

# JOB CONTINUITY AMONG NEW MOTHERS\*

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*In the early 1990s, both state and federal governments enacted maternity-leave legislation. The key provision of that legislation is that after a leave of a limited duration, the recent mother is guaranteed the right to return to her preleave employer at the same or equivalent position. Using data from the National Longitudinal Survey of Youth, we correlate work status after childbirth with work status before pregnancy to estimate the prevalence, before the legislation, of returns to the preleave employer. Among women working full-time before the pregnancy, return to the prepregnancy employer was quite common. Sixty percent of women who worked full-time before the birth of a child continued to work for the same employer after the child was born. Furthermore, the labor market behavior of most of the remaining 40% suggests that maternity-leave legislation is unlikely to have a major effect on job continuity. Compared with all demographically similar women, however, new mothers have an excess probability of leaving their jobs.*

**T**he Family and Medical Leave Act of 1993 (FMLA), which took effect August 1, 1993, guarantees to new mothers (among others) up to 12 weeks of leave without pay and the right to reinstatement without penalty in the job held at the start of the leave (see Ruhm 1997 for details of the legislation). Maternity-leave statutes, including legislation in force in some states before the FMLA, promise advantages for both infants and their mothers. Infants are expected to benefit from their mother's full-time care during the maternity-leave guarantee period (Brazelton 1986; Zigler, Frank, and Emmel 1988). The mothers benefit not only from increased time to spend with their newborns but also from the right to return to their jobs without penalty. Returning to the same job allows women workers to collect on investments made in on-the-job training and in a good job match (Waldfoegel 1998a). Indeed, maternity leave helps to reduce the wage gap between mothers and similar women who have never had children (Waldfoegel 1997, 1998b).

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A new mother's ability to collect on the work-related benefits depends on her ability to resume a job for which she had specific training and where she had made a good "match" with the employer. Thus, we seek to understand, in the absence of legal protection (such as the FMLA), the extent to which women returned to their old jobs rather than commenced work for a new employer. Previous analyses have established that labor supply among new mothers has grown rapidly over the last two decades, but there has been little study of job continuity (Leibowitz and Klerman 1995). If the FMLA is expected to lead to increases in women's wages by allowing them to return to their prepregnancy employers, then it is important to understand the extent to which new mothers returned to their old jobs before the passage of the FMLA.

Combining data from the National Longitudinal Survey of Youth (NLSY) and the Current Population Survey (CPS), we estimate the prevalence of job continuity before the federal legislation took effect. We report the joint distribution of employment before and after the birth of a child and compare that behavior with the behavior of all demographically similar women. Finally, using a theoretical model of the maternity-leave choice, we argue that the FMLA is unlikely to have large effects on job continuity or wages.

## WORK AMONG NEW MOTHERS

The last two decades have seen major changes in the work patterns of mothers of young children. Among women with 2-year-old children, labor force participation rates increased from 37.1% to 66.7% between 1975 and 1995 (U.S. Bureau of the Census 1997:400). For mothers of younger children, the increase has been even more dramatic. In the mid-1970s, only about 15% of mothers of 1-month-olds were in the labor force. By the late 1980s, the comparable figure was over 40% (Klerman and Leibowitz 1994). Thus, although mothers' labor force participation has risen, the relation between mothers' labor force participation and the age of the youngest child has weakened. By 1990, despite the higher levels of work among mothers of older children, mothers' labor force participation increased only two percentage points between 7 and 36 months following childbirth.<sup>1</sup>

These changes in labor force participation among new mothers have been widely noted (Hayghe 1986; see U.S. Bureau of the Census 1997 for updates). O'Connell (1990) used

1. The statistics in the body of the paper are computed from cross-sectional data based on the age of the youngest child. Thus, women who have a subsequent birth within 36 months are deleted from the comparison group.

Survey of Income and Program Participation (SIPP) retrospective data on the timing of leaving work during pregnancy and returning to work after a first childbirth to identify similar time-series trends. Several papers used hazard models to analyze the timing of return to work after childbirth. Even (1987), using the first wave of the National Survey of Family Growth (again retrospective data on first births), McLaughlin (1982), using the National Longitudinal Survey-Mature Women, O'Connell (1990), using the SIPP, and Klerman (1993), using the NLSY, have shown similar patterns.

This shrinkage of the time away from work around childbirth makes possible different strategies for juggling child raising and a career. For women who will be away from the labor market for several years, quitting the pre-pregnancy job is the only alternative. For women who will be away from the labor force for only a few months, employers and employees can jointly make arrangements that allow both for job continuity and for the new mother to spend time away from the workplace caring for and enjoying the new child.

These arrangements make conventional labor force participation tabulations—such as those reported at the beginning of this section—a poor measure of a new mother's time at work (Klerman and Leibowitz 1994). A new mother taking paid or unpaid leave from her job is counted in the labor force data as "employed" and "in the labor force," but she is not counted as "at work." Thus, although tabulations from the CPS show large increases in employment and labor force participation among mothers of 1-month-old infants, the growth in the number of women who are actually working is much more modest. The labor force participation for mothers of 1-month-olds increased nearly threefold (from 15% to 40%) between the period 1973–1975 and 1990. In 1990, however, only 15% of the new mothers were actually at work in the month following delivery, whereas 25% of the new mothers were on leave from their jobs and not at work. New mothers' use of paid or unpaid leave is a short-lived phenomenon. Few women are using paid leave two months after delivery, and the use of unpaid leave has largely disappeared three months following childbirth (Klerman 1993; Klerman and Leibowitz 1994). The reductions in leave taking are compensated by increases in the percentage of women who are at work. Among women who gave birth in 1990, most had completed their childbirth-related leave by four months following the delivery, and 40% of these new mothers were at work. What is not known is whether these mothers hold their prechildbirth jobs or whether they have changed employers.

