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WOMEN, WORK AND CHILDBEARING

By

Mary K. Hamman

A DISSERTATION

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Women, Work and Childbearing

By

Mary K. Hamman

The growing work-family literature provides extensive workplace level evidence of positive relationships between working-time flexibility policies and practices and work and family outcomes. Yet, little is known about the role of flexible policies and practices in the labor market as a whole or with respect to behavioral rather than psychological outcomes. This dissertation investigates relationships between availability of paid and unpaid leave and expected and actual childbearing, maternal employment and early investments in child health through well-baby care.

In Chapter 1, I provide a broad, cohort level analysis of birth expectations. Birth expectations may foreshadow future fertility and shape current behaviors, including early career and educational choices. Chapter 1 evaluates these two possibilities. Findings indicate women do not anticipate their future childbearing very well. Also, the marked differences in occupational characteristics between mothers and non-mothers, which are well known in the literature and apparent in my analysis, indicate many women do eventually sort into more "family friendly occupations". Yet, my findings imply sorting occurs after childbearing rather than before.

Chapter 2 extends the findings in Chapter 1 by examining relationships between availability of paid and unpaid leave in the pre-birth job and other job characteristics and mothers' decisions to maintain or quit those jobs. I examine all quits from one year prior to pregnancy through 1.5 years following the birth and distinguish between quits to leave the labor force and quits to start a new job. Findings indicate most labor force exits are

concentrated in the three months either side of the birth. Most job changing happens just before and during early pregnancy and would be missed in a shorter analysis interval. Women eligible for FMLA leave are less likely to quit their jobs for any reason prior to the birth and those who work part-time are less likely to change jobs before the birth. I do find women without paid vacation are more likely to change jobs prior to the birth but overall the evidence of pre-birth sorting into jobs with paid leave is not very compelling.

Chapter 3 also examines the effect of paid and unpaid leave on mother's behavior, but in this chapter my focus shifts from employment decisions to child outcomes. The American Academy of Pediatrics (AAP) recommends children receive eight well-baby visits at regular intervals over the first two years of life. I estimate the average baby receives just over 2. Cost sharing for well-baby care under public and private insurance is very low. The fact that compliance rates are so low despite the low cost of care suggests other factors, such as time constraints, may be especially important. In general my findings imply the type of job a mother holds matters; paid and unpaid leave may enable mothers in certain types of jobs to take their babies to the doctor but in others they appear to have no relationship or even a negative relationship with well-baby care use.

In total, the results of this dissertation suggest access to paid leave may help women to maintain job matches during childbearing years and improve health outcomes for young children by encouraging mothers to take their children to well-baby care. Yet, the extent to which paid and unpaid leave influence outcomes of interest may depend on the context of the job. Furthermore, despite the potential benefits of paid leave, I find little evidence to suggest women actively seek jobs with paid leave before they have a child.

Dedication

This dissertation is dedicated to my grandmother, Bea Hoffman, who was a single, working mother in the 1950s.

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Introduction

Summary of Dissertation Research

Across the labor supply, fertility, and child development literatures, researchers acknowledge the interrelationships between women's employment, childbearing and childrearing decisions. Women who have more children also tend to spend less time in paid employment. Those who have access to affordable childcare are less likely to work outside the home than those who do not. Maternal employment may improve child outcomes by increasing household income but it also reduces her time available to spend with children. Numerous studies examine these tradeoffs. Yet less is known about the role of governmental and workplace policies that may help women to combine work and non-work roles.

The growing work-family/work-life literature provides extensive case study and empirical evidence of positive relationships between work outcomes, such as job satisfaction, employee retention, and family outcomes and the availability of flexible working-time policies and practices such as paid time off, part time work and flexible schedules. Most of these studies are at the individual workplace level; less is known about the role of these policies and practices in the labor market as a whole or with respect behavioral rather than psychological outcomes.

The fact that the work-family literature presents workplace level evidence of the importance of flexible working-time policies and practices and finds linkages between flexible working-time policies and practices and psychological outcomes suggests these policies and practices may influence employment decisions in the labor market as a whole and objectively observable behaviors, as well. This dissertation investigates

relationships between availability of paid and unpaid time off, including FMLA leave, and expected and actual childbearing, maternal employment and early investments in child health through well-baby care.

In Chapter 1, I provide a broad, cohort level analysis of birth expectations. Birth expectations may foreshadow future fertility and shape current behaviors, including early career and educational choices. Chapter 1 evaluates these two possibilities. Substantial changes in childbearing behavior, and fertility timing in particular, occurred across cohorts born in the early 1940s through the 1970s. I examine the trends in actual and expected childbearing across these cohorts to determine whether or not secular changes in childbearing behavior were anticipated. Although individual cohorts' expectations of completed family size approximate their actual completed family size, I find the trend in expectations across cohorts does not anticipate trends in actual childbearing. Furthermore, cohort expectations did not foreshadow the increases in childlessness and single child families or the extent of fertility delay.

To examine the relationship between expectations of future childbearing and current behavior, I hypothesize birth expectations influence early occupational choices. To test this hypothesis, I compare the characteristics of chosen occupations among childless women by expectation of future fertility to otherwise similar women who have already had children. Occupational characteristics considered include mean weekly wages and hours worked, percentage of part-time workers and percent of weeks per year worked part time, average days worked per week, availability of flextime and the concentration of women and mothers with young children in the occupation. In total, I find the largest differences in occupational characteristics exist between women who

have children and those who have not; I find little evidence of systematic differences in occupational characteristics by expectations of future childbearing.

In all, Chapter 1 concludes women, at the cohort level at least, are not very forward looking with respect to their future childbearing behavior. Furthermore the marked differences in occupational characteristics between mothers and non-mothers, which are well known in the literature and apparent in my analysis, indicate many women who become mothers do eventually sort into more "family friendly" occupations. Yet, my findings among childless women imply the bulk of this sorting occurs close to and after childbearing.

Chapter 2 extends the findings for occupational sorting in Chapter 1 by examining relationships between the characteristics of mothers' pre-pregnancy jobs and their decisions to maintain or quit those jobs from one year prior to pregnancy through 1.5 years following the birth. While the premise of this study is similar to many existing analyses in the return to work literature, my work differs in four fundamental ways. First, most empirical studies in the return-to-work literature and related literatures rely on data for women who gave birth in the 1970s and 1980s and many rely on the NLSY, which is a powerful longitudinal data set but is not nationally representative. I provide updated estimates of job continuity (exits from the initial job) using a nationally representative sample of women who gave birth between 1993 and 2005. Second, while most studies examine the decision to exit the labor force only, I separately examine the determinants of labor force exits and job changes. Third, I include all quits which occur in the year preceding *pregnancy* through 1.5 years after the birth. Although most labor force exits are concentrated in the three months periods either side of the birth, most job changing

happens just before and during early pregnancy and would be missed in a shorter analysis interval. I also provide a detailed discussion highlighting the importance of interval studied and sample designation in general in the return-to-work literature and related studies. Fourth, I focus on the relationships between job characteristics and employer paid leave policies which may influence not only leave taking behavior associated with the birth itself but also the ongoing arrangement of work and non-work time.

My findings suggest women who are eligible for FMLA leave are less likely to quit their jobs for any reason prior to the birth and those who work part-time are less likely to change jobs before the birth. I do find women without paid vacation are more likely to change jobs prior to the birth but overall the evidence of pre-birth sorting into jobs with more family friendly policies is not very compelling. After the birth, household income and demographic variables explain more of the variance in quit behavior than working time policies and practices and other job attributes.

Chapter 3 also examines the effect of paid and unpaid leave on mother's behavior, but in this chapter my focus shifts from employment decisions to child outcomes. The American Academy of Pediatrics recommends children receive well-baby visits at regular intervals over the first two years of life. The relevant AAP policy for survey respondents recommended children receive at least eight visits between birth and age 18 months, however, I estimate the average baby received only 2.25. While as with any form of healthcare, cost and access are important determinants of demand, federal and state policies have made well-baby care virtually free for all publicly insured infants. Furthermore, cost sharing under private insurance is also very low. The fact that

compliance rates are so low despite the low cost of care suggests other factors, such as time constraints, may be especially important.

