples not only face problems and conflict-ridden situations. Usually they also benefit from a higher couple income which enables them to purchase more services and goods than other couples and they probably share common interests, due to assortative mating, and have an understanding for each other's situation. Moreover, the education and career of one spouse may very well have positive spillover effects for the other since this party may benefit from the spouse's skills and experiences, for example when it comes to contacts, promotions, tacit knowledge or implicit rules of conduct in a specific situation, but also when it comes to the transmission of knowledge and expertise (Benham, 1974; Bernardi, 1999). Some studies point to increasing gender equity, especially among dual-career couples, but not even women's professional career seem to provide a sufficient context for an egalitarian household division of labor (Gregson \& Lowe, 1993; Hardill et al., 1997). According to Ott (1995), spouses have both common and conflicting interests and this is also the case for power couples. ${ }^{3}$

## Education, employment and fertility

Much interest has been devoted to the association between education and fertility, especially between that of educational level and fertility. Most studies have dealt with women only and assumed a negative relationship between women's education and fertility. It is hypothesized that the better-educated women, who are also the most career-oriented, will have both later and lower fertility in relation to women with lower education, because they see childbearing as a costly interruption in their careers (see Dribe \& Stanfors, 2008; Gustafsson, 2001; Rindfuss, Morgan \& Offutt, 1996, for reviews). This hypothesis is based on theoretically anticipated relationships between education and fertility as well as the interrelationship of career orientation, labor force participation and fertility (Becker, 1991). Apart from the direct costs associated with a child, there are also indirect costs, of which the most notable are the opportunity costs of mother's time (Mincer, 1962, 1963). Children result in forgone earnings, reduce the rate of return to investments in education, reduce chances of advancement, and depress women's lifetime income. Therefore extensive female labor force participation and childbearing is often supposed to be incompatible because women have the main responsibility for bearing and rearing children. As long as fathers are not expected to give up too much of their working time for child care, male labor force participation will not conflict to the same extent as female labor force participation, and the higher earnings of working men can be expected to have a positive effect on fertility (e.g. Butz \& Ward, 1979). The neoclassical economic model of women's education, employment and fertility predicts that higher education and higher female labor force participation result in higher opportunity costs of childbearing and the greater the opportunity costs, the lower the fertility (Becker 1991;

[^2]Cigno, 1994). Hence, childbearing can be expected to be more deferred, or even deterred, among qualified and work-oriented women.

More recently it has been shown that educational orientation may be a more important determinant of fertility than educational level (Hoem, Neyer \& Andersson, 2006a, 2006b; Lappegård, 2002). If there are systematic differences when it comes to career tracks, work demands and perceived work-life balance between occupations or employment sectors, the investment in different kinds of higher education may be decisive for the individual's range of choices. It could be expected that childbearing is put off the most among women and men who follow career tracks, have demanding jobs and perceive high economic costs of childbearing and difficulties combining career and family. ${ }^{4}$

In Sweden, there is a high educational as well as occupational segregation (Stanfors, 2003, chapter 6). Although women, more than men, have changed their educational and occupational choice over time, many women, irrespective of educational level, choose to get an education and work in typically feminine fields, such as teaching, nursing and personrelated service. Many women also favor the public sector that is often considered more "family-friendly" to work in. And there are, in international comparison, relatively small shares of women holding top positions, irrespective of sector. On the other hand, men are dominating the fields of science, technology and industry. They are crowded in the private sector and overrepresented in top positions.

In line with economic research, this potentially illustrates a response to the economic detrimental effects of children on careers that have received a lot of attention (Joshi, 1998). Skill depreciation is more of a problem in some occupations than in others. Expertise, firmspecific and technological skills tend to depreciate faster than general skills. Human capital loss due to career breaks should therefore more of a problem in the private than in the public sector. Those who have an education and work in an occupation/sector in which skill depreciation is a problem can be expected to have fewer children than those who face less of an atrophy rate. Moreover, the steeper earnings profiles among private sector employees exacerbate the effects on lifetime earnings in relation to the public sector. In order to cope, parents choose occupations that accommodate family responsibilities (Polachek, 1981). Following Nordli Hansen's reasoning, many women have chosen to work in the public sector in order to combine work and family without being severely punished in terms of a much slower wage development (Nordli Hansen, 1997; cf. Hoem, Neyer \& Andersson, 2006a, 2006b). From this perspective we expect couples in which both parties have true careers, and who work in occupations where career breaks have detrimental effects (typically found in the private sector) to have fewer children than others. We also expect that dual-career couples, in which one or both parties have lower atrophy rates and more family friendly work conditions (typically found in the public sector) to deviate less from the childbearing norm of the general population.

The opportunity costs of childbearing may, however, be mitigated through public family policies and workplace policies that compensate employers on parental leave, encourage early

[^3]returns to work, and provides career opportunities also for parents during early childrearing years, all important aspects of compatibility that we will return to.

## Income and fertility

In the early economic models of fertility (Becker, 1991; Willis, 1973), the effect of husband's income on fertility is positive because his time use is assumed to be unaffected by either childbearing or childrearing, while the higher his wage the more children (and other goods) the family can afford. The effect of female wages is, on the contrary, negative because child care competes with time in the labor force (Mincer, 1962, 1963). Empirical studies have also confirmed a positive income effect of male wages, and a negative price effect of female wages, on period fertility, but mainly in contexts characterized by the male breadwinner model (e.g. Butz \& Ward, 1979; see also Stanfors 2003). Studies of more recent times for a number of industrialized countries, however, show a positive correlation between female labor force participation and fertility (e.g. Ahn \& Mira, 2002; Andersson, 2000; Brewster \& Rindfuss, 2000; Engelhardt, Kögel, \& Prskawetz, 2004). These results indicate that not only men's income, but also that of women, is now positively related to fertility in contexts where the dual-earner model has become the norm, and this has also been confirmed by time-series studies using data on male and female wages (e.g. Stanfors, 2003; Tasiran, 1993).

Features like parental leave, child benefits and subsidized child care reduce the negative price effect of women's wages on fertility, and instead boost the income effect. In this setting, it may well be that women's education, employment and earnings have positive effects on continued childbearing and family size. Higher income enables a couple to buy goods and services in order to cope with both career and family (cars, housing, home services, etc.). Moreover, as Ermisch (1989) points out, high earnings enable people to purchase child care of a certain quality, which is of vital importance in the reconciliation of career and family. Once parenthood and employment are not alternatives at odds with each other, but possible to combine, we expect the negative effect of female labor force participation and female wages to be greatly reduced, and even reversed into a positive (income) effect. In Sweden, public child care is of high quality and fees are highly subsidized, especially for high income earners. Coverage is extensive - about 85 percent of all children aged $1-6$ were in public day care in 2005 - and therefore, dual-career couples are able to spend more of their income on other goods and services that may help them combine career and family.

## Career and family compatibility in different contexts

With an increasing number of dual-earner households in most industrialized countries, and a growing share of dual-career couples, the interest in career-family compatibility has grown (e.g. Blossfeld \& Drobnic, 2001; Hewlett, 2002; 2003; Kanter, 1977; Moen, 2003; Spain \& Bianchi, 1996). The literature, however, has largely focused on women. Few studies bring men in, either in their own right or as part of a couple. Having a career and a family is often seen as incompatible, at least for women. They both demand commitment, time and energy, and the demands are usually most articulate during the time when both career advancement and family formation are supposed to take place. For women more than for men, the demands of a high-powered career, the asymmetries of male-female relationships, and the difficulties of conceiving later in life is supposed to undermine the possibility of combining career with family. It seems reasonable that this challenge is accentuated among dual-career couples who need to manage two careers and a family. Although women have increased their education and labor force participation, they have to a large extent retained the responsibilities for child care. For women on a career track, family formation is often associated with taking up a second career as "supermom", and assuming main responsibility of housework. For men, on
the other hand, both careers and time devoted to housework are usually less influenced by their role as fathers. However, during the last decades the effects of parenthood on time allocation in Sweden seem to have started to converge between men and women (Dribe \& Stanfors, 2007).

It seems natural to expect that the degree of career-family compatibility to a large extent depends on the relation between the spouses in the couple. In traditional neoclassical economic models the division of household labor is assumed to be determined by the comparative advantages in market work and housework, and spouses specialize according to these comparative advantages (see, e.g. Becker, 1991). To account for differences in preferences between spouses different kinds of bargaining models have been developed, where the bargaining power of each spouse is assumed to be determined mainly by their relative resources (e.g. Chiappori, 1992; Konrad \& Lommerud, 1995; Manser \& Brown, 1980; McElroy \& Horney,1981). Also in sociological research the division of household labor is often connected to the relative resources of each spouse (Shelton \& John, 1996). Resources of importance are education, income, occupational prestige, etc. which are used to negotiate a favorable division of labor. Empirical studies have also supported that a lower income gap between the spouses favors a more equal division of labor. In most cases the effect seems to be small, however, and also more pronounced for women than for men (Evertsson \& Nermo, 2007; Shelton \& John, 1996). More highly educated men also appear to do more housework, which may seem contradictory. One explanation could be that they have more gender equal values when it comes to household division of labor and women's careers (Oppenheimer, 1988; Presser, 1994). Usually, women also do more housework even when they have the same, or higher, income and education level as their husbands. This has been explained by norms and values concerning proper male and female behavior, and that people are "doing gender" to compensate for atypical spousal relationships, for example when wives have higher education or income than their spouses (Brines 1994; West \& Zimmermann 1987). Thus, we should expect couples where the wife has a comparatively strong position (equal or higher education and income) to have a more equal division of household labor, even though it cannot be expected to be completely equal. All other things equal, we should also expect couples where the husband is highly educated to have a more equal division of labor. In both cases, this should also facilitate the career of women, because of a greater compatibility between market work and family life.