Maternity-leave statutes guarantee the right to return to the pregnancy employer. CPS data, however, do not allow us to determine whether women return to a job held during pregnancy, work for a different employer, or held no job during pregnancy. In the next two sections, we describe a simple model of decision making about time away from work after childbirth and about returning to the same employer, and a methodology for exploring these dynamic aspects of maternal work patterns. This methodology combines cross-sectional data from the CPS with longitudinal data from the NLSY to address questions about a new mother's continuity

with a given employer and how this compares with job continuity for women who did not give birth in the period.

### A MODEL OF LEAVE FOR MATERNITY

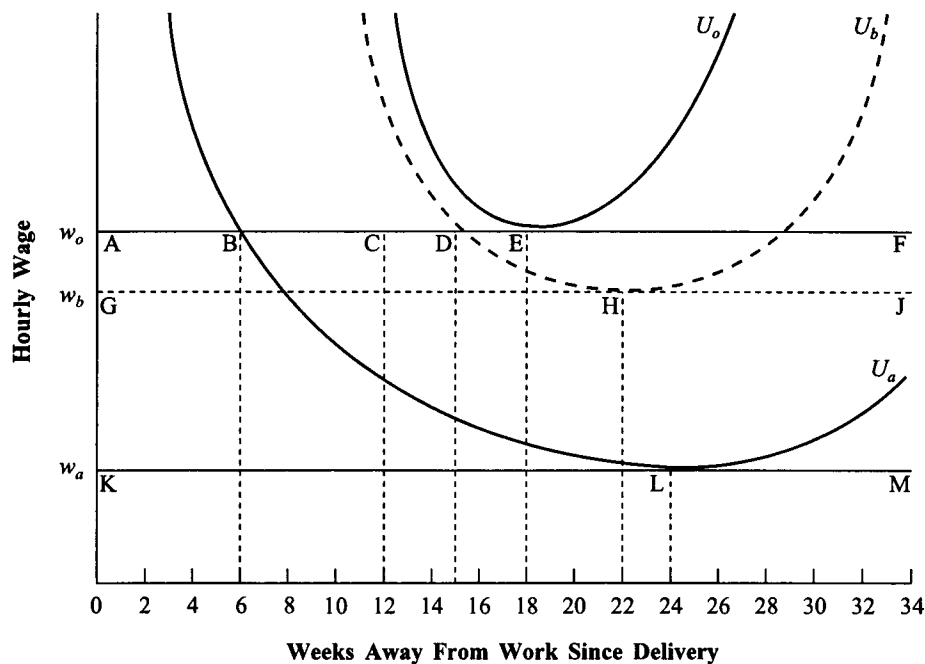
In this section, we present a simple graphical model of a woman's labor market choices immediately after the birth of a child and the effects of a maternity-leave statute on those choices. The model explores how a new mother chooses between a short time away from the workplace and return to the prebirth job at the prebirth wage (maternity leave), and a longer time away from the workplace followed by return to an alternative job offering a lower wage (i.e., quit the prechildbirth job and later start a new, lower-wage job). Consistent with the focus of the empirical work in this paper, the exposition of the model focuses on the job continuity choice.<sup>2</sup>

We view the maternity-leave choice as arising from the nature of the labor market. If women worked in a spot market for labor, a new mother could wake up each morning and decide whether to work, given her market wage. Her choice of when to return to work would balance two considerations. The reward of cash wages draws her into the labor market sooner. In particular, while the woman stays away from the workplace, most households draw down savings. Thus, a household could not afford a leave that is too long. On the other hand, because being with one's new child is both pleasant and tiring, a new mother would not want to return to the workplace too soon. When faced with a spot market for labor, a woman would choose a date on which to return to work that balances these two considerations.

For most women, however, the modern labor market is not a spot market. Women form long-term relations with employers (i.e., jobs). Both specific human capital and labor market search costs imply that the wage on the pre-pregnancy job is likely to be higher, often much higher, than the wage on the best available alternative job. Because the absence of a worker affects the production process, firms will usually limit the length of allowable maternity leave. Thus, some new mothers must choose between (1) a period away from the workplace that is shorter than desired (i.e., maternity leave), followed by return to their pre-pregnancy jobs at the pre-pregnancy wage, and (2) a longer period away from the workplace, but a return to the lower wage of the alternative job. More broadly, the cost of taking a leave longer than that offered by the current firm is not only earnings forgone in the interval between the time the new mother would return to her current job and the time she would begin an alternative job but also the present value of the difference in earnings between the current job and the alternative job over the woman's remaining working life.

2. Klerman and Leibowitz (1998) used a more general analysis of this model, which suggests that, given mild assumptions, the graphical analysis presented here is quite general. This analysis, however, assumes that a maternity-leave statute affects only the postbirth labor market choice. Over the long run, the presence of a maternity-leave statute may also affect pre-birth work patterns and wages. Such effects could overturn some of the theoretical results. For evidence on such effects see Ruhm (1997, 1998) and Waldfogel (1996, 1997).

FIGURE 1. THE QUIT-LEAVE DECISION



A formal model helps us to understand the nature of this choice, the effects of a maternity-leave statute, and the implications of our empirical work for the effects of a maternity-leave statute. Our exposition of the model uses Figure 1. The  $x$  axis measures the length of time spent away from work after childbirth. The  $y$  axis measures the new mother's hourly wage. We have drawn three wages:  $w_o$ , the wage on the current job;  $w_a$ , the wage on the best available alternative job; and the third wage,  $w_b$ . By revealed preference, the wage on the alternative job can be no higher than the wage on the current job. Considerations of firm-specific human capital and costly job search suggest that the wage on the alternative job will be considerably lower than the wage on the current job.<sup>3</sup>

Each woman will have preferences over combinations of leave lengths and wage levels. Thus, in this wage-leave length space we can draw her iso-utility curves. Each iso-utility curve gives the set of wage-leave length combinations (points on Figure 1) about which this new mother is indifferent. As in conventional economic analyses of the choice between two goods subject to a budget constraint, these utility curves reflect preferences only (independent of the jobs actually available to a woman).

3. More generally, these wages should be thought of as the present value of the stream of future earnings depending on whether the woman returns to this job or quits this job and returns to the best alternative job. This present value should be net of any costs of job search.