The goal of Chapter 3 is to determine why compliance is so low. Findings suggest out of pocket cost of care and household income have the expected relationships with receipt of care and contrary to previous studies, I find the price elasticity of demand is relatively high. My estimates imply a 1 percent increase in the out-of-pocket cost of well-baby care (around $1 at the mean) is related to a 10.6 percent reduction in the likelihood of receiving a given recommended visit. For paid and unpaid leave, I find large differences in well-baby care use between low wage women who work long hours who are eligible for FMLA leave and those who are not. For higher wage women and those working a more conventional full-time schedule (fewer than 40 hours per week) FMLA eligibility does not seem to matter. Furthermore, the relationship between well-baby care and paid leave varies by occupation and is even significantly negative in certain occupations. Thus, my findings imply the type of job a mother holds matters; paid and unpaid leave may enable mothers in certain types of jobs to take their babies to the doctor but in others they appear to have no relationship or may even serve to ration work absences and reduce the amount of care received.

In total, this dissertation contributes to the understanding of complex relationships between childbearing and women's employment by highlighting the potential importance of flexible working time policies and practices and empirically investigating relationships between paid and unpaid leave, job continuity among new and expecting mothers and babies' receipt of medical care. Although paid and unpaid leave can potentially help women to combine paid work and care for a new baby, I find little evidence to suggest

women actively seek jobs with paid leave. Furthermore, the fact that women do not appear to anticipate future fertility well at the cohort level implies the ability to do so at the individual level is limited as well. This may explain why I find little evidence of early sorting into more "family friendly" occupations. In Chapter 2 I identify cluster of job changing activity around 1 year prior to the birth but I do not find compelling evidence to suggest these job changes are motivated by search for paid leave. However, I do find women who will be eligible for FMLA leave when they give birth are more likely to keep their jobs prior to and during pregnancy. Together, the findings in Chapters 1 and 2 indicate women's employment behavior around childbearing may have little to do with the availability of paid leave. This could be because other aspects of the job, and wages in particular, are more important. Or it could be because women who currently do not have paid leave are unlikely to obtain it in any other jobs available to them and, vice versa, among those who currently have paid leave most other jobs available to them will also offer paid leave. More generally, their employment behavior may be more reactionary than forward looking. These propositions are more thoroughly considered in the conclusion.

Before delving into the specific analyses presented in Chapters 1, 2 and 3, I want to make some key points regarding the trends in childbearing, the web of public and employer policies and practices that may influence women's employment and childbearing behavior in the U.S. and existing empirical evidence of their effects on employment behavior and health outcomes. Throughout this discussion, I stress the contrast between the institutions which govern work and family life in the U.S. with the institutional context in other developed countries. Compared to other developed nations,

in the U.S. the proportion of flexible working time policies which are legislated at the federal level rather than determined at the workplace level is very low. In this sense, the U.S. is a special case and some of the findings of my analyses might not apply beyond the U.S. context. However, since other developed countries (E.U. countries in particular) have more governmental policies that intervene in the arrangement of working time and issues of work-life balance arguably attract more attention in current public policy debates, a sizeable proportion of the studies that are similar to my research and much of the audience interested in the questions I pose are from substantially different policy regimes. The international comparisons provided here are intended to position my research in the broader international context of work-family research.

Trends in Women's Education, Employment and Childbearing

Most of the analyses in Chapter 1 focus on the cohorts for which I have expectations data, which include women born in the 1940s through the early 1970s. But the trends presented in that chapter are part of a longer series of changes in childbearing throughout the twentieth century. The latter half of the twentieth century ushered in a period of substantial economic and social change for women and families. While somewhat exaggerated in popular accounts of the 1940s and 1950s, the dominant family form at that time was a nuclear family headed by a primary male earner who earned a "family wage". Mothers tended to stay at home, especially when children were young (Rindfuss et al 1996). Childbearing and sex were socially unacceptable outside of marriage, men and women were expected to marry and have children as soon as financially feasible, women might work outside the home but not when children were young, and parents were expected keep the marriage in tact at all costs for the sake of the

children (Rindfuss et al 1996). Since the 1950s, the social and economic lives of men and women in developed nations have changed drastically.

Between 1969 and 1994, women's real wages increased by 31 percent while men's wages rose by only 3 percent (Blau 1998). This reduction in men's relative earnings led to the end of the "family wage" (Oppenheimer 1994). In the 1970s, divorce rates more than doubled, average age at first marriage increased and premarital cohabitation became more socially acceptable (Cherlin 1992; Bumpass and Sweet 1989). The increase in earnings power and labor market opportunity and the growing instability of marriage as a social institution coincide with a 23 percentage point increase in female labor force participation between 1970 and 1995 (Blau 1998).

This increase in women's labor force participation began among older women who had finished childbearing. By 1970, however, the labor force participation rate among women with children under age 6 was 30.3 percent up from 18.6 percent in 1960 and by 1995 had reached 63.5 percent (Blau 1998). Whereas previously women would take years out of the labor force to care for young children, as of 1987 more than half of all mothers returned to work before their child's second birthday (Klerman and Leibowitz 1990). By the 1990s, 40 percent of mothers with 1 month old children were employed (although 60 percent of these women were on leave) and 60 percent of women who worked full time prior to the birth returned to their pre-birth employers (Klerman and Leibowitz 1999).

Intrigued by these striking trends in women's behavior, many researchers have attempted to explain the causes. Some have argued that as men's real wages were falling, women entered the labor force to help maintain family income. However, the data do not

support this contention. The greatest increases in labor force participation were among the wives of high earning, well educated men (Blau 1998). Therefore, it seems women respond more to changes in their own wages than to any cross wage effect (Mincer 1980; Juhn and Murphy 1997). Given that average educational attainment across women was rising, the observed changes in wages and participation could be due to compositional changes in human capital across cohorts. However, comparing cross cohort and within cohort trends by educational attainment, this story does not hold either. There were real wage and participation gains within educational groups and within cohorts (Blau 1998). For example, between the graduating classes of the mid 1950s and those of the 1970s, the primary returns to a college education shifted from leverage in the marriage market to leverage in the labor market (Goldin 1997).

Whatever the causal ordering of events, the trends outlined above have helped to shrink the gender wage and experience gaps and break down gendered occupational barriers. Yet despite this progress, few women have attained both a career and a family (Goldin 1997). After the post war baby boom, which lead to unprecedented high rates of marriage at young ages and early family formation, the long term trend towards smaller families and later childbearing reemerged. Delayed fertility, among other factors, allowed women to take advantage of labor market opportunities available to them in the latter half of the twentieth century. From 1973 to 1988, the proportion of women who had their first child between the ages of 20 and 24 declined by 7 percent (Rindfuss et al 1996). At the same time, the proportion who had their first child between ages 25 and 29 remained roughly constant but between ages 30 and 34 and ages 35 and 39, first birth rates rose by 33 percent and 26 percent respectively (Rindfuss et al 1996). These changes

in the timing of births coincide with large increases in labor force participation among younger women. However, fertility delay has also been linked to higher rates of childlessness and longer intervals between births, which in turn lead to forgone fertility (Morgan 1982). Indeed average completed family size declined from a high of 3 to 4 children during the baby boom, dipped below 2 in the mid 1970s and then stabilized at 2 by the 1990s (Van Horn 1988; Brewster and Rindfuss 2000).

Also, although women on average have come closer to economic equality, the distribution of earnings, labor force participation rates and patterns of family formation among the most and least educated workers have become increasingly disparate (Rindfuss et al 1996). From 1979 to 1999, real earnings increased by nearly 22 percent among college educated women and 3 percent among women with some college but earnings stagnated among women with only a high school education and fell by 15 percent among female high school dropouts (Bowler 1999). Although women's overall labor force participation rate increased by 23 percentage points from 1970 to 1995, the labor force participation rate among female high school dropouts increased by only 4 percentage points and the incidence of female headship among dropouts increased by 12.2 percentage points as compared to 6.5 percentage points among all women (Blau 1998). Yet, since there has been an upward shift in the educational distribution, the average education of mothers has increased. The proportion of all babies born to college educated mothers has increased from 8.6 percent in 1970 to 25.9 percent in 2002 whereas the proportion born to mothers with less than a high school education fell from 30.8 percent to 21.5 percent (National Center for Health Statistics 2007). Nonetheless, more educated women still bear fewer children on average than less educated women; the ratio

of average births per college educated women to average births per high school drop out fell from 0.97 among women born in 1925 to 0.69 among women born in 1953 (National Center for Health Statistics 2007).

Trends in fertility timing also differ by educational attainment. College educated women under age thirty had the greatest decline in birthrates from 1975 to 1995 and were more likely than less educated women to remain childless (Martin 2000). Yet some of the decline in childbearing during their twenties was made up in their thirties (Martin 2000). However, women with less than a college education, who make up the majority of those who postpone first births, do not appear to be catching up in their thirties (Martin 2000).