Apart from factors such as education and income, the age difference between spouses is often seen as an important determinant of power relations within couples. Especially in couples where the husband is considerably older than the wife, one assumes that he has a stronger position in couple negotiations. The historical trends towards greater age homogamy in several western countries have also been interpreted as an indication of increasing equality of partnerships (Shorter, 1975; Van Poppel et al., 2001). It thus seems reasonable to expect couples where the woman if of the same age or older than her husband to have a more equal division of housework, because of her relatively strong position in the couple, and there is some empirical confirmation of this for Germany (Beblo, 2001). Other things equal, this could also be expected to improve her possibilities to combine career with family.

Across countries, there is considerable variation in polices and institutions which may affect the possibilities to combine work and family. In many countries policies only deal with the reconciliation of women's double roles, whereas in other countries, like Sweden, institutional arrangements has a broader scope and addresses gender equality issues alongside the workfamily balance for all parents (cf. McDonald, 2000). Institutions differ across countries when
it comes to maternal/parental leave schemes, wages and working conditions of mothers/parents, the provision and pricing of childcare, and whether families or individuals are the subjects of taxation. All components are important, but most likely it is the combined effect of all these factors taken together that determines the degree of compatibility of family and career.

Blossfeld \& Drobnic (2001) also stress the importance of country contexts with respect to the dynamics of couples' careers. Almost every country provides its own specific set of solutions for the issue of combining work and family. They find social democratic welfare states, like Sweden, to be most favorable for dual-earner households because formal work arrangements, such as job retention and legal rights to reduce work hours during childrearing years, are combined with generous leave benefits and subsidized childcare (cf. Esping Andersen, 1990). Sweden is often seen as a forerunner when it comes to family- and work related policies, and Swedish women were among the first to combine work and family on a broader basis (Bernhardt, 1993; Hoem, 1993). On an aggregate level, it seems as if the institutional arrangements in Sweden are more supportive of childbearing (see e.g. Billari \& Kohler, 2004) than are conservative and liberal models with a more traditional approach to family and gender roles. Dual-career couples may, when they face incompatibility between career and family, either concentrate on work and career while excluding, or at least reducing, childbearing, whereas others might resort to a traditional division of labor where the woman takes responsibility of the family but reduces her career ambitions. On the contrary, in a society supporting labor force participation and parenthood for all, there is more room for maneuvering for women and men who want to combine working life and family. Due to its universalistic and general design, all couples potentially benefit from the Swedish welfare state and its opportunities to combine work and family. In reality, however, the actual combination of work and family is a result of choices made at the individual and couple level concerning both career and childbearing (cf. Hakim, 2000).

## Hypotheses

From the discussion so far we may set up three hypotheses concerning the fertility behavior of power couples in the context of a contemporary welfare state such as the Swedish. First, we expect power couples in Sweden to face a comparatively advantageous situation in terms of family-work compatibility, mainly as a consequence of generous parental leave benefits that compensate for income loss, and extensive public provision of child care which reduces opportunity costs of having children following frequent and sustained career breaks. Hence, we do not expect to find lower fertility after the first birth among these dual-career couples than among other couples in the population. Because men in power couples are highly educated, and men with high education generally appear to have more gender equal attitudes towards division of housework, and to women's careers, the compatibility between career and family might even be greater in power couples compared to lower powered couples, which should promote their fertility.

Second, looking at couples in general, we expect to find a positive effect of couple income on second and higher order births, because higher couple income makes it easier to meet the various demands of a larger family in terms of housing and desired consumption levels.

Thirdly, we expect couples where the position of the woman in terms of bargaining power is relatively strong to have a more equal division of household labor, which in turn should promote fertility. This implies that couples where the woman has higher educational power than her husband should have higher fertility. Similarly, we expect women of the same age, or
who are older than their husbands, to have a stronger position in the household, and thus being able to negotiate a better deal in terms of division of housework and child care, which should facilitate a combination of children and work, and thus increase the chances of having another birth.

## Data

The data used comes from the Swedish population registers maintained by Statistics Sweden. From a dataset consisting of all individuals in the birth cohorts 1942-1989 who resided in Sweden at any time from 1961 onwards, we selected heterosexual couples (married or cohabiting without being formally married) who were in their first partnership. We follow these couples from the birth of the first child (the registers only have information on nonmarital cohabitation when the cohabitants have common children) to woman's age 45, the dissolution of the partnership, emigration, or the end of the study period in 2005. The data is derived from the multigenerational register (Flergenerationsregistret) which contains information on biological and adopted children to all index persons in the sampling frame (all individuals in birth cohorts 1942-1989 who resided in Sweden at some point in time after 1960). Due to frequent missing information on adoption dates for adopted children we chose to only include biological children in the analysis. Since we only study couples in their first partnership with children, the number of children previously born is always the same for men and women in the couples.

The Swedish population registers do not have information on all cohabitation. The information on non-marital cohabitation with common children (RTB-families) is only available from 1990 in the registers. Thus to make sure that we follow the entire history of the couple from the birth of the first child onwards, only couples experiencing their first births after 1989 are included in the sample.

For the individuals in these couples we have linked register based information on income, education (level and field), branch of employment, as well as demographic events (deaths, external migration, and changes in civil status). The resulting dataset thus consist of information about a large number of socioeconomic and demographic variables for all first couples with at least one child born after 1989.

## Methods

Most of the register based information is available once a year while the demographic information is available on a monthly basis. Even though, in principle, it is possible to construct a dataset for fertility analysis that is continuous with monthly precision in terms of the events studied and the starting time of partnerships, such an approach creates a large number of tied observations because a majority of birth intervals are between two and three years, and thus most couples share a rather limited number of failure times. For this reason we choose a discrete approach in the multivariate analysis, studying the probability of having a birth during the year conditioned on the values of the covariates at the beginning of the year. Multiple births during a year (e.g. twins or two separate births within the same calendar year) are counted as one delivery, but the number of previous births takes multiple births into account. For example, in the case of a twin birth as second birth only one birth event is created as an end point of the interval from the first to the second birth, and the interval between the second and third birth is not included, since it happened at the same time as the second birth. Thus, the interval 3-4 follows immediately upon the 1-2 interval.

Given the discrete approach we estimate logit models of the transformed probability of having a birth during the year. We analyze each interval (first to second births, second to third, and third to fourth) separately using ordinary logit models. Previous research, however, has indicated that this approach might be misleading in some cases due to the selection of couples with an (unobserved) high family orientation into the high parities (Kravdal, 2001, 2007; Kreyenfeldt, 2002). As a result, at higher parities, increasing proportions of the sample will belong to the group with high family orientation, and to the extent that the degree of family orientation differs between various subgroups (e.g. according to education, income, etc.) this might explain the fertility differentials between these groups. To account for this, we also estimate a logit model for all intervals together where a random effects parameter (normally distributed) at the couple level is included to control for the potentially unobserved heterogeneity stemming from different child orientation. All estimations are done in STATA using the 'logit' and 'xtlogit' commands.

## Variables

To study the connection between power couples and fertility we construct a variable indicating the educational status of the spouses in the couples. It is defined according to both the highest educational level obtained and the field of education. For the group with the high educational power we also add a dimension of potential career-family compatibility as we distinguish between those who are employed in the private sector or government owned corporations, because we expect work conditions and demands in these occupations to be different from occupations in public administration or non-governmental organizations. A private sector career track is assumed to be more competitive and less compatible with family responsibilities than a career in the public sector. We categorize educational status into four different categories depending on the level of education, field of education and sector of employment:

1. High education power, private sector (high/p)

- Post-graduate (PhD, PhLic) all fields
- University education 3 years or more in fields of social sciences, law, business administration, science, mathematics, computer and technology
- Employed in private companies or government owned corporations

2. High education power, other (high/o)

- Post-graduate (PhD, PhLic) all fields
- University education 3 years or more in fields social science, law, business administration, science, mathematics, computer and technology
- Employed outside private companies or government owned corporations (i.e. state or municipality administration, non-governmental organizations, other occupation)

3. Medium education power (middle)

- University education 3 years or more in fields of teaching, humanities and arts, farming and forestry, health and social work, and services.
- Post-high school education less than 3 years (universities, community colleges, nursing schools etc), all fields
- High-school education 3 years, all fields

4. Low education power (low)

- High-school education 2 years or less, all fields
- Basic education 9 years or less, all fields

The educational status of each spouse is combined into a hierarchical variable for the couple, ranging from highest educational power to the lowest. Higher power is always when both spouses have similar status, which means, for example, that a couple, in which both spouses are in the middle group are considered to have higher educational power than a couple where one of the spouses have high, and the other low. Men's status is also given preference so that couples where the man is high and the woman middle is considered more high-powered than a couple where the man in middle and the women high. This ordering is partly based on the fact that men generally outearn women and also tend to work longer hours, which render them higher income; partly on the fact that in most couples, the man is a couple of years older than the woman (see Table 1), which in most cases gives him an edge when it comes to position in the labor market and earnings. The resulting order is thus:

1. m high $/ \mathrm{p}-\mathrm{w}$ high $/ \mathrm{p}$
2. m high $/ \mathrm{p}-\mathrm{w}$ high/o
3. m high/o - whigh/p
4. m high/o - whigh/o
5. m high/p - w middle
6. m middle $-\mathrm{whigh} / \mathrm{p}$
7. m high/o - w middle
8. m middle -w high/o
9. m middle - w middle
10. m high/p - w low
11. m low - w high/p
12. m high/ $\mathrm{o}-\mathrm{w}$ low
13. m low - w high/o
14. m middle -w low
15. m low -w middle
16. m low -w low
17. NA

The distribution of the sample in these categories is displayed in Table 1. The couples categorized as power couples, i.e. where both spouses belong to the 'high' categories, make up 3.7 percent of the entire sample. In addition 9.4 percent of the couples have one spouse in the high category and one in the middle.