Clearly, for a given leave length, utility increases monotonically with the wage. Thus, higher utility curves are preferred. However, utility is not monotonic in leave length. The optimal leave length balances the considerations of affordability and the direct utility of time with the newborn. An interior optimal leave length for a given wage (i.e., neither no leave nor infinitely long leave) implies that these iso-utility curves must have the drawn U-shape.

Given these utility curves, we can formally describe a new mother's choices among the available options. By assumption, the alternative job is always available. In particular, it is available at any interval since the birth of a child. Thus, any point along the  $w_a$  line (corresponding to the wage at the alternative job) is in the "budget set" (i.e., a possible choice).

If the pre-pregnancy employer places no restrictions on the length of the leave, then any point along the  $w_o$  line is also in the budget set. In that case, the new mother will return to work—at her pre-pregnancy job, at her pre-pregnancy wage—at the point (leave length) given by the tangency between the  $w_o$  line and a utility curve (as drawn Point E, 18 weeks). Given her wage,  $w_o$ , any other leave (whether shorter or longer) is less preferred than the amount of leave defined by the tangency. Alternatively, if the pre-pregnancy employer forces the new mother to quit her pre-pregnancy job (in terms of Figure 1, no part of the  $w_o$  line is in the budget set), when she returns to work, it will be at the alternative job with wage  $w_a$ . The return will occur at the point (leave length) given by

the tangency between the  $w_a$  line and a utility curve (as drawn Point L, 24 weeks).

Between these extreme cases, most employers offer limited leave. Thus, the woman can return to the alternative job after a leave of any length (i.e., the budget set includes the entire line at  $w_a$  from no leave to an infinitely long leave) or return to the current job after a leave not to exceed the employer's offer (i.e., the budget set also includes the line at  $w_o$  from no leave to the employer's maximum offered leave). How would the new mother, facing alternative wage  $w_a$ , behave when offered a limited leave? How would a maternity-leave statute guaranteeing return to the prebirth employer affect her choices? There are three cases:

Case I.1: If the employer offers a sufficiently short leave from work, the new mother would prefer the unlimited time away from the workplace, but lower wage, of the alternative job. As drawn in Figure 1, the new mother is indifferent between Point L (the unconstrained leave length and return to the alternative job) and Point B (a leave of only 6 weeks and return to the prepregnancy job). When offered any leave shorter than 6 weeks (i.e., on the line segment AB), the woman chooses to quit her job and return to the alternative job at 24 weeks. If a maternity-leave statute guaranteed a leave of up to 12 weeks (Point C), she would take the 12 weeks of leave and then return to her prepregnancy employer, even if 12 weeks was less than her unconstrained leave choice. For these women who were previously offered such short leaves that they quit and returned to an alternative job, a maternity-leave statute can increase job continuity.

Case I.2: If the employer offers a longer leave (but shorter than the maternity-leave statute's guaranteed leave of 12 weeks; i.e., on the line segment BC), the new mother will take the longest allowed maternity leave. She will then return to work at the prepregnancy employer. A maternity-leave statute allows these women to take longer leaves, but does not affect their job continuity. They would have returned to their prebirth employers even without the maternity-leave statute.

Case I.3: If the employer offers a leave longer than the maternity-leave statute's guaranteed leave (e.g., on the line segment DF, 12 or more weeks), the new mother will again take the shorter of the longest allowed maternity leave and her ideal leave (Point E, 18 weeks). She will then return to work at the prepregnancy employer. For such women, a maternity-leave statute affects neither job continuity nor leave length.

Thus, as drawn in Figure 1, the maternity-leave statute affects job continuity only for Case I.1.

Another set of possibilities (Case II) exists for women who either have strong preferences for remaining at home or who have alternative wage offers that are close to the original wage. For these women, a maternity-leave statute might not affect their decision to change employers after giving birth. Some women's preferences for home time are so strong they choose not to return to work for several years (e.g., until their children enter preschool). Other women face alternative wages that are close to the wage on the current job. For these women, the cost of quitting is much smaller. Such women forgo not the difference between  $w_o$

and  $w_a$  but the smaller difference between  $w_o$  and  $w_b$ . The utility curve tangent to this higher alternative wage (labeled  $U_b$  in Figure 1) cuts the  $w_o$  curve to the right of (later than) the statutorily guaranteed leave of 12 weeks (Point C). As drawn, that intersection occurs at 15 weeks (Point D). For a new mother with this alternative wage, job continuity is unaffected by a maternity-leave statute.<sup>4</sup> Even with the leave guaranteed by the maternity-leave statute (Point C, 12 weeks), she prefers the longer leave and returns to the alternative job (Point H, 22 weeks).

In the empirical work that follows, we estimate the percentage of new mothers who return to their prepregnancy employers (i.e., Cases I.2 and I.3) and the percentage who do not return to their prepregnancy employers (i.e., Cases I.1. and II). We estimate these percentages separately for women who were employed part-time and full-time before delivery, as part-time workers are less likely to qualify for the FMLA's family leave. We also examine postdelivery work for women who were not in the labor force during pregnancy.

## DATA AND METHODS

In this section, we describe a method for combining data from the National Longitudinal Survey of Youth (NLSY) and the June Current Population Survey (CPS) to estimate longitudinal patterns and labor supply for a representative population. The NLSY data are longitudinal and allow us to determine if a particular individual changes jobs. The NLSY sample, however, is not representative of new mothers. In contrast, the CPS has a representative sample of the U.S. population (and thus of new mothers), but does not follow individuals for an extended period of time. Therefore, we combine data from the two sources to yield population estimates of job continuity.

