The Motherhood Penalty at Midlife:

The Long-term Impact of Birth-timing on Women's Careers

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A growing body of research has shown that mothers pay a significant wage penalty for having children (Waldfogel 1995, 1997; Budig and England 2001; Avellar and Smock, 2003). The main argument is that having and raising children interferes with the accumulation of human capital and hence the level of productivity, which then translates into lower wages. This means that women who, as a result of having or planning to have children, either cut short their education, drop out of the labor force for an extended period, cut back to part-time employment, choose occupations that are more family-friendly, or pass up promotions because of time or locational constraints, will end up achieving less than women who stay on track with full-time employment and take advantage of opportunities for training and career advancement (Anderson, Binder and Krause 2003; Baum 2002; Jacobsen and Levin 1995; Gangl and Ziefle 2009; Aisenbrey, Evertsson and Grunow 2009). Women who start having children earlier in adulthood (or who go on to have many children) are more likely to make these kinds of accommodations in their work lives and therefore suffer greater penalties than do women who postpone childbearing or have fewer children overall (Blackburn, Bloom and Neumark 1993; Chandler, Kamo and Werbel 1994; Taniguchi 1999; Buckles 2008). Some researchers also argue that mothers may face workplace discrimination because of employers who believe that they are less competent or committed to their jobs (Budig and England 2001; Correll, Benard and Paik 2007). Unfortunately, because discrimination is so hard to measure empirically, evidence of it is typically inferred from residual wage differences that remain after controlling for human capital (see Correll et al. 2007, for a notable exception).

Most research on the motherhood penalty has focused on wages, especially those earned by women who are still raising their children, typically between the ages of 20 and 40. We know less about the longer-term consequences of motherhood for women's careers. It is possible that as their children grow older and more independent, mothers will focus more time and energy on their work lives, and as a result will eventually narrow the wage gap with childless women (Anderson, Binder and Krause 2003). On the other hand, women who started having children at a relatively young age

may suffer a cumulative disadvantage over time if their lack of early investment in human capital keeps them out of higher paying occupations and denies them the opportunities for significant wage growth and occupational mobility. In this case, one might expect a widening of the motherhood penalty as women age into midlife (Blackburn, Bloom and Neumark 1994; Loughran and Zissimopoulos 2008). While several studies have estimated women's long-term earnings losses due to motherhood, they have been based on simulations from cross-sectional data rather than on the lived experience of real cohorts (Davies, Joshi and Peronaci, 2000; Sigle-Rushton and Waldfogel, 2007).

In this study, we use data from the National Longitudinal Study of Young Women to model the motherhood penalty over the course of women's careers as they age through their forties and fifties—a time when virtually all women will have finished bearing children and most will have seen their children either leave the home or at least enter adolescence. At this stage of the life course, women will likely have more time and opportunity for employment outside of the home compared with earlier years. Unlike previous studies which focus almost exclusively on wage differences, our assessment of the motherhood penalty considers both wages and occupational status as indicators of economic success. While related to each other, they provide different perspectives on employment experiences. In addition to examining cross-sectional differences in these outcomes, we also model the wage growth and occupational mobility of women as they age through their thirties, forties and fifties. This will allow us to assess whether the motherhood gap narrows over these stages of the life course.

DATA AND MEASURES

The data for the analysis come from the National Longitudinal Study-Young Women cohort (NLS-YW). The NLS-YW cohort consists of a national sample of women who were ages 14-24 in 1968; the cohort was reinterviewed either every year or every other year until the final interview in 2003 when they were ages 49-59. The NLS-YW is well-suited for the present analysis because of the detailed employment and family information collected throughout the lives of the respondents. In addition, we utilize repeated attitudinal measures that enrich the analysis of employment outcomes.

Because our ultimate goal is to model change throughout the adult life course, we define our sample as all women who participated throughout the survey, with no

more than 1 missing interview between 1968 and 2003 (i.e., at least 21 out of 22 interviews). This yields a sample of approximately 2100 women. In the present paper, we focus on change between 3 time points: 1983 (when the sample was 29-39), 1993 (when the sample was 39-49) and 2003 (when the sample was 49-59). We start by looking cross-sectionally at career outcomes in these three years, and then model career changes during the intervening decades.

Our dependent variables reflect hourly wages and occupational status. While the measurement of wages is relatively straightforward, we will experiment with different measures of wage growth, including the log of the ratio of the end wage over the starting wage (see Dex, Ward and Joshi 2008). We measure occupational status using the Hauser-Warren Socioeconomic Index (HWSEI) which has been updated to incorporate 1990 Census occupational codes and occupational prestige ratings as reported in the 1989 General Social Survey (Hauser and Warren, 1997). Again, we will experiment with different measures of occupational mobility (e.g., upward vs. downward mobility, status change scores, etc.)

Our key motherhood variables of interest reflect the number of births plus the timing of childbearing over the life course, in terms of both when women have their first births and when they complete their childbearing. We argue that both the timing and duration of childbearing will have distinct effects on women's careers. The timing of first births tells us about the potential for early adult investments in human capital and the establishment of an adult worker identity (Goldin 2006). Women with earlier first births are less likely than those who delay (or forego) motherhood to obtain higher levels of education or to devote full-time effort to establishing a career. Although it is closely related to the total number of births, the duration between first and last birth is potentially more illuminating because it indicates how much of a woman's adult life course is filled with the demands of childrearing. Taken together, the timing and duration of childbearing allow us to view childbearing within the context of career development over the life course.

Our model of the motherhood penalty includes many of the same factors used in previous studies. We start with detailed measures of human capital, including education and job training, cumulative work experience in full-time and part-time jobs, and disruptions to employment, including spells out of the workforce. The wage models will also include a range of job characteristics such as occupational status, whether it is a part-time job, or a female-type job.

Almost every study of the motherhood wage penalty discusses the possibility that unobserved heterogeneity between mothers and non-mothers (or between women with early and late first births) may account for some, if not all, of the differences in employment outcomes by motherhood status. They argue that rather than representing a causal effect of motherhood on wages, the effect could be spurious if there are unmeasured qualities such as motivation or commitment to work that may influence decisions about childbearing as well as employment outcomes. Indeed, Hakim's (2002) work on preference theory has shown that women have distinct lifestyle preferences which are either home-oriented, work-oriented or adaptive, and these preferences are major determinants of fertility and employment patterns. We make use of the repeated questions asking young women about the kind of work they would like to be doing at age 35; options include being at home (keeping house and raising a family), working (either at the same or different job) or don't know. Because these questions were asked a total of 13 times between 1968 and 1987, they allow us to distinguish between women who were consistently committed to either home or work, from those who changed their preferences over time.

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