The patterns of delay and decline are not unique to the U.S. Japan, the E.U. countries and Australia all experienced their own baby boom after WWII, but generally not to the extent that the U.S. did, and the booms were then followed by busts of varying degrees (Brewster and Rindfuss 2000). Mediterranean countries have settled into some of the lowest childbearing rates; average completed family size in the mid 1990s hovered just above 1 (OECD 2007). Interestingly, women's labor force participation is lower in Mediterranean countries whereas in Nordic countries where participation rates are quite high, women have sustained childbearing rates more comparable to the U.S. Although the relationship between labor force participation and childbearing is negative at the individual level, from 1970 to 1990 the correlation between country level female labor force participation rates and fertility rates changed from negative to positive (Brewster and Rindfuss 2000). But in the other high participation/high fertility regimes, part-time work among women is much more common, presumably because part-time work often

has the same benefit status as full-time work in those countries (Hoem 1995; Stier et al 2001; Brewster and Rindfuss 2000). Societal norms also play an important role in determining cross-country work and childbearing patterns. For example, in Germany maternal care is strongly preferred to other child care and therefore labor force participation rates among mothers of young children are very low and the market for outside child care is quite thin (Brewster and Rindfuss 2000).

Many factors, including social norms, wealth, and the cost of raising children, contribute to the differences in fertility between the U.S. and other developed nations. The following sections examine public policies in the U.S. and other countries that likely influence childbearing decisions, and more precisely, the coordination of paid employment, childbearing and childrearing.

U.S. Public Policies Related to Employment, Childbearing and Childrearing

Across developed countries there is a wide variety of policies targeted at families with young children. These policies can be classified into three broad types: transfer payments (i.e. tax credits and subsidies), paid and unpaid leaves, and other regulations of the employment relationship and working time in particular. In the U.S. most policy intervention is in the form of transfer payments. Arguably any policy that transfers income from persons with children to persons with children potentially affects employment, childbearing and childrearing decisions. However, I restrict my attention to those that are likely to have more direct effects on the coordination of work and non-work time. The following sections review the set of U.S. policies that relate to the arrangement of work and non-work time and contrast the evolution of the U.S. policy

approach with that of other developed nations.[1] This discussion underscores the limited governmental intervention in the coordination of employment, childbearing and childrearing and in and working time issues more broadly.

Child and Dependent Care Tax Credit and Flexible Spending Accounts

Enacted in 1976, the Child and Dependent Care Tax Credit (CDCTC) reduces tax liability by up to 35 percent of child care expenditures (less for higher income families) for individuals who incurred child care expenses while working or looking for work. Flexible Spending Accounts (FSAs) allow employees to set aside a pre-tax portion of their income to pay for child care expenses. FSAs, unlike the CDCTC, are only available to workers whose employers offer them as part of their benefit plan. The CDCTC is the largest policy that addresses child care costs in terms of benefits claimed (Maag 2007) but FSAs are likely to be more important for higher income families. Still, in 2005 only 27 percent of employers with ten or more employees offered a dependent care FSA and only 14 percent of eligible employees used the benefit (EBRI 2007).

Across states, the average annual cost of full time center based child care for a four-year-old ranges from $3,380 to $10,787 and full time infant care is even more expensive (National Association of Child Care Resource and Referral Agencies 2007). FSAs are currently limited to no more than $5,000 per year. In 2005, the average contribution among employees with dependent care FSAs was $2,630, which for an employee making $35,000 a year would have yielded a net tax savings of $770 (EBRI 2007). Parents filing in 2007 are eligible for up to $2,100 through the CDCTC on their

[1] My focus in this section is on the evolution of the institutional framework in place in the U.S. today. For a detailed discussion of the particulars of current policy initiatives in the U.S. and other countries see the conclusion to this dissertation.

federal return but the credit is not refundable. 28 states provide child care tax credits for state tax liability, and in 13 of the 28 states at least some of the credit is refundable.

Labor supply elasticity estimates with respect to child care costs vary from near zero (Michalopoulos et al. 1992; Hotz and Kilburn 1992) to -0.78 (Averett et al 1997). Policy simulations conducted by Averett et al (1997) suggest eliminating the CDCTC would reduce hours of work by 15 percent. Despite empirical evidence of the positive effects of the CDCTC on labor supply, it is slated to be phased out because of its interaction with the Alternative Minimum Tax (AMT) (Maag 2007). Currently there is a patch in place that allows families to claim CDCTC against both regular and AMT liability but if that patch is not extended, there will be a discrete drop in the assistance provided under the CDCTC in fiscal year 2008 (Maag 2007).

To claim benefits under the CDCTC, state versions of the CDCTC and FSAs, parents must incur child care expenses for center-based care or for in-home providers who are willing to report their income. Low income families, such as those on or transitioning from Temporary Assistance to Needy Families (TANF) may qualify for direct subsidies of child care costs to enable parents to work or attend school, but again in some states the provider must be licensed. Most child care centers are licensed but they tend to be more costly than home-based care, and certainly more expensive than relative care. Furthermore, many center-based care facilities are ill equipped or charge additional fees to serve children under two.

The Pregnancy Discrimination Act of 1978

Prior to 1963, dismissal of pregnant women was legal and not uncommon. The Equal Pay Act of 1963 and the Civil Rights Act of 1964 made discrimination on the basis

of sex illegal. However, equal treatment policy has a disparate impact on female workers because the physical burdens of childbirth are not shared equally by men and women (Guthrie and Roth 1999). Under equal treatment, the courts upheld differential treatment for male and female workers in general and differential health insurance coverage for pregnancy related conditions in particular. Two notable class action suits (*Geduldig v. Aiello* 417 U.S. 484 [1974] and *General Electric v. Gilbert* 429 U.S. 125 [1976]) were brought against employers who failed cover pregnancy related conditions under disability policies but the Supreme Court found in favor of the employer because the exclusion of pregnancy conditions from disability coverage is differential treatment by pregnancy status, not sex per se (Williams 1984). The Pregnancy Discrimination Act (PDA) was a direct response to the debate inspired by these controversial rulings.

The Pregnancy Discrimination Act (PDA) of 1978 amended the Civil Rights Act of 1964 to require pregnancy and childbirth related disability be treated in the same manner as any other disability under policies upheld by employers with 15 or more employees (Guthrie and Roth 1999). At the time the PDA was enacted, an estimated 60 percent of female workers were covered by disability policies that granted an average of six weeks of leave and approximately 50 percent had employer provided insurance (through their own or their husband's employer) which treated pregnancy and childbirth related health expenses differently than other similar health expenses (Gruber 1994; Trzcinski and Alpert 1994).

The PDA did not qualitatively alter the equal treatment approach to pregnancy. In fact, by equating pregnancy with other disabilities, it reinforced this perspective. Under the PDA, after the immediate postpartum period and physical recovery, new mothers are

to be treated as any other employee. Provision of leave or other benefits beyond that due to other disabilities was at the discretion of employers. In fact, a Montana law which set aside separate requirements for "reasonable leave of absence" for pregnancy was found to be unconstitutional.[2] Furthermore, since new fathers do not experience any physical disability at the birth of a child, they receive no mandated access to leaves at the onset of new care-giving roles under the PDA.

The treatment of pregnancy as a physical condition without regard to the emotional transition and assumption of new care-giving responsibilities has lead to a system in which expectant mothers (and to some extent fathers) bank leave time available to all employees to obtain a leave for childbearing. As of 1998, one third of full-time private sector female employees of medium and large establishments were offered unpaid maternity leave and only 2 percent were offered paid maternity leave (Ruhm 2004). Instead, women use paid vacation, sick and personal leave days, to obtain paid leave at the time of childbirth. 74.9 percent of women with children under six-years-old have paid vacation through their employer with an average of 10.3 days per year and 67.8 percent have paid time off for personal illness.[3] Until the Family and Medical Leave Act of 1993, women without paid leave whose short-term disability time had expired presumably faced a stark choice: return to work or lose the job.

The Family and Medical Leave Act

The Family and Medical Leave Act (FMLA) of 1993 was specifically targeted at the needs of working families at the time of birth or adoption or for their own or a family

[2] *Miller-Wohl Company, Inc. v. Commissioner of Labor & Industry* 515 F. Supp. 1264 (D. Mont. 1981), vacated, 685 F.2d 1088 (9th Cir. 1982)

[3] Author's tabulations of the National Study of the Changing Workforce. See Table I.1.

members' illness. Unlike the PDA, the FMLA distinguishes between those with family responsibilities and those without and thus extends beyond addressing the physical burden associated with childbirth itself to the time demands new parents face. Furthermore, the FMLA mandates a benefit of up to twelve weeks of leave regardless of other employer policies whereas the PDA simply required existing employer disability policies be extended to pregnancy related conditions.