The NLSY is a longitudinal sample of young people sponsored by the U.S. Department of Labor, Bureau of Labor Statistics. The original sample was drawn in 1979 from 14- to 21-year-old men and women. Approximately 12,000 individuals were selected using a sampling scheme that oversampled blacks, Hispanics, and poor whites. This original sample has been interviewed annually since 1979. We use data through the 1990 interview, which preceded the federal and most of the state maternity-leave statutes. Consistent with the NLSY's purpose of measuring labor market dynam-

### 4. The exhaustive analysis proceeds as follows:

Case II.1: For most maximum-leave durations, the new mother would prefer the unlimited leave, but lower wage, of the alternative job. As drawn in Figure 1, the new mother is indifferent between Point H (the unconstrained leave length and return to the alternative job) and Point D (a leave of only 15 weeks and return to the prepregnancy job). When offered any leave shorter than 15 weeks (i.e., on the line segment AD), the woman chooses to quit her job and to return to the alternative job after 24 weeks. Even with a maternity-leave statute, such a woman still chooses to quit her prepregnancy job. Thus, a maternity-leave statute affects neither her job continuity nor her time away from the workplace.

Case II.2: For longer maximum leaves (along the line segment DF, 15 to 18 weeks), the new mother will take the longest allowed maternity leave and then return to work at the prepregnancy employer. Again, the maternity-leave statute affects neither her job continuity nor her leave length.

ics, at each interview, an Employer Supplement collects information on each job held since the previous interview. Among the information collected is hours worked and whether this job is the same as that reported in the previous interview. Thus, for new mothers in the NLSY sample, we can track job continuity through time.

From the NLSY we draw two samples. The first sample comprises one observation for every birth to every woman age 19 or over (i.e., every woman age 18 or over a year before the birth) during the sample period, 1978–1990. We use this first sample to describe the labor market choices of new mothers.

We also draw a second comparison sample comprising one observation every four months for every woman age 19 or over in the NLSY, who did not give birth to a child. We use this second sample to describe the labor market choices of all women, regardless of whether they gave birth. Especially for young workers, job transitions are quite common. Not all of the job transitions observed among new mothers are due to the arrival of the new child; some job changes would have occurred in the absence of childbirth. We can use the job transitions of demographically similar women to estimate the *excess* job-change rates due to the birth of a new child.

Although the NLSY has longitudinal job-change data, it poses four problems for computing current, representative estimates of maternity leave. First, the NLSY is not a simple probability sample, but a stratified sample that deliberately oversampled blacks, Hispanics, and poor whites. This is simply corrected using the initial sample weights (which also correct for differential nonresponse at the first interview). Second, the available data include women who gave birth between 1978 (retrospective answers at the 1979 interview) and 1990. Because of the large time-series changes in behavior, a simple average over all NLSY births will not describe the behavior of more recent mothers. Third, the NLSY is a cohort sample that enrolled women who were aged 14–21 in 1979 and thus aged 25–33 in 1990; we have no information on women giving births at later ages. Finally, the sample is smaller than we would like, making it difficult to use simple sample means to compute precise estimates of behaviors for subgroups.

To address these problems, we employ a two-stage strategy. In the first stage, we estimate a system of weighted logistic regressions on the full NLSY sample. The regressors explicitly control for the nonrepresentativeness of births to the NLSY sample (black, Hispanic, age, and calendar year) as well as for the demographic dimensions of substantive interest (parity, education, and time period). The weights control for nonresponse and stratified sampling. In the second stage, we use the regression model to predict labor force behavior for a sample with the demographic characteristics of all recent mothers drawn from the 1990 June CPS.<sup>5</sup>

5. The correction is not perfect because some of the predictions are out of sample. In 1990, the oldest mother in the NLSY was 32. Births to women older than 32 increased over this period, and they represent a demographically interesting phenomenon. In the CPS sample (for 1990), more than 92% of all births were to women age 32 and younger. Over half (58%) of the

To examine transitions across labor force statuses and over jobs, we cross-classify labor force status before pregnancy (12 months before the birth of a child) and following childbirth (6 or 18 months after the birth of a child). We chose 12 months before the birth as a point at which labor supply was not affected by the pregnancy. We examine employment at six months after the birth, because that interval is sufficiently long that essentially all women who will return to their prebirth employers have done so (Klerman 1993; Klerman and Leibowitz 1994). We could not examine employment at an substantially earlier time (e.g., three months) because the NLSY does not distinguish well between those who are employed and on leave and those who are employed and at work (see Klerman 1993). To be certain of capturing all postnatal returns to the labor force, we also consider employment 18 months after the birth. At this longer interval, however, some women who initially returned to their prebirth jobs will have subsequently changed to new jobs. Thus, the later cutoff will obscure the extent of true maternity leaves in the pre-FMLA period.

Labor force status before childbirth is classified as no work, part-time work, or full-time work (usual hours 35 or more hours per week). Labor force status after childbirth is classified as no work, part-time work at the same job, part-time work at a different job, full-time work at the same job, or full-time work at a new job. Cross-classifying prebirth and postdelivery statuses yields 13 cells ( $3 \times 5$ , less the two impossible cases: no work before to full-time work at same job after, and no work before to part-time work at the same job after).

Our model suggests that the choices among each of these prebirth and postbirth labor market statuses are made simultaneously. As a computational strategy, we model this joint choice as a series of 12 binary logistic regressions. First, we estimate a binary logit model for whether the woman worked before pregnancy. For each woman who worked before pregnancy, we estimate a binary logit model of whether she worked part-time or full-time. At the next level, we estimate three binary logit models for whether the woman worked after childbirth: (1) she did not work before pregnancy, (2) she worked part-time before pregnancy, or (3) she worked full-time before pregnancy. At the next level, for each woman who worked after childbirth, we estimate three binary logit models for whether she worked part-time or full-time: no work before childbirth, part-time work before childbirth, and full-time work before childbirth. For each woman who worked both before and after childbirth, we estimate four binary logit models for whether she returned to the same job.