- Table 1 here

Couple income is included to capture potential income effects on fertility. Total income include wages for employees and self-employed as well as benefits paid in connection to work, i.e. parental leave, pensions, unemployment benefits, and payment from sickness insurance. Because parental leave might lower the income due to limits in the benefit policies (statutory $80 \%$ of the salary up to a ceiling, but in many cases complemented by additional benefits by contract, sponsored by the employer), we use accumulated income over the threeyear period preceding the observation year as the indication of couple income. To enable comparisons over time, and thus eliminate the impact of inflation, we relate the annual income to the so called price base amount (hereafter simply called base amount) of the year. The base amount is set for each calendar year on the basis of changes in the Consumer Price Index (KPI). Its main purpose is to adjust different kinds of public benefits (pensions, student aid, sickness insurance, etc.) to account for inflation. In 2005, the base amount was 39,400

SEK and for the total population 20-64 the median income was about 220,000 SEK, which corresponds to about 5.5 base amounts. The $25^{\text {th }}$ percentile corresponded to about 3.5 base amounts and the $75^{\text {th }}$ percentile to about 7.5 base amounts. In the analysis we use the following categorization of accumulated earnings of the couple over the three year period preceding the year of observation:

Accumulated couple income Corresponding individual annual
over 3 years (base amounts) income (base amounts)

1. -11.9
-1.9
2. 12.0-23.9 2.0-3.9
3. $24.0-29.9 \quad 4.0-4.9$
4. $30.0-35.9 \quad 5.0-5.9$
5. $36.0-41.9 \quad 6.0-6.9$
6. $42.0-47.9 \quad$ 7.0-7.9
7. $48.0-8.0-$

Age difference between spouses serves to indicate power relation between the partners in a couple. It is categorized into five categories: same age, husband older by 3 years or more, husband older by 1-2 years, wife older by 1-2 years, and wife 3 years or more older than her husband.

In addition to these main variables, we also control for a number of covariates with a possible impact on fertility (see Table 1). We include a set of controls of standard demographic characteristics: civil status, woman's age, woman's age squared, time since last birth, number of previous births and cohort. In addition, we also control for the area of residence, proxied by the county of birth of the previous child, to capture at least bigger differences in fertility between geographical areas (cf. Costa \& Kahn, 2000; Compton \& Pollak, 2004). We also include a variable measuring the country of birth of the spouses, distinguishing four countrygroups: Sweden, the Nordic countries (Denmark, Norway, Finland, Iceland), European countries other than the Nordic and North America (USA, Canada), and the rest of the world.

In the analysis we limit the sample by excluding the couples for whom we lack information on educational status ( $2.3 \%$ of the sample), and we also truncate the sample at eight years since previous birth, as mentioned previously. This reduces the number of observations (person years) from $3,744,971$ to $3,400,920$, and leaves us with 426,950 births to analyze.

Table 2 provides some descriptive measures relating to the births in the sample used in the analysis. Clearly a large majority of the births we are studying are second births (about 81\%), which is not surprising since the two-child norm is established and strong in Sweden. Higher order births are much less common, especially fourth births that only make up 2 percent of the births analyzed. Mean age of women at child birth is 30.0 for second births, 32.0 for third births, and 32.8 for fourth births. Women in high-power couples are older when giving birth at all parities than women in other couple contexts, which reflect the late motherhood of the well-educated. The youngest mothers are found among couples in the lowest power segment, i.e. those with very low education. The gap between the oldest and the youngest mothers, on the basis of couple context, is increasing somewhat over birth orders. It is interesting to note that among couples in which the spouses have different degrees of educational power, the mean age of mother, irrespective of parity, increases in cases where the woman have higher educational power than the man. The mean birth intervals are between approximately 2.8 and
3.2 years. The fact that the mean birth interval declines for fourth births is explained by selection of high fertility couples into this category. Overall, there are no major differences in birth intervals between couples with different educational power. It should especially be noted that power couples in general do not have shorter birth intervals than other couples. Thus, they do not seem to reduce their birth interval despite being older at reaching each parity.

- Table 2 here


## Results

Tables 3-6 display the full set of estimates for all intervals pooled and for the second, third and fourth births separately. In the random effects estimations in Table 3 the parameter $\rho$ measures the proportion of the variation explained by the random effects variation, and we also report a likelihood ratio test of the null hypothesis that $\rho$ is zero. Clearly the impact of the random effects variance is statistically significant, but in terms of magnitude it only accounts for about 9 percent of total variance. This shows that although potentially important, the unobserved component of higher order fertility is not overwhelmingly important in practice.

- Tables 3-6 here

Figure 1 shows the estimates for educational status in Tables 3-6. In general, it seems clear that the higher the educational power the higher the chances of having a birth. This is more or less true in all intervals, and also when estimating all intervals together. For third births it is very clear that couples in the high-power groups (i.e. where both spouses are either high/p or high/o) have considerably higher fertility after the first birth than couples with lower educational status (odds ratios ranging from 1.41 to 1.54 ). It looks quite similar for fourth births, even though the highest group, where both spouses are employed in the private sector, have a lower likelihood of childbirth (although not statistically significant).

- Figure 1 here

Looking at the regression of all intervals pooled, high-power couples have higher odds ratios of having a birth, irrespective of the sector of employment. This reflects that higher education and career is widely perceived as compatible with family in Sweden. The private sector is generally seen as less "family-friendly" than the public sector, but here, whether in the private sector, or not, seems quite unimportant for fertility. It is true that the public sector was the forerunner when it comes to work arrangements and conditions that helped the combination of work and parenthood and reduced the economic effects of career breaks. Much of the compatibility-enhancing work arrangements are, however, granted by law (e.g. parental leave and minimum parental leave benefits, the right to work reduced hours, temporary absence in order to care for sick child, job retention). In the 1990s it also became more common for private sector companies to launch different programs for their professional employees aiming to increase the compatibility of parenthood and career. Vital components of such programs were granting, by contract, more flexible work schedules and opportunities to work from home, offering additional income compensation to parents on leave and guaranteeing them job continuation and continuous on-the-job training. Thereby differences in compatibility between sectors of employment were reduced. Although, the compatibility of career and family, in general, is high in Sweden this does not change the demands that a successful highpowered career imply for the individual. If we look at third and fourth births, the high-power couples where the woman or both spouses work outside the private sector do seem to have
somewhat higher likelihood of having a birth than other high-powered couples, a fact that may reflect both higher compatibility and somewhat less demanding career-tracks in public sector employment than in the private sector.

The higher continued childbearing among power couples can probably also be explained by more egalitarian attitudes and practices towards household division of labor and specialization in these couples. In dual-career households, in which both spouses have a high level of career involvement, both partners have access to economic resources and therefore negotiations and are more likely to take place. Moreover, competing preferences and stress can be mediated due to a higher degree of understanding for each others' workload between the spouses. When it comes to childrearing, couples with higher educational status and skills share more of the total parental leave benefits than those with lower educational status and skills (Edlund et al., 2000; Näsman, 1992; cf. Sundström \& Duvander, 2002) and they make more use of public childcare. Taken together, a more egalitarian relation between the spouses can also be fertility enhancing through a more harmonious family life.

Turning to the fertility pattern by couple income, controlling for educational power and all other variables in the model, Figure 2 shows the estimates from Tables 3-6. For second births there is a clear income effect in that couples with higher incomes also have higher chances of having a second birth, and the same is true for all intervals together. For third births and fourth births the patterns are entirely different. Here we see a negative, or weakly U-shaped, relationship between income and fertility. Top income couples have higher chances of having a third birth than middle income couples, but the couples with lowest income show the highest odds ratios of childbirth in this interval. Low income couples also are most likely to experience a fourth birth. As evident from the means reported in Tables 3-6, the two lowest income groups are quite small, but this does not change the pattern. Although, the income effect can be overtaken by the cost of children of higher quality that parents with more resources opt for it is quite unexpected to find the most marginalized groups to have the highest fertility at high parities. It is not a simple compositional effect attributed to a failure to fully control for high fertility of low-income immigrants in the sample, as shown by similar findings in a study where country of birth is controlled for in much more detail (Andersson \& Scott, 2007). Moreover, there is no indication that the effects are stronger for couples where the woman, rather than the man, has low income (results not shown), which makes it less likely that the negative effect of income on higher order birth is a results of reverse causation where high fertility women withdraw from the labor market and thereby earn lower income.

- Figure 2 here

Figure 3 displays the odds ratios by age difference between the spouses. Couples where the woman is older than the husband have consistently higher fertility after first birth compared to age homogamous couples and couples where the husbands are older than the wives. It should be remembered that we are controlling for the woman's age (and age squared) when estimating these effects, which implies that the result is not explained by the fact that women married to younger men might be older than other women and therefore have shorter birth intervals because they approach the end of their childbearing period. Relatively few women in our sample marry or cohabit with younger men ( 17 percent). The effect of age difference that we observe probably reflects the relative power distribution within the couple and the stronger bargaining position of the woman in couples in which she is not only older, but also may have an edge or a more equal standing career-wise in relation to her partner. Due to more resources and a relatively strong bargaining position, the woman, if she wants another child, may have it
and may also find a way to combine work and family through negotiation as she is also more likely to achieve a more equal division of household labor and childcare.