FMLA leave may be used at the birth of a newborn, to care for a new baby or newly placed adopted or foster child, to care for an immediate family member with a *serious* health condition or to take medical leave for one's own *serious* health condition. The definition of "serious" health condition is ambiguous and likely depends on the employers' interpretation of the law and employee's ability to provide medical documentation. In the strictest sense, FMLA leave does not cover well-baby care visits. However, 6 of the 8 recommended visits occur within the first year of life and those that fall in the same calendar year as the birth should be covered under FMLA. Importantly, FMLA need not be used for one lump sum leave. Employees might negotiate to use FMLA leave to achieve shorter work days following the birth of their new baby or to take part of a day off to take a child to the doctor. However, there is no remuneration required during FMLA leave and it applies only to full time employees with at least one year of tenure who work for employers with at least 50 employees within a 75 mile radius of the employee's workplace.

Given the coverage limitations of FMLA, the public debate inspired during the 1992 presidential campaign and after the enactment of the FMLA was probably more effectual than the provisions of the law itself (Ruhm 1997). The lack of remuneration

requirement means, for many workers, using FMLA leave to extend parental leave beyond any paid maternity or sick leave they already possess is cost prohibitive. Employees who have accumulated paid time off (sick time, vacation days) may apply it towards the twelve weeks of FMLA leave to receive some compensation and, in fact, employers may require employees to use all accumulated paid time off (sick days and vacation days) to access FMLA leave (Guthrie and Roth 1999; Ruhm 1997). Yet, the FMLA specifically states that "nothing in this title shall require an employer to provide paid sick leave or paid medical leave in any situation in which such employer would not normally provide any such paid leave" (Guthrie and Roth 1999; Family and Medical Leave Act of 1993; Sec. 102[d][2][B])

Immediately following the enactment of the FMLA, the Commission on Family and Medical Leave ordered two surveys to measure the effects of the law, one employee survey and one establishment survey, and the results were presented to the Commission in a 1996 report. The report found the FMLA had indeed increased the provision of family and medical leave among covered establishments and there was little evidence of any adverse business effects (Commission on Family and Medical Leave 1996). However, they also found only 46.5 percent of private sector employees worked for covered employers and were eligible for leave and among those covered, 41.9 percent were not familiar with the law. Further, many employees stated they needed more leave but did not take the full twelve weeks because they could not afford it. Other studies have found similar positive results for expansion in coverage of leave policies but confirm that changes in leave use were limited, which suggests there are important financial and other barriers to use by employees (Walfogel 2001). Follow up

establishment and employee surveys conducted in 2000 found non-covered establishments were more likely to offer benefits similar to covered establishments than they had been in 1996, however the gap between covered and non-covered was still substantial (Cantor et al 2001). Thus, although FMLA provisions appear to have increased the incidence of leave benefits and set a minimum standard for leave, there is still substantial diversity in benefits across employers and employees, both due to variation in FMLA coverage and to employers' voluntary provision of more generous policies.

International Policy Comparison

The fact that the U.S. intervenes in ongoing work and family arrangements primarily through the tax code and on the side of child care arrangements rather than hours of work is in stark contrast to the approach of other OECD countries. In general, the U.S. policy regime is reflective of a decidedly different view of the normative role of government in work and childbearing and care decisions. European public policies strongly reflect the assumption that children are public goods. Furthermore, they hold that the time parents spend caring for children should not only be heavily publicly subsidized but should also be facilitated by enabling institutions which directly affect the organization of work and non-work time, and in some cases augmented by public child care programs (Gornick et al 1997). Many European countries mandate *paid* leave benefits for both new mothers and fathers and leaves may be paid at rates as high as 85 percent of wages and extend to as much as a year with unpaid leaves available beyond that (Brandth and Kvande 2002, 2001; Perrons 1999; Ruhm 1998). Indeed throughout the

EU, eligible and actual maternity leave lengths are generally measured in months and even years rather than in weeks as in the U.S.

However other developed countries have very low birth rates whereas the U.S. has maintained above replacement level fertility rates. The 2007 estimated total fertility rate in the E.U. is 1.5 births per woman, ranging from 1.21 in Lithuania to 1.99 in the Netherlands, whereas the U.S. estimate is 2.09 (The World Fact Book 2008). Even in Nordic countries, which have maintained higher birth rates than the rest of Europe and are notorious for their generous maternity leaves and working time policies, the current total fertility rates range from 1.66 in Sweden to 1.78 in Norway (The World Fact Book 2008). Yet, the history of policies in the E.U. suggests the differences in policy regimes cannot be entirely explained by differences in fertility rates. Although Nordic countries have used working time policy to achieve equality since the early 20th century, most industrialized nations were not active in intervening until labor shortages following WWII necessitated female entry into the labor force.

While the laissez faire approach to employment relations has been credited with maintaining the competitiveness of the U.S. economy and promoting innovation and growth, it has also contributed to growing economic inequality. In the case of workplace flexibility, a worker's ability to negotiate flexible working-time arrangements with her employer will depend on her strategic position in the production process and overall economy. Core jobs will come with good working time benefits, periphery jobs will offer little flexibility to meet the needs of the employee and may require a lot of flexible accommodation of the employer's needs (e.g. through acceptance of layoffs, overtime and seasonal and temporary positions) (Kalleberg 2003; Grimshaw et al 2001; Kalleberg

2000). Although the FMLA grants a subset of the workforce the right to a set amount of time off, the very same workers who are disadvantaged in bargaining for that time absent the law are likely to be those who cannot afford to take an unpaid leave. Furthermore, workers on the fringes of the labor market who are unable to find continuous full-time employment are not covered by the FMLA.

One final crucial difference between determination of working time in the U.S. and other developed nations is the tying of health insurance benefits to full-time employment. In the U.S. health insurance coverage for an employee and his or her dependents is often only offered to core (full time, permanent) employees. As the cost of healthcare soars the purchase of individual coverage is cost prohibitive and Americans who might otherwise prefer to work a reduced schedule and could afford to do so may find themselves holding full time positions to obtain health insurance benefits. Indeed, Buchmueller and Valletta (1999) find women who have health insurance coverage through their husbands' employers work 15 percent fewer hours than those who do not. The tying of health insurance to full time employment in essence places a large penalty on reduced work schedules. This peculiarity of the U.S. system provides one explanation for the fact that many European women seek accommodation of care giving responsibilities through part time work but relatively few American women do so.

Employer Flexible Working-Time Policies and Practices

Although the U.S. does reduce parents' opportunity cost of work through child care tax credits and does engage in some, albeit limited, intervention in leaving taking at the time of a birth, the ongoing arrangement of work and non work time in the U.S. is largely left to the discretion of employers, employees and households. As is generally the

case, workers' "discretion" is greatly limited by their labor market options and power to negotiate individually or collectively with their employers (Berg et al 2003). Since 1988, the incidence of unpaid maternity leave has increased sharply, especially after the enactment of the FLMA, but at the same time the incidence of other types of paid leave appears to be declining (Ruhm 2004). This trend assessed alongside relatively high labor force participation rates for both men and women suggests the time crunch for working families may be worsening.

What are Flexible Working-Time Policies and Practices?

In Chapters 2 and 3, I focus on employer provided paid leave and eligibility for FMLA leave because these policies are observable in my data. The web of flexible working-time policies and practices that may influence job continuity or the ability to take a child to the doctor is much broader. Figure I.1 categorizes various flexible working-time policies and practices by the way in which they affect the organization of working time and activities and the magnitude of their influence. Flexible working-time policies and practices affect decisions regarding work and non-work time and activities through the temporal and spatial boundaries of work. By temporal boundary I mean the division between work and non-work time and by spatial boundary I mean the division between work and non-work space. For example, a flexi-time or flexible schedule policy generally allows employees to select their own start and end times within a set range; under this policy, the duration of work and nature of the job generally do not change but the boundary of work and non-work time is more flexible. Both on-site child care and telework influence the boundaries between work and non-work space. The former takes

a portion of work space and dedicates it to non-work activities whereas the latter does just the opposite.

Policies are further classified by the degree to which they alter the temporal or spatial boundary. Flexitime, overtime and compensatory time or "comp-time", which allows workers to bank overtime hours as future time off rather than accept overtime wages, are classified as the most flexible working time policies because they allow for day to day and week to week variation in the work schedule. Maternity leave on the other hand is less flexible because it generally provides a fixed allotment of time off at the time a child is born. Similarly compressed work week and other paid leave alter the boundary of work and non-work time but generally operate under a fixed arrangement. Job sharing and gradual return also tend to be more flexible because arrangements are often tailored to the needs of the individual rather than dictated by a universal policy.