We estimate these 12 weighted logistic regression models using regressors that were available in both the CPS and the NLSY and that were unchanging characteristics of the

remaining births were to women age 35 or younger. For those age 35 or younger, the prediction is not far out of sample (one or two years). Finally, the regression models include linear and quadratic terms in age. Thus, although there will be some bias due to out-of-sample prediction, it is not likely to be large. Limited experimentation with the age specification reveals only moderate sensitivity to the out-of-sample predictions.

mothers. We selected variables using a two-step procedure. First, we entered the following variables both in levels and interacted with a dummy variable for first birth: black, Hispanic, age, age squared, year of birth, national unemployment rate, high school dropout, some college (i.e., 13 or more years of education), college graduate (16 or more years of education), never married, divorced or widowed, married, and an intercept. Second, we reestimated each regression with a pruned list of regressors. The following variables were always included in the second-stage regression: black, Hispanic, calendar year, first child, age of the mother at the birth, and the intercept. Other variables with a *t* statistic less than 1.28 ( $p = 0.50$ ) were dropped from the list of regressors in the second step.<sup>6</sup> Sample means and detailed regression results are available from the authors on request.

These 12 logistic regressions contain many parameters that interact in complicated ways to yield the observed statuses. To draw out these implications in a scale that is more easily interpreted, we present simulations of the distribution of women across dynamic labor force behaviors. To extrapolate to all mothers, we selected all women in the 1990 June CPS who had given birth in the last 36 months and who were age 19 or over at the birth of the child (so that they were at least 18 a year before the birth). Comparing the characteristics of representative new mothers from the CPS with those of the new mothers in the NLSY data, we find, as expected, that the births represented in the NLSY sample occurred at an earlier age than those in the CPS sample (more than a three-year difference). The NLSY also overrepresents blacks, high school dropouts, those who were never married, and first births.

To make the predictions for a nationally representative sample, we used the estimated parameters from the system of logistic regression models to estimate the probabilities of each choice at each node for each new mother in the CPS sample. Finally, for each observation in the CPS sample, we multiplied the probabilities at each dichotomous decision point to yield the probability of each final state. The estimates we present are weighted averages of these predictions across the CPS sample. The extrapolation to the CPS sample does matter: Compared with the NLSY, the CPS has a smaller share of women who worked neither before pregnancy nor after childbirth, a smaller share of women who worked full-time before pregnancy and then stopped working, and a larger share of women who worked full-time before and after pregnancy.

These results should not be interpreted as estimating invariant probabilities of job continuity conditional on pre-childbirth employment status. We use the regressions merely to describe pre-FMLA behavior. The regressions allow an approximate correction for the nonrepresentativeness of the NLSY as a sample of recent mothers. The theoretical model

6. Some women had several births over the 12 years and thus appear in our sample more than once. We have made no corrections for any induced correlation because it would cause our computed standard errors to be too small and our *t* statistics to be too large. Thus, our two-stage procedure will include some variables that would not be included if we had pruned the regressors with the standard errors that correct for the multiple observations.

assumed that the prechildbirth job was not affected by the FMLA. The FMLA might affect not-yet-pregnant women's ranking of jobs: Employers that previously offered no leave or short leaves now must offer the statutory leave, and the jobs they offer will become more attractive. Some women may choose to work more hours in order to be protected by the FMLA. An employer that is forced by legislation to offer a longer leave may otherwise adjust its compensation package. Such changes in jobs and in women's choices of jobs might also affect the unobserved characteristics of those employed before the birth of the child.

In particular, some women who previously had not worked before pregnancy (or had not worked full-time) might be induced to work because the FMLA offered longer leaves. Assuming time consistency, all such women would have job continuity. Beyond the direct effect of the FMLA, this indirect effect might further increase the effect of the FMLA on job continuity. Thus, our results may not be entirely appropriate for predicting what job continuity would have been for those employed full-time after the FMLA, if the FMLA had not been in place.

Nevertheless, the results address the posed questions. First, what was job continuity in the pre-FMLA period? Second, among those who were employed full-time before the FMLA and quit their jobs at the birth of a child, how many would not have quit if the FMLA had been in place?

## RESULTS ON JOB CONTINUITY

Table 1 shows work status after childbirth (the columns) cross-tabulated by work status before pregnancy. We obtained the estimates for new mothers shown in the top panel using the logit regressions on NLSY to make predictions for women with the characteristics observed for new mothers in the CPS in 1990. The first three rows of the table index whether a woman was not employed, employed part-time, or employed full-time 12 months before giving birth. The first five columns show employment status following delivery. The columns distinguish whether the woman was not employed, employed part-time with same (as pre-pregnancy) job, employed part-time at a different job, employed full-time at the same job, or employed full-time at a different job. The second five columns show the postbirth employment status conditional on the prebirth employment status.

The first panel of Table 1 shows that nearly one third of women (31.7%) were not working before the birth of their child. These women are unlikely to be labor force participants when their infant is 6 months old: Only 19.4% (= 100.0% - 80.6%) were at work six months after delivery. The probability of working was higher for women who worked part-time before the birth (46.8% = 100.0% - 53.2%) and even higher for women who worked full-time before the birth (71.8% = 100.0% - 28.2%). Overall, about half of new mothers (48.5% = 100.0% - 51.5%) worked when their infant was 6 months old.<sup>7</sup>

7. This estimate for 1990 is close to Klerman and Leibowitz's (1994: table A3) June CPS-based estimate of 45.3% for 1986-1988. Furthermore, work among new mothers continued to increase between 1986-1988 and