- Figure 3 here

Looking briefly at some of the control variables, it is noteworthy that we find the highest fertility at low parities (second births) in southern Sweden outside the big city counties, while northern Sweden have highest fertility at the higher parities (third and fourth births). This pattern is in line with long-standing regional fertility differences in Sweden. The big city counties have among the lowest fertility in all intervals except $3-4$, which is also in accordance with previous findings (Kulu, Vikat \& Andersson, 2007). Although big city counties have the most dynamic labor markets, especially for the well-educated, they are crowded and housing is often expensive. Moreover, many people move to these counties in order to work or study and the move brings them away from kin and social networks. Difficulties in finding adequate housing for a bigger family and assistance to take of children after regular day care hours may be factors inhibiting continued childbearing. Couples where both spouses are born in Sweden have the highest fertility when looking at all intervals combined. The two-child norm among Swedish couples is evident from Table 4. However, when looking at higher order births, we see that immigrant status becomes more important as couples where both spouses come from outside Europe and North America have higher likelihoods of having a birth. For fourth births all couples, except endogamous European/North American couples, have higher fertility than endogamous Swedish couples. In line with the findings of many previous studies, formally married couples have higher fertility than cohabiting couples, and this is valid for all birth intervals. Married couples are generally seen as more child oriented than those in informal unions. This has to do with selection because even if non-marital cohabitation is widespread in Sweden, lifelong cohabitation is not common since many cohabiting couples decide to formalize their union and marry once they have started a family (Bernhardt, 2002; Bracher \& Santow, 1998). ${ }^{5}$

## Conclusion

In research dealing, in one way or the other, with the interaction between work and family in contemporary societies there is a strong view that family life is highly incompatible with having career ambitions, at least for women. Most of the research has also been studying women only and often found corroborating evidence for the rather negative connections between professional life and family life, although there are different views in the literature as well.

In this paper, we have sought to deepen the understanding of the conditions of working life and its connections to family and childbearing by focusing our attention on a rather small group of couples where both the man and the woman have the highest educational levels in fields most likely characterized by pronounced career paths. We call them power couples and we have studied the extent to which their fertility patterns after the first child differ in any way from other couples.

We hypothesized that power couples in Sweden of today face a comparatively favorable situation in terms of family-work compatibility which enables them to combine careers with continued childbearing. Thus, we did not expect to find lower fertility after first birth among

[^4]these couples than among other less career oriented couples. The results also gave strong support to this hypothesis: power couples have considerably higher fertility after the first birth than other couples. In fact we observed a more or less linear positive relationship between educational power and fertility in all intervals, where the couples with the lowest educational status also have the lowest likelihood of having another birth, while those with the highest status have the higher birth chances. This serves to indicate the high degree of family-career compatibility in Sweden. The fact that power couples not only have as high fertility as other couples, but even higher, could be related to a more equal division of housework in these households due to different attitudes among highly educated men, or to a better understanding of each other's situation in couples where both partners know the challenges posed by career positions. Regardless of the explanation, it seems safe to conclude that highly educated couples in Sweden do not feel forced to abstain from continued family building after having one child. However, this does not necessarily imply that the combination of children and career is without problems. There are frequent reports, both in research and the public debate, of parents to small children being stressed and pressured by multiple demands from home and work place.

Our second hypothesis concerned the impact of couple income on second and higher order births. Here we expected to find a positive income effect controlling for educational status because of the dominance of the dual-earner households in contemporary Sweden. The results, however, only partly supported this hypothesis. For second births there was a clear positive relationship between accumulated couple income over the last three years and the chance of having a birth. For third and fourth births, however, the relationship was negative or weakly U-shaped. Without being able to offer a solid explanation for this finding, we are quite sure that it is not a result of simple compositional effects related to immigrants nor of reverse causation following high fertility and family oriented women's and men's withdrawal from the labor market.

We also expected the power relations within the couple to be important for division of housework, and in turn also for continued childbearing. Also in this case the hypothesis was only partly supported by the empirical analysis. We found no indication whatsoever that couples in which the woman have higher educational status than her partner have different fertility patterns than similar couples with equal status, or where husband status is higher. On the contrary, as already discussed in relation to the first hypothesis, it is couples where both partners have higher status that have higher chances of another birth. The effects of age difference between spouses supported the hypothesis of a stronger position of the woman being associated with higher fertility. Couples in which women are older than their partners are considerably more likely to have another birth in all intervals than other couples, and the effects are also getting progressively stronger at higher parities.

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Table 1. Descriptive statistics of the sample.

| Education status | \% | Time since last birth | \% |
| :---: | :---: | :---: | :---: |
| m high/p-w high/p | 1.9 | 2.0-2.9 | 14.9 |
| m high/p - w high/o | 0.9 | 0.0-0.9 | 25.4 |
| m high/o-w high/p | 0.3 | 1.0-1.9 | 21.6 |
| m high/o-w high/o | 0.6 | 3.0-3.9 | 10.2 |
| m high/p-w middle | 4.9 | 4.0-4.9 | 7.5 |
| m middle - w high/p | 1.5 | 5.0-5.9 | 5.7 |
| m high/o - w middle | 1.8 | 6.0-6.9 | 4.4 |
| m middle - w high/o | 1.2 | 7.0-7.9 | 3.4 |
| m middle - w middle | 23.4 | 8.0- | 6.9 |
| m high/p-w low | 0.9 | Total | 100.0 |
| m low - w high/p | 0.5 | Previous births | \% |
| m high/o-w low | 0.3 | 1 | 44.6 |
| m low - w high/o | 0.4 | 2 | 45.9 |
| m middle - w low | 10.6 | 3 | 8.5 |
| m low - w middle | 20.4 | 4+ | 1.1 |
| m low - w low | 28.0 | Total | 100.0 |
| NA | 2.3 | Area | \% |
| Total | 100.0 | Southern Sweden | 21.1 |
| Accumulated couple inc. | \% | Middle Sweden | 13.9 |
| -11.9 | 5.72 | Northern Sweden | 9.4 |
| 12.0-23.9 | 9.33 | Big city counties | 55.4 |
| 24.0-29.9 | 13.91 | NA | 0.2 |
| 30.0-35.9 | 25.46 | Total | 100.0 |
| 36.0-41.9 | 20.76 | Country of birth | \% |
| 42.0-47.9 | 10.69 | Swe - Swe | 79.5 |
| 48.0- | 14.14 | Swe - Nordic | 3.4 |
| Total | 100.0 | Swe-Eur/N.Am. | 3.3 |
| Civil status | \% | Swe - Rest | 3.0 |
| Cohabiting | 39.3 | Nordic - Nordic | 0.5 |
| Married | 60.7 | Nordic - Eur/N.Am. | 0.1 |
| Total | 100.0 | Nordic - Rest | 0.2 |
| Age difference | \% | Eur/N.Am. - Eur/N.Am. | 2.9 |
| Same age | 12.4 | Eur/N.Am. - Rest | 0.4 |
| m 3+ older | 44.0 | Rest-Rest | 6.7 |
| m 1-2 older | 26.7 | Total | 100.0 |
| w 1-2 older | 10.6 | Cohort (woman) | \% |
| w 3+ older | 6.3 | 1946-1954 | 0.6 |
| Total | 100.0 | 1955-1959 | 5.7 |
|  |  | 1960-1964 | 23.0 |
|  |  | 1965-1969 | 38.2 |
|  |  | 1970-1974 | 24.4 |
|  |  | 1975-1979 | 6.9 |
|  |  | 1980-1988 | 1.2 |
| Births | 444,704 | Total | 100.0 |
| Observations | 3,744,971 | Woman's age (mean) | 31.6 |

Source: Statistics Sweden, see text.

Table 2. Descriptive statistics, births by educational status.
A. Age of woman at birth


| B. Birth intervals | 2nd births | 3rd births |  | 4th births |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Mean | St.dev. | Mean | St.dev. | Mean | St.dev. |
| Educational status |  |  |  |  |  |  |
| m high/p - w high/p | 2.61 | 0.0116 | 3.57 | 0.0395 | 3.50 | 0.1631 |
| m high/p - w high/o | 2.70 | 0.0193 | 3.43 | 0.0566 | 3.12 | 0.1710 |
| m high/o - w high/p | 2.75 | 0.0312 | 3.40 | 0.1011 | 3.67 | 0.3588 |
| m high/o - w high/o | 2.78 | 0.0249 | 3.42 | 0.0714 | 3.28 | 0.2205 |
| m high/p - w middle | 2.66 | 0.0084 | 3.56 | 0.0256 | 3.10 | 0.0778 |
| m middle - w high/p | 2.71 | 0.0147 | 3.64 | 0.0571 | 3.11 | 0.1663 |
| $m$ high/o - w middle | 2.73 | 0.0155 | 3.43 | 0.0435 | 3.10 | 0.1051 |
| m middle - w high/o | 2.76 | 0.0191 | 3.36 | 0.0556 | 3.04 | 0.1358 |
| m middle - w middle | 2.72 | 0.0041 | 3.49 | 0.0132 | 3.25 | 0.0396 |
| m high/p-w low | 2.75 | 0.0242 | 3.38 | 0.0662 | 3.33 | 0.1955 |
| m low - w high/p | 2.85 | 0.0285 | 3.87 | 0.1142 | 2.64 | 0.2453 |
| m high/o-w low | 2.69 | 0.0395 | 3.21 | 0.1099 | 2.88 | 0.2191 |
| m low - w high/o | 2.89 | 0.0354 | 3.46 | 0.1096 | 3.12 | 0.3268 |
| m middle - w low | 2.76 | 0.0069 | 3.44 | 0.0208 | 3.07 | 0.0491 |
| m low - w middle | 2.81 | 0.0048 | 3.60 | 0.0156 | 3.16 | 0.0429 |
| m low - w low | 2.79 | 0.0044 | 3.48 | 0.0130 | 3.17 | 0.0292 |
| Total | 2.76 | 0.0021 | 3.51 | 0.0067 | 3.17 | 0.0176 |
| Births | 346,368 |  | 69,132 |  | 9,299 |  |

Note: Birth histories have been truncated at 8 years since last birth.
Source: Statistics Sweden, see text.