Among policies which operate at the spatial boundary, telework generally provides a more flexible boundary than on-site childcare because the employee is usually telecommuting from his or her home or a space in which they are not visually supervised. Thus he or she may switch between care-giving or other non-work activities and work at his or her own discretion. The opportunity to see one's child during the day even at an on-site facility may be restricted to breaks and lunch time.

The fundamental nature of the job a person holds and the informal support he or she may receive from supervisors and coworkers may also alter the arrangement of work and non-work time and space. For example, a professor has substantial control over her hours of work and, depending on the culture of the department, can often choose freely to work a substantial portion of hours at home because of the nature of the job. These job

characteristics afford her control over working time that may make orchestrating work and family roles easier. In other professions, an employee may have an especially understanding supervisor who informally allows him to come in late or leave early when child care arrangements fall through.

It is important to note that more flexible policies are not necessarily "better" policies. Many flexible arrangements require continual negotiation and, depending on the balance struck, can tend to favor employer needs for flexibility more than employees. The use of paid vacation time, sick time or even banked compensatory time is generally governed by formal and informal rules and doled out by the day or negotiated to obtain a leave of fixed length. Although approval may be required before a leave begins, once in place a paid leave or reduced hours arrangement is less likely to be altered to accommodate the employer. In a study of paternity quota and time account usage among Scandinavian men, Brandth and Kvande (2001) show men were far more likely to use the paternity quota and other "compulsory benefits", presumably because the quotas are subject to less negotiation.

As stated previously, of this broad set of policies, I am only able to include paid vacation and sick leave and eligibility for FMLA leave in my empirical analyses in Chapters 2 and 3. This is a common drawback among existing nationally representative surveys. Furthermore, large scale surveys are rarely able to capture informal flexibility. Even when surveys do include information about formal and informal employer working-time policies and practices, the wording of the questions often inhibits desired inference. For example, many surveys which ask about employer policies and practices structure questions as follows: "Do you have flexible work hours that allow you to vary or make

changes in the time you begin and end work?" (May Current Population Survey 2004). Questions like this confound availability and use. Respondents could answer no either because they do not have the option to work a flexible schedule or because they were offered a flexible schedule and refused it. Assuming the intent of studying workplace policies and practices is to infer the likely effect on behavior if the policy or practice were extended beyond the current covered population, questions of this sort will lead to overestimates of the true effect. With respect to paid time off, the question "Do you have paid vacation leave?" is also problematic. An employee who receives an allotment of days each year but has already used them all may respond no. Furthermore, survey data cannot measure the availability of informal flexibility among employees who never attempt to use it. Sometimes they may know of others in their department or workgroup who have made informal arrangements for greater flexibility but this knowledge is tied to their colleagues attempt to use flexibility and it does not necessarily mean the individual surveyed had the opportunity to obtain similar flexibility and declined it.

There are ways to structure questions about formal flexibility that measure availability separately from use. For example, Berg and Kossek's (2006) battery of workplace flexibility questions includes separate questions for availability and use and possible responses for availability are "yes", "no" and "don't know". This structure allows the researcher to observe offer and use separately, to identify persons who enjoy a given form of flexibility informally (without a policy in place) and persons who probably have not tried to obtain the benefit or accommodation in question and therefore don't know if it would be available to them. Also, their survey includes a probe for reasons why an employee does not use policies available to him or her. This sort of information

helps the researcher to infer the potential cost (either real monetary costs as associated with unpaid leave or sacrifice of future opportunities or intangible penalties imposed by superiors and peers) to the employee of using a policy or practice.

The National Study of the Changing Workforce (NSCW) is a publicly available survey that also has many questions design to measure availability apart from use. Yet relative to similar publicly available data sets the NCWS is small and it is cross-sectional. Thus the costs of using it for many detailed analyses of labor market behavior, including those in this dissertation, outweigh the benefits.

Prevalence of Flexible Working-Time Policies and Practices

The distribution of flexible working-time policies and practices throughout the labor force is very unequal. Only 27 percent of the workforce reported they had schedule flexibility in the 1997 Current Population Survey and availability varied from 12 percent of the workforce to over 50 percent of the workforce across occupations with lower incidence among female employees (Golden 2001). Table 1 uses NCWS data to tabulates the availability and excess demand for part time work, paid leave and other workplace policies and practices among workers in general, men and women, mothers and fathers and parents with children under five-years-old.

The first row of Table 1 shows part-time work is relatively scarce but disproportionately concentrated among mothers with young children. Only about 20 percent of all employees work part-time, but 30 percent of mothers with young children and only 6.89 percent of fathers with young children do. Among those working full-time, about 15 percent would prefer to work part-time and among full-time mothers with young children over 20 percent would prefer to work part-time. However, the ratio of mother's

ideal to actual hours of work is generally closer to 1 than for fathers and the average ratio among mothers with young children is actually above 1. Thus it seems mothers have a higher demand for part time schedules and are more likely to obtain schedules that satisfy their preferences than fathers. The majority of fathers (64.70 percent) would prefer shorter hours.

Over 41 percent of employees, and 64.29 percent of mothers with young children, claim they could arrange part time work. Table 2 provides tabulations of a multi-punch question about barriers to part-time work, which are suggestive of the implicit and explicit costs of part-time schedules. The vast majority of full-time who would prefer part time work (82.32 percent overall and 88.16 percent of mothers with young children) cited reductions in income among the reasons why they do not work part-time. Income reduction was a more common reason among mothers than fathers, perhaps because families where mothers are working full-time are more likely to have lower other sources of income or be single parent families. Fathers, on the other hand, were more likely to cite effects on personal and organizational success and achievement as barriers to part-time work than mothers. This was also true of male relative to female employees overall. In general, Table 2 suggests current household income constraints are the most common barrier to part-time work among all employees and adverse affects on long term career opportunities and earnings growth are relatively more common concerns among men than women.

Returning to Table 1, men and women also differ in the availability and demand for working from home and the availability of paid leaves. Overall, only 9.90 percent of all employees claim they do some work from home. Importantly, this figure represents

employees who have an arrangement to complete a portion of their paid hours of work while at home; this figure does not include the 23 percent of employees who regularly take work home with them but are not paid for the extra time. Men and fathers are slightly more likely than women and mothers to work from home but more women who do not work from home would like to than men. Among young parents, the proportion of mothers who would like to work at home is nearly 20 percentage points higher than the proportion of fathers who would like to work at home.

Mothers are also less likely than fathers to have access to paid vacation leave and those who do have vacation leave receive fewer days on average than fathers. Yet fathers, and those with young children in particular, are more likely to be unable to use all of their vacation time and more mothers than fathers have access personal days. Somewhat surprisingly, mothers are substantially less likely to have paid holidays than fathers. This could reflect their relatively higher concentration in service occupations.

Most differences in the availability of flextime, reduced or compressed schedules and childcare assistance across genders and by parental status are less pronounced. However, father's flextime policies appear to be more flexible on average than mothers, meaning they are more able to vary start and end times of work daily rather than have their chosen schedule remain fixed. Also, mothers are far more likely than childless men and women and fathers to be able to arrange a part year work schedule. This could be because they count maternity leave arrangements as achieving part year work. Cash or in-kind assistance with childcare appears to be relatively equally distributed across parents and non-parents. This finding indicates the survey did elicit the availability of policies rather than use.

In summary, the patterns in Table 1 reflects the uneven distribution of workplace policies and practices across the workforce and highlights differences between men and women in general, and mothers an fathers in particular. The only policies which come close to universal coverage are paid vacation and paid holidays. Yet there are still marked differences in availability between mothers and fathers. Thus, for U.S. workers, the options available for managing work and non-work time and combining childbearing and rearing activities with paid employment largely depend on the job. Chapter 3 provides further evidence of the importance of job context. I find the relationship between paid leave and compliance with recommended well-baby care differs substantially across mothers' occupations. But again, the common theme of high variability across workplaces and jobs holds.

Empirical Evidence of Relationships with Family and Health Outcomes

The empirical literature on working time policies and practices is vast and crosses disciplines including psychology, sociology, management and economics. In the economics literature, maternity leave has received the most research attention. Empirical studies have found leave provision increases the instance of leave taking and duration of leaves (Berger and Waldfogel 2004; Waldfogel 1999) and may have some positive employment effects. However, employment effects are at least partially offset by wage reductions (Ruhm 1998; Gruber 1994).