TABLE 1. JOB CONTINUITY FOR NEW MOTHERS AND FOR DEMOGRAPHICALLY SIMILAR NONMOTHERS

Work Before Pregnancy	Work Status After Childbirth (%)						Percentage of Prepregnancy State					
	None	Part- Time Different Job	Part- Time Same Job	Full- Time Different Job	Full- Time Same Job	Total	None	Part- Time Different Job	Part- Time Same Job	Full- Time Different Job	Full- Time Same Job	Total
<b>Women Who Gave Birth, 18-Month Interval<sup>a</sup></b>												
None	25.5	2.7	—	3.4	—	31.7	80.6	8.6	—	10.8	—	100.0
Part-time	14.4	4.6	1.5	6.0	0.6	27.0	53.2	16.9	5.5	22.1	2.3	100.0
Full-time	11.6	2.2	6.3	2.5	18.8	41.3	28.2	5.2	15.3	5.9	45.4	100.0
Total	51.5	9.4	7.8	11.9	19.4	100.0						
<b>Women Who Did Not Give Birth, 18-Month Interval<sup>a</sup></b>												
None	18.1	4.7	—	7.6	—	30.4	59.6	15.5	—	24.9	—	100.0
Part-time	3.4	3.7	4.0	7.8	3.7	22.6	15.0	16.5	17.8	34.2	16.4	100.0
Full-time	4.9	2.9	12.6	0.8	25.7	46.9	10.5	6.3	26.8	1.8	54.7	100.0
Total	26.5	11.4	16.6	16.2	29.4	100.0						
<b>Women Who Gave Birth, 30-Month Interval<sup>b</sup></b>												
None	20.6	5.3	—	5.8	—	31.7	65.0	16.8	—	18.2	—	100.0
Part-time	13.8	5.5	3.1	3.3	1.3	27.0	51.0	20.4	11.5	12.1	4.9	100.0
Full-time	8.6	2.9	11.4	3.0	15.5	41.3	20.8	7.0	27.6	7.2	37.5	100.0
Total	43.0	13.7	14.5	12.0	16.8	100.0						

Notes: See the text for the definitions of "nonmothers" and "women who did not give birth." Weighted tabulations from the June 1990 CPS using a logistic regression model estimated using the NLSY. See the text for the details of the procedure. Full-time work is 35 or more hours per week.  $N = 5,793$ . Row and column totals may not equal summed entries because of rounding.

<sup>a</sup>The 18-month interval is 12 months before and 6 months after birth.

<sup>b</sup>The 30-month interval is 12 months before and 18 months after birth.

Among women who worked during pregnancy, the high percentage who worked when their child was 6 months old suggests that many women returned to the job they had before the pregnancy. To examine how job continuity differs by level of prepregnancy work status, we show in the five columns on the right of Table 1 distributions of postdelivery work status separately for women who worked full-time, part-time, or not at all before pregnancy. Part-time workers were unlikely to return to the job they held before becoming pregnant: Less than 10% ( $7.8\% = 5.5\% + 2.3\%$ ) did so. More than half (53.2%) had not returned to work by the time their child was 6 months old. Most of those who were working part-time before pregnancy changed jobs if they worked after delivery.

In contrast, among women who worked full-time before the birth, levels of job continuity were quite high. More than 60% ( $60.7\% = 15.3\% + 45.4\%$ ) of these women returned to

their prepregnancy jobs on a part-time or full-time basis. The denominator for this computation includes women who have not returned to work by six months. An alternative denominator considers only women who were working full-time both before and after the birth. Almost all of them ( $88.7\% = 45.5\% / (5.9\% + 45.4\%)$ ) returned to their prepregnancy jobs. Thus, among women who work full-time both before and after the birth, the FMLA's guarantee of the right to return to the preleave job merely codifies existing practice. Even without the protection of the FMLA, relatively few of the new mothers with this high labor market commitment (those who worked full-time before the birth of their child) did not return to their prepregnancy jobs. This does not mean that they might not have preferred longer leaves or that some egregious cases have not occurred.

How does this level of job mobility compare with the general experience of demographically similar women who did not give birth? For comparison, we used the NLSY data to estimate change in employment status and job over an 18-

1990. Thus, our two-step methodology appears to model the level of employment well.

month period (equivalent to the 12 months before pregnancy and 6 months after childbirth in the top panel of Table 1) for all women who did not give birth but who were demographically similar (in terms of race/ethnicity, age, education, parity before the current birth) to new mothers.<sup>8</sup> We then used this equation to make predictions for women with the characteristics of the new mothers observed in the CPS.

The second panel of Table 1 shows that the control group women who worked part-time also changed jobs frequently. After an interval of 18 months, only about a third of part-time workers were working at the same job ( $34.2\% = 17.8\% + 16.4\%$ ). This figure is greater than the comparable figure for new mothers (7.8%).

Job stability was much greater for women who worked full-time. For the comparison group, over 80% ( $26.8\% + 54.7\% = 81.5\%$ ) of the women who were working full-time at one point worked at the same job 18 months later. Again, this figure is greater than the comparable figure (60.7%) for new mothers. Subtracting the job continuity rate for this comparison group from the rate for new mothers, we compute a deficit in job continuity (or excess turnover) of 20.8% for women who began the period working full-time. Thus, although about 40% of new mothers who worked full-time before pregnancy did not return to their prebirth employers after pregnancy, half of this turnover would have been expected even if they did not have a birth. The other half appears to be caused by the birth of the child.

We can compute a similar excess turnover rate for those who worked full-time both before and after the birth of the child. We have already noted that 88.7% of such new mothers return to their prepregnancy employers. In our control group over an equivalent 18-month period, the corresponding job continuity rate is 96.8% ( $= 54.7\% / (1.8\% + 54.7\%)$ ). Thus, the excess turnover rate is 8.1%.

Like any other change in circumstances (e.g., marriage), one would expect new motherhood to lead to excess turnover. With the birth of a child, jobs that offer more flexible hours or on-site day care become relatively more attractive. These changes in preferences may lead to changes in the ranking of jobs (i.e., which job is most attractive). Thus, even if the prechildbirth job were still available (and the alternative job had been available before childbirth), a new mother might change from one full-time job to another full-time job with the birth of a child. Our model does not explicitly incorporate such nonwage job characteristics, but provides another reason to expect excess turnover among recent mothers.

8. We created the comparison group by generating a pseudo-observation every four months beginning at the start of the NLSY work history calendar (i.e., a year before the first interview) for which the woman was age 18 or over. We dropped any pseudo-observation with a reference date within 12 months of a birth (before or after) from the comparison file. We then classified each of these pseudo-observations by employment status 12 months before and 6 months after the reference date of the pseudo-observation and job continuity between those two dates (i.e., an 18-month interval as in the birth sample). We dated covariates equivalently to those for the birth sample (age at the reference date, parity at the beginning of the interval, and so on).