Table 3. Random effects logit estimates of having a birth 1991-2005. All intervals.

|  | Mean | Coef. | Std. Err. | Odds ratio | $P>\|z\|$ | [95\% Conf. | Interval] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Education status |  |  |  |  |  |  |  |
| m high/p - w high/p | 0.020 | 0.2628 | 0.0149 | 1.30 | 0.000 | 0.2336 | 0.2920 |
| m high/p - w high/o | 0.009 | 0.1944 | 0.0207 | 1.21 | 0.000 | 0.1539 | 0.2350 |
| m high/o - w high/p | 0.003 | 0.2119 | 0.0334 | 1.24 | 0.000 | 0.1465 | 0.2773 |
| m high/o - w high/o | 0.007 | 0.1417 | 0.0246 | 1.15 | 0.000 | 0.0935 | 0.1898 |
| m high/p - w middle | 0.051 | 0.1998 | 0.0099 | 1.22 | 0.000 | 0.1805 | 0.2192 |
| m middle - w high/p | 0.015 | 0.1117 | 0.0164 | 1.12 | 0.000 | 0.0795 | 0.1439 |
| m high/o - w middle | 0.018 | 0.1470 | 0.0152 | 1.16 | 0.000 | 0.1171 | 0.1769 |
| m middle - w high/o | 0.013 | 0.0694 | 0.0182 | 1.07 | 0.000 | 0.0337 | 0.1050 |
| m middle - w middle | 0.241 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m high/p-w low | 0.009 | 0.0164 | 0.0223 | 1.02 | 0.462 | -0.0273 | 0.0602 |
| m low - w high/p | 0.005 | -0.0426 | 0.0287 | 0.96 | 0.139 | -0.0989 | 0.0138 |
| m high/o-w low | 0.003 | -0.0262 | 0.0350 | 0.97 | 0.455 | -0.0948 | 0.0424 |
| m low - w high/o | 0.004 | -0.0422 | 0.0307 | 0.96 | 0.169 | -0.1025 | 0.0180 |
| m middle - w low | 0.109 | -0.1501 | 0.0075 | 0.86 | 0.000 | -0.1648 | -0.1353 |
| m low - w middle | 0.206 | -0.1166 | 0.0062 | 0.89 | 0.000 | -0.1287 | -0.1045 |
| m low - w low | 0.286 | -0.2062 | 0.0060 | 0.81 | 0.000 | -0.2180 | -0.1944 |
| Accumulated couple income |  |  |  |  |  |  |  |
| -11.9 | 0.046 | -0.2954 | 0.0114 | 0.74 | 0.000 | -0.3177 | -0.2730 |
| 12.0-23.9 | 0.094 | -0.1690 | 0.0076 | 0.84 | 0.000 | -0.1839 | -0.1541 |
| 24.0-29.9 | 0.146 | -0.0456 | 0.0060 | 0.96 | 0.000 | -0.0575 | -0.0338 |
| 30.0-35.9 | 0.264 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 36.0-41.9 | 0.209 | 0.0072 | 0.0057 | 1.01 | 0.203 | -0.0039 | 0.0184 |
| 42.0-47.9 | 0.105 | 0.0657 | 0.0075 | 1.07 | 0.000 | 0.0510 | 0.0805 |
| 48.0- | 0.136 | 0.1965 | 0.0080 | 1.22 | 0.000 | 0.1809 | 0.2121 |
| Woman's age | 31.21 | 0.3566 | 0.0053 | 1.43 | 0.000 | 0.3463 | 0.3669 |
| Woman's age sq. | 999.31 | -0.0074 | 0.0001 | 0.99 | 0.000 | -0.0076 | -0.0072 |
| Age difference |  |  |  |  |  |  |  |
| Same age | 0.126 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m 3+ older | 0.435 | -0.0904 | 0.0066 | 0.91 | 0.000 | -0.1033 | -0.0774 |
| m 1-2 older | 0.269 | -0.0254 | 0.0070 | 0.97 | 0.000 | -0.0391 | -0.0117 |
| w 1-2 older | 0.107 | 0.0812 | 0.0085 | 1.08 | 0.000 | 0.0644 | 0.0979 |
| w 3+ older | 0.064 | 0.2439 | 0.0104 | 1.28 | 0.000 | 0.2236 | 0.2642 |
| Time since last birth |  |  |  |  |  |  |  |
| 2.0-2.9 | 0.161 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 0.0-0.9 | 0.268 | -2.3168 | 0.0085 | 0.10 | 0.000 | -2.3335 | -2.3002 |
| 1.0-1.9 | 0.232 | -0.3041 | 0.0055 | 0.74 | 0.000 | -0.3148 | -0.2934 |
| 3.0-3.9 | 0.111 | -0.0734 | 0.0066 | 0.93 | 0.000 | -0.0863 | -0.0605 |
| 4.0-4.9 | 0.081 | -0.3000 | 0.0086 | 0.74 | 0.000 | -0.3168 | -0.2833 |
| 5.0-5.9 | 0.062 | -0.4700 | 0.0108 | 0.63 | 0.000 | -0.4912 | -0.4488 |
| 6.0-6.9 | 0.048 | -0.7354 | 0.0140 | 0.48 | 0.000 | -0.7629 | -0.7080 |
| 7.0-7.9 | 0.037 | -0.9814 | 0.0182 | 0.37 | 0.000 | -1.0171 | -0.9458 |

## Previous births

| 1 | 0.452 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| 2 | 0.450 | -2.1646 | 0.0084 | 0.11 | 0.000 | -2.1811 | -2.1481 |
| 3 | 0.087 | -2.6588 | 0.0170 | 0.07 | 0.000 | -2.6920 | -2.6255 |
| $4+$ | 0.011 | -2.1617 | 0.0306 | 0.12 | 0.000 | -2.2218 | -2.1017 |
| Area |  |  |  |  |  |  |  |
| Southern Sweden | 0.212 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| Middle Sweden | 0.139 | -0.1010 | 0.0071 | 0.90 | 0.000 | -0.1149 | -0.0870 |
| Northern Sweden | 0.095 | -0.0142 | 0.0080 | 0.99 | 0.075 | -0.0299 | 0.0014 |
| Big city counties | 0.553 | -0.0479 | 0.0053 | 0.95 | 0.000 | -0.0584 | -0.0375 |
| NA | 0.001 | -0.286 | 0.0480 | 0.75 | 0.000 | -0.3776 | -0.1896 |

Country of birth

| Swe - Swe | 0.811 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Swe - Nordic | 0.033 | -0.0674 | 0.0117 | 0.93 | 0.000 | -0.0902 | -0.0445 |
| Swe - Eur/N.Am. | 0.032 | -0.2322 | 0.0119 | 0.79 | 0.000 | -0.2555 | -0.2089 |
| Swe - Rest | 0.030 | -0.2930 | 0.0122 | 0.75 | 0.000 | -0.3168 | -0.2692 |
| Nordic - Nordic | 0.005 | -0.4436 | 0.0319 | 0.64 | 0.000 | -0.5062 | -0.3810 |
| Nordic - Eur/N.Am. | 0.001 | -0.3885 | 0.0631 | 0.68 | 0.000 | -0.5122 | -0.2647 |
| Nordic - Rest | 0.002 | -0.2989 | 0.0527 | 0.74 | 0.000 | -0.4022 | -0.1957 |
| Eur/N.Am. - Eur/N.Am. | 0.026 | -1.0863 | 0.0157 | 0.34 | 0.000 | -1.1171 | -1.0555 |
| Eur/N.Am. - Rest | 0.004 | -0.5986 | 0.0354 | 0.55 | 0.000 | -0.6681 | -0.5292 |
| Rest -Rest | 0.057 | -0.0276 | 0.0101 | 0.97 | 0.006 | -0.0475 | -0.0077 |
| Cohort (woman) |  |  |  |  |  |  |  |
| 1946-1954 | 0.007 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 1955-1959 | 0.055 | 0.1606 | 0.0343 | 1.17 | 0.000 | 0.0935 | 0.2278 |
| 1960-1964 | 0.217 | 0.1278 | 0.0339 | 1.14 | 0.000 | 0.0613 | 0.1943 |
| 1965-1969 | 0.382 | 0.0611 | 0.0344 | 1.06 | 0.075 | -0.0062 | 0.1285 |
| 1970-1974 | 0.256 | 0.0150 | 0.0347 | 1.02 | 0.666 | -0.0530 | 0.0830 |
| 1975-1979 | 0.072 | -0.0853 | 0.0354 | 0.92 | 0.016 | -0.1546 | -0.0160 |
| 1980-1988 | 0.012 | -0.1711 | 0.0386 | 0.84 | 0.000 | -0.2468 | -0.0954 |
| Civil status |  |  |  |  |  |  |  |
| Cohabiting | 0.407 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| Married | 0.593 | 0.3159 | 0.0045 | 1.37 | 0.000 | 0.3071 | 0.3248 |
| Constant |  | -4.4014 | 0.0824 |  | 0.000 | -4.5630 | -4.2398 |
| $\ln \left(\sigma^{2}\right)$ |  | -1.0813 | 0.0268 |  |  | -1.1337 | -1.0288 |
| $\sigma$ (random effects) |  | 0.5824 | 0.0078 |  |  | 0.5673 | 0.5978 |
| $\rho$ |  | 0.0935 | 0.0023 |  |  | 0.0891 | 0.0980 |
| LR test of rho $=0$ : |  |  |  |  |  |  |  |
| chibar2(01) |  | 1693 |  |  |  |  |  |
| Prob >= chibar2 |  | 0 |  |  |  |  |  |


| Births | 426,950 |
| :--- | ---: |
| Number of obs | $3,400,920$ |
| Log likelihood | -1034356.1 |
| Wald chi2(58) | 221189 |
| Prob > chi2 | 0.0000 |

Note: Birth histories have been truncated at 8 years since last birth.
Source: Statistics Sweden, see text.