For work schedules, in a convenience sample of 324 women who were employed during their first trimester, Glass and Riley (1997) find mandatory overtime decreases the likelihood of return to the pre-birth employer. They also find length of leave, flexibility, hours worked at home and perceived supervisor and coworker support all increase the

likelihood of return. Part-time work is related to lower levels of work-to-family conflict and mothers who work part-time report more success in balancing the demands of their work and family life (Hill et al 2004). However, part-time work may come at a cost. Comfort et al (2003) find only 17 percent of employees working part-time received a promotion during their tenure with their current employer. Also, they find only 2 percent of male and 5 percent of female part-time workers are managers. Ermisch and Wright (1993) find evidence of lower wages for part-time work even after accounting for self-section into full-time and part-time jobs.

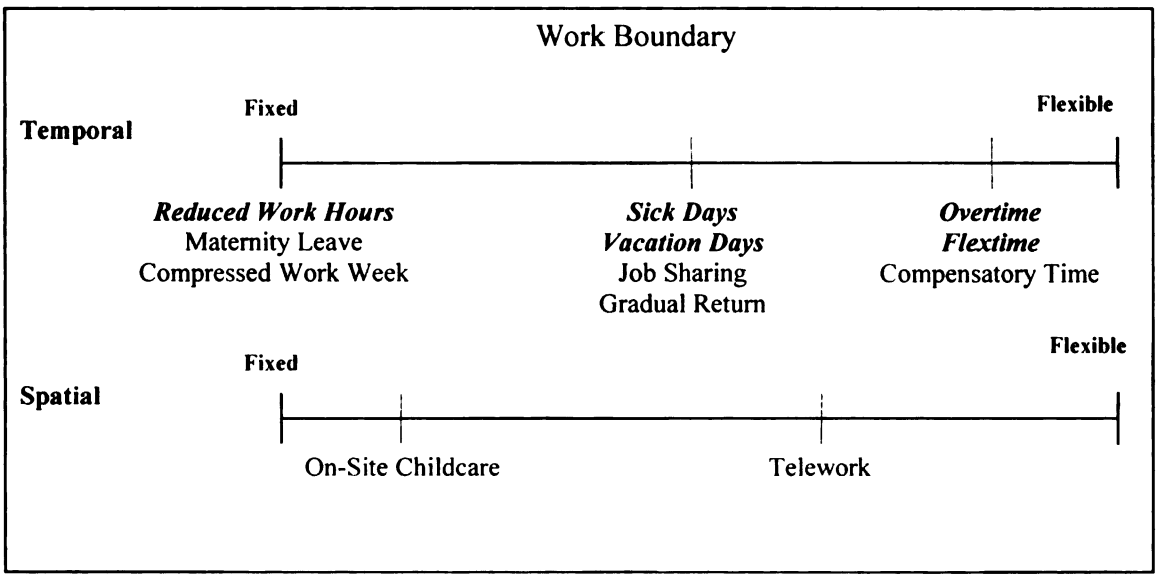
For FMLA leave, as stated previous, empirical findings show evidence of expanded leave coverage but little change in leave taking (e.g. Waldfogel 2001). This may be because many employees are not familiar with their rights under the law (Waldfogel 2001). Two years after FMLA was passed, only 63 percent and salaried and 50 percent of hourly employees said they had heard of the law (Budd and Brey 2003).

A small number of existing studies examine relationships between flexible working-time policies and practices and child health outcomes. In a study of breast feeding behavior among working mothers, Jacknowitz (2004) finds provision of on site child care and ability to work eight hours at home increases the likelihood of breastfeeding at six months by 59 percent and 21 percent respectively. 78.7 percent of employees who took FMLA leave said it had a positive effect on their ability to care for family members and, among those who reported positive health effect, 93.5 percent indicated FMLA leave made it easier for them to comply with doctors' instructions (Waldfogel 2001). These finding invites similar analysis on other child outcomes.

In total, flexible working-time policies and practices appear to improve family outcomes and enable mothers to manage work and care-giving roles. Across the work-family literature, most evidence for the effects of working-time policies and practices is at the workplace level. While national surveys cannot match the rich detail of many of these primary data studies, the growing evidence of the importance of working-time policies and practices invites large scale analyses to develop nationally representative and policy relevant estimates of relationships. Although the richness of the workplace context is missed in large scale surveys, the need for nationally representative estimates based on more robust statistical inference to verify findings in smaller scale studies justifies their use. This dissertation is aimed at meeting that need. The following three chapters contain the specific analyses I have introduced and provided background for here. I conclude with a discussion of policy implications of my findings in the context of current policy initiatives and highlight my contributions to existing literature and directions for future research.

Figures and Tables

Figure I.1 Classification of Flexible Working Time Policies and Practices



Notes: The policies and practices I am able to study in Chapters 1, 2 and 3 are in ***bold italics.*** I am only able to consider flextime in Chapter 1.

Table I.1 Estimated Demand for and Availability of Part Time Work, Paid Leave, Schedule and Other Employer Policies

	Total	Male	Female	Fathers	Mothers	Fathers Child <5yrs	Mothers Child <5yrs
% of Employees Who Work Part Time	19.38%	13.20%	26.65%	8.71%	26.03%	6.89%	30.22%
	(0.75)	(0.98)	(1.11)	(1.00)	(1.32)	(2.14)	(2.87)
% of Those Working Full Time who Would Prefer to Work Part Time	14.04%	11.15%	17.36%	11.82%	19.76%	10.74%	21.51%
	(0.65)	(0.91)	(0.94)	(1.13)	(1.18)	(2.31)	(2.66)
Ratio of Ideal Work Hours to Actual Work Hours	0.92	0.90	0.94	0.81	0.95	0.84	1.04
	(0.03)	(0.04)	(0.06)	(0.02)	(0.08)	(0.04)	(0.08)
% with Ideal Work Hours Below Actual (Ratios Less than 1)	59.73%	60.49%	58.85%	64.70%	59.09%	65.24%	55.03%
	(0.96)	(1.43)	(1.23)	(1.69)	(1.48)	(3.64)	(3.22)
% of Those Working Full Time who Could Arrange to Work Part Time	41.15%	38.25%	45.11%	34.73%	46.96%	29.42%	64.29%
	(1.06)	(1.51)	(1.44)	(1.72)	(1.74)	(3.45)	(3.60)
% Whose Employers Offer Part Time Workers Same Benefits as Full Time	40.00%	42.02%	38.24%	42.64%	39.87%	48.79%	36.51%
	(1.26)	(2.03)	(1.56)	(2.55)	(1.91)	(5.50)	(3.96)
% Ever Work from Home	9.90%	11.09%	8.52%	13.04%	9.32%	13.01%	9.75%
	(0.52)	(0.79)	(0.66)	(1.05)	(0.85)	(2.14)	(1.97)
% Do Not Work from Home but Would Like To	42.65%	41.52%	43.95%	41.22%	46.22%	41.38%	58.17%
	(1.05)	(1.57)	(1.35)	(1.89)	(1.64)	(3.87)	(3.48)
% With any Paid Vacation Time	77.79%	80.16%	75.30%	85.06%	74.47%	85.76%	74.92%
	(0.95)	(1.47)	(1.20)	(1.51)	(1.48)	(2.93)	(3.16)
Average Number of Vacation Days	13.99	14.59	13.32	15.39	13.21	13.52	10.31
	(0.19)	(0.28)	(0.24)	(0.34)	(0.29)	(0.60)	(0.61)
% Of Those With Paid Vacation Who Say Not Able to Use All Vacation	11.89%	13.38%	10.20%	13.33%	10.00%	13.83%	5.75%
	(0.73)	(1.14)	(0.89)	(1.35)	(1.07)	(2.70)	(1.72)
% With any Paid Holidays	76.07%	76.86%	75.23%	82.14%	75.04%	80.51%	67.03%
	(0.98)	(1.52)	(1.21)	(1.60)	(1.47)	(3.21)	(3.45)
% Allowed Paid Time Off for Personal Illness	68.41%	66.61%	70.30%	68.42%	71.46%	63.58%	67.76%
	(1.05)	(1.63)	(1.27)	(1.93)	(1.52)	(3.98)	(3.39)
% Of Those With Paid Time Off for Personal Illness Say Not Allowed Enough	13.29%	11.41%	15.16%	10.85%	15.67%	10.38%	22.56%
	(0.88)	(1.29)	(1.19)	(1.48)	(1.46)	(3.24)	(3.81)
% Allowed Paid Time Off to Care for Sick Child (Separate from Other Leave)	46.59%	n/a	n/a	47.95%	45.12%	43.75%	44.60%
	(1.61)			(2.45)	(2.05)	(3.99)	(3.58)
% Of Those With Paid Time Off to Care for Sick Child Say Not Allowed Enough	11.40%	n/a	n/a	10.67%	12.22%	18.61%	16.99%
	(1.59)			(2.52)	(1.86)	(5.65)	(3.80)