No doubt, some of the observed excess turnover is due to such changes in preferences for job characteristics with the birth of a child. Some of the excess turnover is also due to very short allowed maternity leaves in the pre-FMLA period. Further consideration of the results suggests that the former explanation is more likely. The obvious effect of a maternity-leave statute on job continuity is that some women who before the FMLA quit and returned to a different job (i.e., Case I.1 and Case II) will, after the FMLA, return to their prechildbirth jobs (i.e., Case I.1). Among women who worked full-time before the pregnancy, only 11.1% ( $= 5.2\% + 5.9\%$ ) were working at a different job six months after the birth. The comparable figure for the control group is only slightly lower: 8.1 ( $= 6.3\% + 1.8\%$ ). Thus, the excess rate of job switching among new mothers is only 3.0%. Even if all of this job switching were caused by very short allowed leaves, the scope for a maternity-leave statute to affect job continuity would be small. Adding in the possibility that, even with a maternity-leave statute, some women would choose to change jobs after a birth, the effect of a maternity-leave statute on job continuity among this group is trivial.

Another interpretation is possible. Our model emphasizes that new mothers often must choose between taking a shorter leave than they would like in order to return to their pregnancy job and taking a longer leave and then returning to a different job at a lower wage. Perhaps some new mothers who would return to their prepregnancy employers if a leave of 12 weeks were guaranteed by statute return to the labor force shortly after the six-month cut-off used in the first panel of Table 1. To explore this possibility, the third panel of Table 1 reports the work status of new mothers 18 months after the birth (the total interval is 30 months). The percentage of all mothers who worked 18 months after the birth was higher than that of mothers who worked 6 months after the birth ( $57.0\% = 100.0\% - 43.0\%$  vs.  $48.5\% = 100.0\% - 51.5\%$ ), as was the percentage among women who worked full-time before pregnancy ( $79.2\% = 100.0\% - 20.8\%$  vs.  $71.8\% = 100.0\% - 28.2\%$ ). Among women who worked full-time before the pregnancy, however, the percentage working full-time after the birth declined between 6 and 18 months ( $44.7\%$  vs.  $51.3\%$ ). Again, at this longer interval, most women ( $83.8\% = 37.5\% / (7.2\% + 37.5\%)$ ) who were working full-time before and after the birth were working at the same job.

That few full-time workers returned to work at a new job in the interval between 6 and 18 months postpartum suggests that few women who wanted to return to their pregnancy jobs were prevented from doing so because of lack of maternity leave. It is possible that, given that they could not take long leaves or were denied the right to any leave, some new mothers chose to stay away from the workplace even longer than 18 months and that with a maternity-leave statute they would have returned within 12 weeks. It seems implausible that the implied configuration of preferences would be appropriate for more than a small fraction of women who worked full-time before the birth of their child and had not returned to work by 18 months after the birth. For intervals greater than 18 months after childbirth, the mother faces a fundamentally



TABLE 2. JOB CONTINUITY FOR NEW MOTHERS, BY PARITY

Work Before Pregnancy	Work Status After Childbirth (%)						Percentage of Prepregnancy State					
	None	Part- Time Different Job	Part- Time Same Job	Full- Time Different Job	Full- Time Same Job	Total	None	Part- Time Different Job	Part- Time Same Job	Full- Time Different Job	Full- Time Same Job	Total
<b>First Birth</b>												
None	16.0	4.4	—	1.9	—	22.3	71.8	19.9	—	8.3	—	100.0
Part-time	5.0	11.3	1.7	7.5	0.0	25.5	19.6	44.4	6.7	29.3	0.0	100.0
Full-time	18.6	3.5	8.9	3.5	17.7	52.2	35.7	6.6	17.1	6.7	33.8	100.0
Total	39.6	19.2	10.7	12.8	17.7	100.0						
<b>Second Birth</b>												
None	25.3	2.4	—	4.2	—	31.9	79.3	7.4	—	13.3	—	100.0
Part-time	20.8	1.4	1.8	5.2	1.1	30.2	68.9	4.6	5.9	17.1	3.5	100.0
Full-time	8.5	1.6	5.6	2.6	19.8	38.0	22.3	4.1	14.7	6.7	52.1	100.0
Total	54.5	5.3	7.4	12.0	20.8	100.0						
<b>Third Birth</b>												
None	36.2	1.3	—	4.2	—	41.7	86.8	3.0	—	10.1	—	100.0
Part-time	17.2	0.9	0.9	5.3	0.7	25.0	68.7	3.8	3.8	21.0	3.0	100.0
Full-time	7.6	1.4	4.3	1.2	18.8	33.3	22.9	4.2	12.9	3.6	56.3	100.0
Total	61.0	3.6	5.2	10.7	19.5	100.0						

Notes: Weighted tabulations from the June 1990 CPS using NLSY logistic regression model. Full-time work is 35 or more hours per week.  $N = 5,793$ . Row and column totals may not equal summed entries because of rounding.

different employment decision; child care options differ for toddlers and infants, and employers are unlikely to offer maternity leave for absences of more than 18 months. Therefore, Table 1 provides indirect evidence that a maternity-leave statute is unlikely to have sizeable effects on job continuity.