Table 4. Logit estimates of second births, 1991-2005.

|  | Mean | Coef. | Std. Err. | Odds ratio | $P>\|z\|$ | [95\% Conf. | Interval] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Education status |  |  |  |  |  |  |  |
| m high/p - w high/p | 0.019 | 0.2129 | 0.0154 | 1.24 | 0.000 | 0.1827 | 0.2432 |
| m high/p - w high/o | 0.009 | 0.1122 | 0.0217 | 1.12 | 0.000 | 0.0696 | 0.1548 |
| m high/o-w high/p | 0.003 | 0.1497 | 0.0346 | 1.16 | 0.000 | 0.0818 | 0.2175 |
| m high/o-w high/o | 0.007 | 0.0625 | 0.0252 | 1.06 | 0.013 | 0.0131 | 0.1119 |
| m high/p - w middle | 0.047 | 0.1655 | 0.0103 | 1.18 | 0.000 | 0.1454 | 0.1856 |
| m middle - w high/p | 0.016 | 0.1060 | 0.0166 | 1.11 | 0.000 | 0.0734 | 0.1385 |
| m high/o - w middle | 0.019 | 0.0955 | 0.0159 | 1.10 | 0.000 | 0.0643 | 0.1267 |
| m middle - w high/o | 0.014 | 0.0133 | 0.0186 | 1.01 | 0.476 | -0.0232 | 0.0499 |
| m middle - w middle | 0.247 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m high/p-w low | 0.008 | 0.0031 | 0.0233 | 1.00 | 0.893 | -0.0426 | 0.0488 |
| m low - w high/p | 0.005 | -0.0299 | 0.0287 | 0.97 | 0.297 | -0.0861 | 0.0263 |
| m high/o-w low | 0.004 | -0.0698 | 0.0370 | 0.93 | 0.059 | -0.1423 | 0.0027 |
| m low - w high/o | 0.005 | -0.0586 | 0.0312 | 0.94 | 0.060 | -0.1198 | 0.0026 |
| m middle-w low | 0.112 | -0.1467 | 0.0077 | 0.86 | 0.000 | -0.1617 | -0.1317 |
| m low - w middle | 0.202 | -0.0902 | 0.0063 | 0.91 | 0.000 | -0.1025 | -0.0780 |
| m low - w low | 0.282 | -0.2126 | 0.0062 | 0.81 | 0.000 | -0.2246 | -0.2005 |
| Accumulated couple income |  |  |  |  |  |  |  |
| -11.9 | 0.073 | -0.3148 | 0.0118 | 0.73 | 0.000 | -0.3378 | -0.2917 |
| 12.0-23.9 | 0.123 | -0.2409 | 0.0079 | 0.79 | 0.000 | -0.2563 | -0.2255 |
| 24.0-29.9 | 0.176 | -0.0756 | 0.0064 | 0.93 | 0.000 | -0.0881 | -0.0631 |
| 30.0-35.9 | 0.267 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 36.0-41.9 | 0.178 | 0.0287 | 0.0062 | 1.03 | 0.000 | 0.0165 | 0.0409 |
| 42.0-47.9 | 0.083 | 0.0920 | 0.0083 | 1.10 | 0.000 | 0.0758 | 0.1082 |
| 48.0- | 0.099 | 0.2018 | 0.0087 | 1.22 | 0.000 | 0.1849 | 0.2188 |
| Woman's age | 29.51 | 0.2909 | 0.0055 | 1.34 | 0.000 | 0.2802 | 0.3017 |
| Woman's age sq. | 897.15 | -0.0062 | 0.0001 | 0.99 | 0.000 | -0.0063 | -0.0060 |
| Age difference |  |  |  |  |  |  |  |
| Same age | 0.123 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m 3+ older | 0.440 | -0.0931 | 0.0067 | 0.91 | 0.000 | -0.1062 | -0.0800 |
| m 1-2 older | 0.259 | -0.0161 | 0.0070 | 0.98 | 0.022 | -0.0299 | -0.0023 |
| w 1-2 older | 0.108 | 0.0525 | 0.0086 | 1.05 | 0.000 | 0.0357 | 0.0694 |
| w 3+ older | 0.071 | 0.1787 | 0.0103 | 1.20 | 0.000 | 0.1585 | 0.1989 |
| Time since last birth |  |  |  |  |  |  |  |
| 2.0-2.9 | 0.166 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 0.0-0.9 | 0.329 | -2.2436 | 0.0072 | 0.11 | 0.000 | -2.2576 | -2.2295 |
| 1.0-1.9 | 0.281 | -0.2745 | 0.0054 | 0.76 | 0.000 | -0.2850 | -0.2640 |
| 3.0-3.9 | 0.090 | -0.1606 | 0.0073 | 0.85 | 0.000 | -0.1749 | -0.1462 |
| 4.0-4.9 | 0.053 | -0.5329 | 0.0098 | 0.59 | 0.000 | -0.5521 | -0.5136 |
| 5.0-5.9 | 0.036 | -0.8697 | 0.0132 | 0.42 | 0.000 | -0.8956 | -0.8437 |
| 6.0-6.9 | 0.026 | -1.2361 | 0.0182 | 0.29 | 0.000 | -1.2717 | -1.2005 |
| 7.0-7.9 | 0.019 | -1.5688 | 0.0247 | 0.21 | 0.000 | -1.6172 | -1.5203 |

Area

| Southern Sweden | 0.202 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Middle Sweden | 0.140 | -0.0923 | 0.0072 | 0.91 | 0.000 | -0.1064 | -0.0782 |
| Northern Sweden | 0.092 | -0.0558 | 0.0082 | 0.95 | 0.000 | -0.0718 | -0.0398 |
| Big city counties | 0.563 | -0.0444 | 0.0054 | 0.96 | 0.000 | -0.0551 | -0.0338 |
| NA | 0.003 | -0.1668 | 0.0453 | 0.85 | 0.000 | -0.2555 | -0.0780 |

Country of birth

| Swe - Swe | 0.776 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Swe - Nordic | 0.033 | -0.1167 | 0.0118 | 0.89 | 0.000 | -0.1398 | -0.0937 |
| Swe-Eur/N.Am. | 0.036 | -0.2793 | 0.0118 | 0.76 | 0.000 | -0.3025 | -0.2561 |
| Swe - Rest | 0.037 | -0.3597 | 0.0121 | 0.70 | 0.000 | -0.3834 | -0.3361 |
| Nordic - Nordic | 0.006 | -0.5427 | 0.0319 | 0.58 | 0.000 | -0.6053 | -0.4802 |
| Nordic - Eur/N.Am. | 0.001 | -0.5292 | 0.0635 | 0.59 | 0.000 | -0.6536 | -0.4047 |
| Nordic - Rest | 0.002 | -0.4081 | 0.0529 | 0.66 | 0.000 | -0.5118 | -0.3043 |
| Eur/N.Am. - Eur/N.Am. | 0.040 | -1.0829 | 0.0154 | 0.34 | 0.000 | -1.1132 | -1.0526 |
| Eur/N.Am. - Rest | 0.005 | -0.6934 | 0.0355 | 0.50 | 0.000 | -0.7630 | -0.6237 |
| Rest-Rest | 0.065 | -0.3680 | 0.0108 | 0.69 | 0.000 | -0.3891 | -0.3469 |
| Cohort (woman) |  |  |  |  |  |  |  |
| 1946-1954 | 0.011 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 1955-1959 | 0.060 | 0.1893 | 0.0333 | 1.21 | 0.000 | 0.1240 | 0.2545 |
| 1960-1964 | 0.186 | 0.2174 | 0.0332 | 1.24 | 0.000 | 0.1523 | 0.2824 |
| 1965-1969 | 0.333 | 0.1750 | 0.0336 | 1.19 | 0.000 | 0.1092 | 0.2409 |
| 1970-1974 | 0.282 | 0.1011 | 0.0339 | 1.11 | 0.003 | 0.0346 | 0.1676 |
| 1975-1979 | 0.107 | -0.0247 | 0.0346 | 0.98 | 0.475 | -0.0925 | 0.0431 |
| 1980-1988 | 0.022 | -0.0795 | 0.0375 | 0.92 | 0.034 | -0.1531 | -0.0059 |
| Civil status |  |  |  |  |  |  |  |
| Cohabiting | 0.490 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| Married | 0.510 | 0.2777 | 0.0045 | 1.32 | 0.000 | 0.2688 | 0.2865 |
| Constant |  | -3.6344 | 0.0838 |  | 0.000 | -3.7987 | -3.4701 |
| Births |  | 346,368 |  |  |  |  |  |
| Number of obs |  | 1,537,649 |  |  |  |  |  |
| Log likelihood |  | -714322 |  |  |  |  |  |
| LR chi2(55) |  | 211975 |  |  |  |  |  |
| Prob > chi2 |  | 0.0000 |  |  |  |  |  |

Note: Birth histories have been truncated at 8 years since last birth.