Table I.1 Estimated Demand for and Availability of Part Time Work, Paid Leave, Schedule and Other Employer Policies (Continued)

% Can Choose Start and End Times (Flex)	51.10%	52.38%	49.62%	51.79%	48.46%	50.40%	54.40%
	(0.95)	(1.42)	(1.23)	(1.70)	(1.48)	(3.61)	(3.22)
% With Flextime Can Vary Start and End Times Daily	60.91%	64.99%	55.99%	69.95%	56.91%	67.91%	47.13%
	(1.26)	(1.79)	(1.73)	(2.11)	(2.09)	(4.77)	(4.36)
% Use Flex Scheduling Options Available	75.48%	71.48%	80.30%	71.69%	82.93%	76.67%	80.43%
	(1.10)	(1.65)	(1.36)	(1.97)	(1.58)	(4.03)	(3.67)
% Say Less Likely To Advance if They Use Flex Scheduling Options Available	33.14%	34.60%	31.39%	32.94%	34.27%	43.08%	34.40%
	(1.66)	(2.51)	(2.07)	(2.87)	(2.50)	(5.97)	(5.68)
% Could Arrange to Work Part Year	27.06%	26.80%	27.35%	23.80%	27.13%	17.94%	29.19%
	(0.93)	(1.38)	(1.22)	(1.54)	(1.48)	(2.99)	(3.25)
% Allowed to Work Compressed Workweek	42.46%	43.77%	41.03%	42.29%	40.13%	44.35%	49.60%
	(1.05)	(1.60)	(1.33)	(1.88)	(1.60)	(3.91)	(3.54)
% Employer Offers Service to Help Find Child Care	19.13%	19.69%	18.54%	18.39%	17.56%	18.05%	20.05%
	(0.82)	(1.26)	(0.11)	(1.51)	(1.23)	(2.95)	(2.65)
% Employer Operates/Sponsors Onsite Child Care	10.97%	10.79%	11.15%	9.77%	11.64%	10.92%	10.51%
	(0.62)	(0.92)	(0.83)	(1.09)	(1.02)	(2.36)	(2.00)
% Employer Provide Direct Financial Assistance for Child Care	10.95%	10.02%	11.94%	9.98%	11.71%	12.40%	8.91%
	(0.64)	(0.93)	(0.88)	(1.14)	(1.03)	(2.55)	(1.82)
% Offer Pre-Tax Account for Childcare Expenses	32.24%	30.40%	34.26%	32.97%	34.66%	32.75%	35.72%
	(0.97)	(1.44)	(1.28)	(1.78)	(1.55)	(3.56)	(3.29)

Source: National Study of the Changing Workforce 2002. Sample weights are applied to provide estimates of population parameters. Standard errors are reported in parentheses.

Table I.2 Reasons Given for Working Longer Hours than Ideal

	Total	Male	Female	Fathers	Mothers	Fathers Child <5yrs	Mothers Child <5yrs
With Shorter Hours Would Risk Losing Job	30.65%	29.89%	31.36%	30.47%	31.38%	28.75%	27.04%
	(1.08)	(1.57)	(1.45)	(1.88)	(1.74)	(3.75)	(3.92)
With Shorter Hours Would Not be as Successful	44.66%	49.40%	39.07%	50.35%	36.94%	55.30%	39.70%
	(1.17)	(1.72)	(1.52)	(2.05)	(1.81)	(4.23)	(4.20)
Manager Expects Longer Hours	14.10%	15.27%	12.71%	13.72%	12.46%	13.03%	10.20%
	(0.83)	(1.25)	(1.04)	(1.36)	(1.26)	(2.67)	(2.50)
Pressure from Coworkers to Work Longer Hours	6.26%	6.89%	5.50%	6.11%	4.85%	6.87%	5.62%
	(0.55)	(0.81)	(0.70)	(0.93)	(0.79)	(1.93)	(1.87)
Longer Hours Required for Achievement	54.26%	58.30%	49.48%	58.32%	50.32%	62.92%	40.07%
	(1.17)	(1.70)	(1.56)	(2.03)	(1.87)	(4.10)	(4.15)
Longer Hours Required for Organizational Success	45.17%	49.88%	39.63%	51.54%	41.42%	53.29%	39.67%
	(1.17)	(1.72)	(1.51)	(2.06)	(1.84)	(4.26)	(4.17)
Longer Hours Required To Keep Up	49.06%	49.28%	48.82%	49.76%	47.84%	51.98%	42.18%
	(1.17)	(1.72)	(1.56)	(2.05)	(1.87)	(4.26)	(4.19)
Income Reduced if Work Shorter Hours	82.32%	80.20%	84.82%	79.31%	86.30%	78.90%	88.16%
	(0.88)	(1.34)	(1.09)	(1.61)	(1.27)	(3.22)	(2.60)

Source: National Study of the Changing Workforce 2002. Sample weights are applied to provide estimates of population parameters. Standard errors are reported in parentheses.

Note: Tabulations are of responses to a multi-punch question.

Table I.3 Barriers to Working From Home

	Total	Male	Female
Impractical	60.86% (1.59)	64.06% (2.40)	57.41% (2.04)
Not Allowed	19.96% (1.24)	17.81% (1.82)	22.28% (1.67)
Not as Productive	1.27% (0.34)	1.42% (0.52)	1.10 (0.45)
No Space	1.22% (0.37)	0.75% (0.47)	1.73% (0.57)
No Equipment	8.15% (0.97)	7.27% (1.55)	9.08% (1.14)
Employer Won't Provide Tools	1.10% (0.31)	1.27% (0.50)	0.93% (0.35)
Co-worker Jealousy	0.24% (0.14)	0.35% (0.25)	0.12% (0.12)
Threatens Job Advancement	0.45% (0.19)	0.52% (0.30)	0.37% (0.22)
Not Taken Seriously	0.47% (0.20)	0.50% (0.29)	0.43% (0.26)
Would Interfere with Family Life	1.75% (0.46)	1.56% (0.66)	1.96% (0.63)

Source: National Study of the Changing Workforce 2002. Sample weights are applied to provide estimates of population parameters. Standard errors are reported in parentheses.
Note: Tabulations are of responses to a multi-punch question.

CHAPTER 1

Expectations of Expecting: Women's Actual and Expected Fertility Over the Past Half Century

Introduction

As prefaced in the introduction to this dissertation, women's employment, education and childbearing decisions changed dramatically over the twentieth century, and in particular during the last half. From the 1950s through the 1990s family sizes shrunk from over three children to stabilize at just under two, and first births after age 25 and even 35 became more common.[4] These changes in fertility coincide with unprecedented increases in women's labor force participation and educational attainment (O'Neill and Polachek 1993), gains in relative wages (Blau and Kahn 1997), growing labor force attachment (Blau and Kahn 2007) and declining occupational segregation (Jacobs 1989). They accompany other changes in the family formation as well, including later marriages (Bianchi and Spain 1996), increases in assortative mating (Mare 1991), higher divorce rates and cohabitation rates (Bumpass and Sweet 1989; Martin and Bumpass 1989) and the introduction of oral contraceptives (Bailey 2006; Goldin and Katz 2002, 2000). The actual fertility trends are well known and often referred to in studies of other trends over this time period. But, did successive cohorts of women anticipate these patterns in their fertility? Furthermore, did their plans for future childbearing shape concurrent changes in employment and other behaviors? Cohort birth expectations provide insight for investigating each of these questions.

This paper uses cohort level birth expectations and actual fertility data to examine the secular trends in relationships between actual and expected fertility and early occupational choices. Specifically, I compare expectations of ever having children, completed family size, and timing of first birth among women born in the 1936 through

[4] Author's calculation using June Current Population Surveys 1971 through 1998.

1972 cohorts to the patterns in actual fertility that evolved for their cohort. Additionally, I examine the relationships between birth expectations, actual childbearing, and the characteristics of women's chosen occupations to see if women who expect to have children appear to choose more family friendly occupations early in their careers.

Similar to previous studies, I find cohort expectations correspond reasonably well with their own completed family size. However, nearly all cohorts underestimated the likelihoods of delaying their first birth, having only one child, or remaining childless. Thus, I conclude cross-cohort fertility patterns were generally not anticipated. Furthermore, I find most of the differences between the jobs mothers and childless women hold are due to sorting at or after the first birth rather than early in their careers.

Conceptual Framework

There are (at least) three reasons why birth expectations are of interest for research and policy. First, their relationship to future childbearing may inform our understanding of family formation. Second, expectations of future childbearing may influence current and future behavior including marriage, educational investment, and employment. Third, fertility expectations may be used to generate forecasts of future fertility. Neither of these relationships depends on the other; birth expectations may influence other current behaviors or convey useful information about family formation even if they do not predict future fertility. In this study, I am interested in the first two applications of expectations data.