### DIFFERENCES BY PARITY AND EDUCATIONAL LEVEL

In this section, we summarize simulations of labor force behavior that highlight differences in participation rates by parity and by educational level (full results are available from the authors upon request). These simulations compare the behavior of mothers in one category (e.g., first births) with that of those in another category (e.g., second births). In each case, we allow all the characteristics of the new mothers to change. Thus, for example, the results for new mothers having their second birth also include the effects of all other differences between women at their first births and women at their second births (e.g., greater age).<sup>9</sup>

9. Alternatively, one could examine partial effects by allowing only one covariate at a time to change. Results of such simulations are available on request. Unlike the results in the body of the paper, these simulations correspond to the partial derivative interpretation usually given to regression coefficients. Nevertheless, the total effects in the body of the paper are more appropriate for our purposes. The partial derivative interpretation implicitly assumes that the covariate in question is exogenous. It seems more likely that age at the birth, parity (i.e., number of children), and labor market status (including job continuity and the length of a maternity leave) are chosen together. If so, then estimating the partial effect of age at birth on

We begin by considering differences across parities (Table 2). Before the birth of the first child, nearly 80% (77.7% = 100.0% - 22.3%) of all women were employed, and more than half (52.2%) of all women were employed full-time. After the first child was born, about 60.4% (100.0% - 39.6%) of women were employed and only 30.5% (= 12.8% + 17.7%) were employed full-time when the child was 6 months old. The prebirth labor supply for the second birth is measured 12 months before the delivery date of the second child. Employment rates were lower 6 months after the first birth than 12 months before the second birth. Rates of nonemployment declined about 8 percentage points, but rates of full-time employment were still 14 percentage points lower than before the first birth.

These results by parity reveal considerable evidence of heterogeneity among women. Before the birth of their first child, more than three quarters of all women (77.7%) were working; before the birth of the second child, the figure was about 10 percentage points lower (68.2%). The contrasts are even stronger for full-time work before pregnancy, which declined from 52.2% to 38.0%. Among those who worked full-time before their second pregnancy, however, job continuity was considerably higher (77.7% working and 66.8% at the same job) than among those who worked full-time before their first birth (64.3% working and 50.9% at the same

job continuity would require instrumental variable methods and exclusion restrictions. Such exclusion restrictions are not immediately apparent.

job). Finally, part-time work, which grew from a pre-pregnancy level of 25% before the first birth to about 30% following the first birth, declined markedly after the second birth (from 30.2% to 12.6%). Also consistent with this heterogeneity interpretation, the percentage of new mothers working and working full-time decreased as the number of children increased, but the percentage of new mothers working full-time and returning to full-time work with the same job increased with parity.

In summary, at the first birth, new mothers appear to divide themselves into nonworkers and workers. Workers are likely to work after subsequent births as well. If a woman worked before a pregnancy when she already had children at home (i.e., second and later births), she is likely to be working six months after a subsequent birth.

Comparing results across educational groups, both before and after the pregnancy, we find that high school graduates were much more likely to work than high school dropouts (see Klerman and Leibowitz 1993 for detailed results). Nearly half of high school dropouts did not work before the birth, in contrast to only 21% of high school graduates. Furthermore, high school graduates were much more likely to continue working after the birth of a child. Six months after the birth, 73% of dropouts but only 47% of graduates were not working. Conditional on returning to full-time work, high school graduates were more likely to return to the same job.

College graduates were as likely as high school graduates to be working full-time before the pregnancy. Conditional on full-time work status, their rates of return to work were similar to those of high school graduates. College graduates were somewhat more likely than high school graduates to be working part-time rather than not working after the birth of a child.

## CONCLUSION

Over the last quarter century there have been radical changes in the work patterns of new mothers. In the early 1970s, work among new mothers was a rarity. Today nearly half of all mothers of 1-month-old children are employed. Most of them are not at work, but instead are on maternity leave. Partially in response to these changes in labor market patterns, legislation at the federal and state level now requires employers to guarantee that women may return to their old jobs after a maternity leave of several months (three in the federal statute, one to four in the state legislation).

Our analyses of work patterns of new mothers show high levels of job continuity (i.e., employment at the same job) even before this legislation. Sixty percent of women who work full-time before the birth of a child continue to work at the same job after the child is born. Among women who work full-time both before and after childbirth, the comparable figure is nearly 90%. There is some turnover even among demographically similar women who do not give birth. Furthermore, even with a strong maternity-leave law (i.e., granting the right to long leaves), some excess turnover would be expected. Finally, employment rates increase only slightly between 6 and 18 months after the birth. It is hard to

imagine that many women who are not working 18 months after the birth of a child would be induced by a maternity-leave statute to return to their prebirth employers by 12 weeks. Therefore, an FMLA would not have had large effects on job continuity among those already working before the FMLA.

If the FMLA causes employers to reduce women's wages to compensate for added costs imposed by the FMLA, labor supply may fall. On the other hand, the FMLA's guarantee of job continuity after a maternity leave of moderate length could also lead some women to increase their labor supply before pregnancy. Given the existing high levels of prepregnancy employment, additional leave taking attributable to more women working because of the FMLA is likely to be of second order. Further research on such indirect effects of the FMLA would be useful.

Our conclusion that the effect of the FMLA on job continuity is likely to be small is consistent with other analyses. This analysis shows that job continuity was already quite high before the FMLA. Other analyses (e.g., Klerman 1993; Klerman and Leibowitz 1994) have shown that there was also a considerable amount of leave before the FMLA. Finally, several analyses have shown that the coverage of the FMLA is far from universal. To qualify for the FMLA, a new mother must have at least 12 months of full-time tenure with an employer with more than 50 employees. Each of these conditions rules out many new mothers. Thus, even among our sample of full-time workers before pregnancy, about half would not be covered by the FMLA (Klerman and Leibowitz 1993; Lenhoff and Becker 1989).

For those women who are covered, family-leave legislation may affect other dimensions of women's labor market behavior. As we emphasized in our model, it is possible that, before the new laws, women would have liked to have taken longer leaves after the births of their children, but that employers strictly limited the amount of leave. Given the decision between taking very short leaves and quitting their jobs, women may choose the short leave. Perhaps given the right under the new laws to longer job protected leaves, new mothers will take longer leaves (see Klerman and Leibowitz 1997; and Waldfogel 1996). Over the long run, a right to a 12-week maternity leave may affect women's lifetime labor market choices. Knowing that they would not have to quit their jobs in order to spend a few months with a newborn child, they might work more. Both because they work more and because they do not forfeit their firm-specific human capital at the birth of a child, their wages might also be higher (see Ruhm 1997, 1998; Ruhm and Teague 1997; Waldfogel 1996). Such other effects of maternity-leave laws are worthy of further study.

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