Source: Statistics Sweden, see text.

Table 5. Logit estimates of third births, 1991-2005.

|  | Mean | Coef. | Std. Err. | Odds ratio | $P>\|z\|$ | [95\% Conf. | Interval] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Education status |  |  |  |  |  |  |  |
| m high/p - w high/p | 0.021 | 0.3520 | 0.0281 | 1.42 | 0.000 | 0.2970 | 0.4070 |
| m high/p - w high/o | 0.010 | 0.3951 | 0.0382 | 1.48 | 0.000 | 0.3203 | 0.4699 |
| m high/o-w high/p | 0.003 | 0.3448 | 0.0660 | 1.41 | 0.000 | 0.2154 | 0.4742 |
| m high/o - w high/o | 0.006 | 0.4347 | 0.0478 | 1.54 | 0.000 | 0.3410 | 0.5284 |
| m high/p-w middle | 0.053 | 0.2735 | 0.0182 | 1.31 | 0.000 | 0.2377 | 0.3093 |
| m middle - w high/p | 0.015 | 0.0326 | 0.0355 | 1.03 | 0.359 | -0.0371 | 0.1022 |
| m high/o-w middle | 0.017 | 0.2747 | 0.0286 | 1.32 | 0.000 | 0.2186 | 0.3307 |
| m middle - w high/o | 0.012 | 0.2704 | 0.0358 | 1.31 | 0.000 | 0.2002 | 0.3406 |
| $m$ middle - w middle | 0.236 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m high/p-w low | 0.009 | -0.0311 | 0.0422 | 0.97 | 0.461 | -0.1137 | 0.0516 |
| m low - w high/p | 0.005 | -0.1797 | 0.0662 | 0.84 | 0.007 | -0.3096 | -0.0499 |
| m high/o-w low | 0.003 | -0.0014 | 0.0669 | 1.00 | 0.983 | -0.1325 | 0.1297 |
| m low - w high/o | 0.004 | 0.0248 | 0.0630 | 1.03 | 0.693 | -0.0987 | 0.1484 |
| m middle - w low | 0.107 | -0.2166 | 0.0147 | 0.81 | 0.000 | -0.2455 | -0.1877 |
| m low - w middle | 0.213 | -0.2255 | 0.0122 | 0.80 | 0.000 | -0.2494 | -0.2016 |
| m low - w low | 0.286 | -0.2761 | 0.0117 | 0.76 | 0.000 | -0.2989 | -0.2532 |
| Accumulated couple income |  |  |  |  |  |  |  |
| -11.9 | 0.022 | 0.3640 | 0.0244 | 1.44 | 0.000 | 0.3161 | 0.4118 |
| 12.0-23.9 | 0.068 | 0.2854 | 0.0158 | 1.33 | 0.000 | 0.2545 | 0.3163 |
| 24.0-29.9 | 0.122 | 0.1155 | 0.0132 | 1.12 | 0.000 | 0.0896 | 0.1415 |
| 30.0-35.9 | 0.270 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 36.0-41.9 | 0.236 | -0.0465 | 0.0117 | 0.95 | 0.000 | -0.0694 | -0.0236 |
| 42.0-47.9 | 0.121 | -0.0072 | 0.0148 | 0.99 | 0.629 | -0.0362 | 0.0219 |
| 48.0- | 0.160 | 0.1638 | 0.0150 | 1.18 | 0.000 | 0.1344 | 0.1933 |
| Woman's age | 32.31 | 0.1957 | 0.0129 | 1.22 | 0.000 | 0.1704 | 0.2209 |
| Woman's age sq. | 1064.43 | -0.0050 | 0.0002 | 1.00 | 0.000 | -0.0054 | -0.0046 |
| Age difference |  |  |  |  |  |  |  |
| Same age | 0.129 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m 3+ older | 0.426 | -0.0893 | 0.0128 | 0.91 | 0.000 | -0.1143 | -0.0643 |
| m 1-2 older | 0.278 | -0.0408 | 0.0134 | 0.96 | 0.002 | -0.0670 | -0.0146 |
| w 1-2 older | 0.107 | 0.1313 | 0.0166 | 1.14 | 0.000 | 0.0987 | 0.1640 |
| w 3+ older | 0.060 | 0.3157 | 0.0214 | 1.37 | 0.000 | 0.2738 | 0.3577 |
| Time since last birth |  |  |  |  |  |  |  |
| 2.0-2.9 | 0.156 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 0.0-0.9 | 0.213 | -1.5650 | 0.0163 | 0.21 | 0.000 | -1.5970 | -1.5329 |
| 1.0-1.9 | 0.189 | -0.0356 | 0.0114 | 0.97 | 0.002 | -0.0580 | -0.0132 |
| 3.0-3.9 | 0.128 | 0.0137 | 0.0130 | 1.01 | 0.292 | -0.0118 | 0.0393 |
| 4.0-4.9 | 0.105 | -0.0567 | 0.0147 | 0.94 | 0.000 | -0.0856 | -0.0278 |
| 5.0-5.9 | 0.086 | -0.0847 | 0.0168 | 0.92 | 0.000 | -0.1176 | -0.0519 |
| 6.0-6.9 | 0.069 | -0.3123 | 0.0208 | 0.73 | 0.000 | -0.3530 | -0.2716 |
| 7.0-7.9 | 0.055 | -0.5170 | 0.0262 | 0.60 | 0.000 | -0.5683 | -0.4656 |

Area

| Southern Sweden | 0.217 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Middle Sweden | 0.140 | -0.1081 | 0.0136 | 0.90 | 0.000 | -0.1348 | -0.0813 |
| Northern Sweden | 0.095 | 0.0941 | 0.0148 | 1.10 | 0.000 | 0.0650 | 0.1232 |
| Big city counties | 0.548 | -0.0945 | 0.0101 | 0.91 | 0.000 | -0.1142 | -0.0748 |
| NA | 0.000 | -0.0218 | 0.1737 | 0.98 | 0.900 | -0.3622 | 0.3186 |

Country of birth

|  |  |  |  |  |  |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Swe - Swe | 0.846 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| Swe - Nordic | 0.033 | 0.0425 | 0.0225 | 1.04 | 0.060 | -0.0017 | 0.0866 |
| Swe - Eur/N.Am. | 0.029 | -0.0115 | 0.0240 | 0.99 | 0.632 | -0.0584 | 0.0355 |
| Swe - Rest | 0.024 | 0.0593 | 0.0250 | 1.06 | 0.017 | 0.0104 | 0.1082 |
| Nordic - Nordic | 0.004 | 0.1141 | 0.0673 | 1.12 | 0.090 | -0.0177 | 0.2460 |
| Nordic - Eur/N.Am. | 0.001 | 0.1685 | 0.1262 | 1.18 | 0.182 | -0.0788 | 0.4159 |
| Nordic - Rest | 0.001 | 0.1296 | 0.1063 | 1.14 | 0.223 | -0.0787 | 0.3380 |
| Eur/N.Am. - Eur/N.Am. | 0.016 | -0.3642 | 0.0349 | 0.69 | 0.000 | -0.4327 | -0.2957 |
| Eur/N.Am. - Rest | 0.003 | -0.0085 | 0.0704 | 0.99 | 0.904 | -0.1465 | 0.1294 |
| Rest -Rest | 0.044 | 0.5365 | 0.0174 | 1.71 | 0.000 | 0.5023 | 0.5707 |
| Cohort (woman) |  |  |  |  |  |  |  |
| 1946-1954 | 0.004 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 1955-1959 | 0.052 | -0.0666 | 0.1110 | 0.94 | 0.548 | -0.2841 | 0.1508 |
| 1960-1964 | 0.237 | -0.2279 | 0.1104 | 0.80 | 0.039 | -0.4442 | -0.0115 |
| 1965-1969 | 0.417 | -0.3363 | 0.1112 | 0.71 | 0.002 | -0.5542 | -0.1184 |
| 1970-1974 | 0.239 | -0.3254 | 0.1117 | 0.72 | 0.004 | -0.5444 | -0.1064 |
| 1975-1979 | 0.047 | -0.2642 | 0.1127 | 0.77 | 0.019 | -0.4851 | -0.0433 |
| 1980-1988 | 0.004 | -0.1561 | 0.1238 | 0.86 | 0.207 | -0.3986 | 0.0865 |
| Civil status |  |  |  |  |  |  |  |
| Cohabiting | 0.363 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| Married | 0.637 | 0.3703 | 0.0092 | 1.45 | 0.000 | 0.3522 | 0.3884 |
| Constant |  | -3.7276 | 0.2202 |  | 0.000 | -4.1592 | -3.2960 |


| Births | 69,132 |
| :--- | ---: |
| Number of obs | $1,529,064$ |
| Log likelihood | -265865 |
| LR chi2(55) | 31479 |
| Prob > chi2 | 0.0000 |

Note: Birth histories have been truncated at 8 years since last birth.

Source: Statistics Sweden, see text.

Table 6. Logit estimates of fourth births, 1991-2005.

|  | Mean | Coef. | Std. Err. | Odds ratio | $P>\|z\|$ | [95\% Conf. | Interval] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Education status |  |  |  |  |  |  |  |
| m high/p - w high/p | 0.021 | -0.1483 | 0.1099 | 0.86 | 0.177 | -0.3636 | 0.0671 |
| m high/p - w high/o | 0.010 | 0.2252 | 0.1209 | 1.25 | 0.062 | -0.0117 | 0.4621 |
| m high/o - w high/p | 0.003 | 0.2619 | 0.2191 | 1.30 | 0.232 | -0.1676 | 0.6913 |
| m high/o-w high/o | 0.006 | 0.2878 | 0.1425 | 1.33 | 0.043 | 0.0084 | 0.5671 |
| m high/p - w middle | 0.053 | -0.0223 | 0.0589 | 0.98 | 0.705 | -0.1377 | 0.0931 |
| m middle - w high/p | 0.015 | 0.1073 | 0.1192 | 1.11 | 0.368 | -0.1264 | 0.3409 |
| m high/o-w middle | 0.017 | 0.2643 | 0.0774 | 1.30 | 0.001 | 0.1126 | 0.4161 |
| m middle - w high/o | 0.012 | 0.1166 | 0.1102 | 1.12 | 0.290 | -0.0994 | 0.3326 |
| m middle - w middle | 0.236 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m high/p-w low | 0.009 | -0.0012 | 0.1154 | 1.00 | 0.992 | -0.2273 | 0.2250 |
| m low - w high/p | 0.005 | -0.0882 | 0.2234 | 0.92 | 0.693 | -0.5260 | 0.3496 |
| m high/o-w low | 0.003 | 0.0913 | 0.1452 | 1.10 | 0.530 | -0.1933 | 0.3759 |
| m low - w high/o | 0.004 | -0.2060 | 0.2028 | 0.81 | 0.310 | -0.6035 | 0.1916 |
| m middle - w low | 0.107 | -0.0225 | 0.0395 | 0.98 | 0.570 | -0.0999 | 0.0550 |
| m low - w middle | 0.213 | -0.1277 | 0.0350 | 0.88 | 0.000 | -0.1964 | -0.0591 |
| m low - w low | 0.286 | -0.0324 | 0.0314 | 0.97 | 0.302 | -0.0940 | 0.0292 |
| Accumulated couple income |  |  |  |  |  |  |  |
| -11.9 | 0.027 | 0.5117 | 0.0519 | 1.67 | 0.000 | 0.4100 | 0.6134 |
| 12.0-23.9 | 0.079 | 0.3235 | 0.0393 | 1.38 | 0.000 | 0.2465 | 0.4005 |
| 24.0-29.9 | 0.109 | 0.1834 | 0.0369 | 1.20 | 0.000 | 0.1110 | 0.2558 |
| 30.0-35.9 | 0.226 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 36.0-41.9 | 0.228 | -0.0606 | 0.0335 | 0.94 | 0.071 | -0.1262 | 0.0051 |
| 42.0-47.9 | 0.131 | -0.0518 | 0.0413 | 0.95 | 0.210 | -0.1327 | 0.0292 |
| 48.0- | 0.200 | -0.0085 | 0.0427 | 0.99 | 0.843 | -0.0921 | 0.0752 |
| Woman's age | 32.31 | 0.1981 | 0.0370 | 1.22 | 0.000 | 0.1255 | 0.2706 |
| Woman's age sq. | 1064.43 | -0.0049 | 0.0006 | 1.00 | 0.000 | -0.0061 | -0.0038 |
| Age difference |  |  |  |  |  |  |  |
| Same age | 0.129 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| m 3+ older | 0.426 | -0.0704 | 0.0363 | 0.93 | 0.053 | -0.1416 | 0.0008 |
| m 1-2 older | 0.278 | -0.0968 | 0.0388 | 0.91 | 0.013 | -0.1728 | -0.0207 |
| w 1-2 older | 0.107 | 0.2055 | 0.0473 | 1.23 | 0.000 | 0.1128 | 0.2983 |
| w 3+ older | 0.060 | 0.3511 | 0.0620 | 1.42 | 0.000 | 0.2296 | 0.4727 |
| Time since last birth |  |  |  |  |  |  |  |
| 2.0-2.9 | 0.156 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 0.0-0.9 | 0.213 | -1.2667 | 0.0397 | 0.28 | 0.000 | -1.3446 | -1.1888 |
| 1.0-1.9 | 0.189 | 0.1532 | 0.0300 | 1.17 | 0.000 | 0.0943 | 0.2121 |
| 3.0-3.9 | 0.128 | -0.1550 | 0.0376 | 0.86 | 0.000 | -0.2287 | -0.0814 |
| 4.0-4.9 | 0.105 | -0.1515 | 0.0422 | 0.86 | 0.000 | -0.2343 | -0.0687 |
| 5.0-5.9 | 0.086 | -0.2271 | 0.0502 | 0.80 | 0.000 | -0.3254 | -0.1288 |
| 6.0-6.9 | 0.069 | -0.3140 | 0.0615 | 0.73 | 0.000 | -0.4345 | -0.1934 |
| 7.0-7.9 | 0.055 | -0.5041 | 0.0814 | 0.60 | 0.000 | -0.6636 | -0.3445 |

## Area

| Southern Sweden | 0.217 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Middle Sweden | 0.140 | 0.0099 | 0.0371 | 1.01 | 0.789 | -0.0628 | 0.0827 |
| Northern Sweden | 0.095 | 0.2379 | 0.0388 | 1.27 | 0.000 | 0.1619 | 0.3140 |
| Big city counties | 0.548 | -0.0217 | 0.0276 | 0.98 | 0.430 | -0.0758 | 0.0323 |
| NA | 0.000 | 0.9075 | 0.3339 | 2.48 | 0.007 | 0.2532 | 1.5619 |

Country of birth

|  | 0.846 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| :--- | ---: | ---: | ---: | ---: | ---: | ---: | ---: |
| Swe - Swe | 0.033 | 0.2601 | 0.0579 | 1.30 | 0.000 | 0.1467 | 0.3736 |
| Swe - Nordic | 0.029 | 0.2689 | 0.0670 | 1.31 | 0.000 | 0.1376 | 0.4002 |
| Swe - Eur/N.Am. | 0.024 | 0.4376 | 0.0630 | 1.55 | 0.000 | 0.3142 | 0.5611 |
| Swe - Rest | 0.004 | 0.4407 | 0.1683 | 1.55 | 0.009 | 0.1108 | 0.7705 |
| Nordic - Nordic | 0.001 | 0.7183 | 0.2992 | 2.05 | 0.016 | 0.1317 | 1.3048 |
| Nordic - Eur/N.Am. | 0.001 | 0.5571 | 0.2461 | 1.75 | 0.024 | 0.0747 | 1.0396 |
| Nordic - Rest | 0.016 | 0.0038 | 0.1004 | 1.00 | 0.969 | -0.1929 | 0.2006 |
| Eur/N.Am. - Eur/N.Am. | 0.003 | 0.2441 | 0.1726 | 1.28 | 0.157 | -0.0942 | 0.5823 |
| Eur/N.Am. - Rest | 0.044 | 0.8717 | 0.0360 | 2.39 | 0.000 | 0.8010 | 0.9424 |
| Rest -Rest |  |  |  |  |  |  |  |
| Cohort (woman) | 0.004 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| 1946-1954 | 0.052 | 0.4448 | 0.5093 | 1.56 | 0.382 | -0.5534 | 1.4430 |
| 1955-1959 | 0.237 | 0.1128 | 0.5074 | 1.12 | 0.824 | -0.8817 | 1.1073 |
| 1960-1964 | 0.417 | 0.0095 | 0.5089 | 1.01 | 0.985 | -0.9880 | 1.0069 |
| 1965-1969 | 0.239 | 0.0462 | 0.5100 | 1.05 | 0.928 | -0.9533 | 1.0458 |
| 1970-1974 | 0.047 | 0.2651 | 0.5116 | 1.30 | 0.604 | -0.7376 | 1.2679 |
| 1975-1979 | 0.004 | 0.3801 | 0.5449 | 1.46 | 0.485 | -0.6879 | 1.4482 |
| 1980-1988 |  |  |  |  |  |  |  |
| Civil status | 0.363 | ref.cat. |  | 1.00 | ref.cat. |  |  |
| Cohabiting | 0.637 | 0.2669 | 0.0287 | 1.31 | 0.000 | 0.2107 | 0.3232 |
| Married |  | -4.7066 | 0.7600 |  | 0.000 | -6.1961 | -3.2170 |


| Births | 9,299 |
| :--- | ---: |
| Number of obs | 296,129 |
| Log likelihood | -38252 |
| LR chi2(55) | 6165 |
| Prob > chi2 | 0.000 |

Note: Birth histories have been truncated at 8 years since last birth.

Source: Statistics Sweden, see text.

Figure 1. Odds ratios of having a birth by couple's educational status.


Figure 2. Odds ratios of having a birth by couple's accumulated income.


Figure 3. Odds ratios of having a birth by age difference between spouses.



[^0]:    ${ }^{1}$ For other definitions of power couples see Costa \& Kahn, 2000; Abbott, 2003 and Compton \& Pollak, 2004.

[^1]:    ${ }^{2}$ One solution to part of the problem is to bring in domestic help to do housework and to maintain more peopleoriented activities. Another solution is to purchase high quality child-care in order to concentrate on work (cf. Ermisch, 1989).

[^2]:    ${ }^{3}$ Ott (1995) therefore discusses couples' decision-making both from a bargaining and a game-theoretical perspective.

[^3]:    ${ }^{4}$ Since firm's recruitment of staff into career tracks often focus on finding relatively young candidates, individuals facing such career opportunities most likely will put off childbearing in order not to miss out on that chance. According to the New Home Economics (e.g. Becker, 1991), a complicating aspect is that of child quality, an output of reproductive work that becomes more important as incomes and standards of living increases. Particularly the rich substitute high child quality for many children and the highly educated, high income-earners that do have children, presumably invest the most in their offspring.

[^4]:    ${ }^{5}$ Whereas about two-thirds of all first births are born to cohabiting parents, second and higher order birth, to a higher degree, take place within marriage.