The "other current behavior" of interest in this study is choice of occupation. When selecting occupations, women who expect to become mothers may trade off wages for job attributes that will help them to combine paid employment with future or current

care-giving roles (Altonji and Blank 1999; Fuchs 1989; Filer 1985; Mincer and Polachek 1974). These job attributes may include reduced work schedule, paid time off work, flextime or job sharing policies, on-site childcare and any other policies or practices that may reduce the costs of combining paid employment and childrearing activities.

There are certainly other reasons why men and women or women who expect to become mothers and those who do not would differ in their tastes for "family friendly" job characteristics. Research has shown evidence of mediating mechanisms (e.g. Hakim 2002; Cable and Judge 1994; Judge and Bretz 1992; Forgionne and Peeters 1982). Yet differences in the incidence of childbearing and childrearing responsibilities have consistently been found to explain a large portion of the observed wage differentials and occupational segregation by gender. Estimates of the "family gap" in pay find a 10 to 15 percent difference in wages between women who have children and otherwise similar women who do not (Waldfogel 1997; Korenman and Neumark 1992; Fuchs 1989) and as the gender wage gap declined over the 1980s, the family gap increased (Waldfogel 1998). Analyzing the trends in expected childbearing and early occupational choices over this time period could inform our understanding of the trends in gender and family wage differentials.

One key challenge faced when comparing trends in expected and actual fertility across cohorts, and fertility timing in particular, is that marital behavior and birth spacing may change across cohorts as well. The correspondence between expected and actual future childbearing will likely depend in part on current marital status and past childbearing. This may muddle comparisons of expected and actual fertility across cohorts at a given age. If for example, women are more uncertain about future

childbearing before they are married, we might find the earlier cohorts' expectations at age 20 better approximated their actual fertility than later cohorts simply because later cohorts married later. Ideally, this possibility would be examined directly by comparing expected and actual fertility for cohorts as a whole and for the married and unmarried proportions of each cohort separately and the findings could inform our understanding of relationships between marriage and family formation.

Unfortunately expectations data were not collected among unmarried women in most surveys until the 1990s. Thus, in keeping with previous studies, I restrict the majority of my analysis to married women. Additionally, I restrict my analysis to childless married women. Conceptually, the transition to motherhood is a pivotal event and marks the assumption of new time-intensive responsibilities. Empirically, the differences in educational attainment, labor force participation, wages and other economic outcomes are greatest between women who have had children and those who have not rather than by parity.

Previous Research

Most studies of expectations data seek to relate birth expectations to future childbearing. In general, there are three ways to compare expected and actual childbearing. First, average expectations in a cross-section of women can be compared to the period measures of fertility such as the total fertility rate.[5] Examples of this type of comparison include Fischoff et al. (2000), Moore (1981) and Peterson (1995). The second type compares individual level expectations to future individual level fertility

[5] The total fertility rate is an estimate of the total number of children a women will have. It is derived by summing the current age specific fertility rates over the remainder of her fertile lifecycle. This is referred to as a period measure because it uses age specific fertility rates at a given time. It hinges on the assumptions that women who have not yet completed childbearing will experience the current age specific fertility rates over the rest of her fertile lifecycle and will live at least to the end of their reproductive life.

using longitudinal data. Examples of this type include Trent and Crowder (1997, Westoff and Ryder (1977) and Freedman et al. (1980). Third, studies may compare past cohort level expectations to actual cohort fertility. By cohort level expectations and cohort fertility, I mean average expectations within a cohort are compared to average actual fertility among members of that cohort surveyed at some point after expectations were surveyed. The follow-up measure of actual fertility is generally not based on the same sample of women. Cohort level measures have been used in Westoff (1981), Hagewen and Morgan (2005), and O'Connell and Rogers (1983) and are the preferred measure for this analysis.

Technically, expectations and actual fertility can be compared at the individual level across cohorts as opposed to comparing past cohort average expectations to actual cohort average completed childbearing. Conceptually, the former comparison would address questions about individuals' abilities to anticipate their own fertility rather than whether or not the secular trends in cohort fertility were anticipated. Practically, few data sets contain a long enough time series of data for a broad enough band of cohorts to compare average individual level correspondence between expected and actual childbearing across cohorts.

Results among studies that compare expected to actual fertility using any of the measures described here have been mixed but generally, studies that compare cross-sectional expectations to period fertility measures or average cohort expectations to average cohort fertility find a closer correspondence than individual level comparisons. For example, Freedman et al (1977) examined the correspondence between childless couples' expected family size in 1962 and the same couples' actual family size in 1977

and found 61.3 percent of couples who were childless in 1962 had expectations that exceeded their achieved 1977 fertility. Yet, Westoff (1981) find individual differences appear to average out at the cohort level. Much of the existing evidence is based on narrow bands of cohorts (e.g. Hagewen and Morgan 2005) or average across single birth year cohorts (O'Connell and Rogers 1983). In both cases, the ability to make comparisons across cohorts is limited.

The existing empirical evidence of women sorting into more family friendly occupations or career tracks based on their expectations of future childbearing is mixed. Averett and Whittington (2001) hypothesize women who expect to have children may select into jobs with maternity leave benefits but they find no evidence of selection. However, Blakemore and Low (1984) use fertility expectations to examine college major choices and find women with higher expected fertility choose majors that lead to jobs with less skill atrophy. Moreover, they find fertility expectations explain a large share of the differences in distribution of male and female college majors. Baber and Monaghan (1988) also find evidence of selection in their study of occupational choices among 250 college women. Although nearly all expected to have children, those pursuing less conventionally female careers were less child oriented. Related studies, Mott and Mott (1984), Powers and Salvo (1982), Presser and Baldwin (1980), Waite and Stolzenberg (1976, 1977), provide evidence of a negative relationship between childbearing expectations and women's likelihood of working at all.

Data

The actual and expected fertility data come from the 1971 through 2004 June Supplements to the Current Population Survey (CPS). The CPS is a nationally

representative household survey. In the June Supplement women in the household ages 15 to 44 are asked to answer questions about their fertility histories and, in selected years, about their future fertility expectations. From these data it is possible to construct various measures of average cohort expected and completed fertility. These measures are explained here. As stated previously, all expectations data are for women who have ever been married and are currently childless.

Expectations questions in the CPS collect information about expected family size and expected timing of the first/next birth. I use both types of information to create three measures of cohort birth expectations. Women who are eligible for the expectations supplement (married and of childbearing age) are first asked whether or not they expect to have any (more) children. Possible responses are "yes", "no" and "uncertain". Since I consider childless women only, answers to this question indicate whether or not a woman expects to eventually become a mother or is uncertain about having children. I refer to these expectations as "expected motherhood".

In survey years 1973 through 1983, women who say they do expect to have children are also asked how many they expect to have in the next five years. Among childless women this question refers to the timing of first births. Therefore, I refer to these expectations as "expected first birth timing". Responses to this question are combined with responses to the first question to identify women who expect to have children but not in the next five years. I refer to this group as women who "expect to postpone" childbearing.

Expected number of children is asked of those who respond "yes" they expect to have children; obviously those who respond "no" expect not to have any children. Those

who respond uncertain are not asked further questions about expected number of children. Clearly their expected number of children is not zero but, without more information, I cannot determine the underlying expectation. To arrive at expected family size estimates from these data, I assume those who respond "uncertain" have underlying expectations equal to the mean of those within their cohort and marriage age quartile who respond "never" (i.e. those who expect 0 children) and those who respond "yes". Clearly this assumption is unsatisfactory, but given the lack of a superior alternative or further information in this or other data sources, I opt for this measure because it is transparent and easily replicable. I have experimented with other similar assumptions and the general conclusions of the analysis do not change. Throughout the analysis I refer to these expectations as "expected family size".

Average cohort actual fertility measures are created using retrospective birth and marriage histories. Since the expectations data is limited to ever married women only, the average cohort actual fertility measures are based on retrospective birth histories for only those women who were married at the time expectations were surveyed. For example, expectations among married women in the 1950 cohort at age 22 would be compared to actual fertility among women born in 1950 who had married at or before age 22.

Figure 1.1 displays the trends in cohort completed family size and timing of first birth over the twentieth century and highlights the cohorts I am able to analyze. The broken lines indicate the range of cohorts I compare at older ages (age 27 to 35) and the solid lines illustrate the cohorts I can compare in their twenties. Since expected the expected timing of births survey questions were not fielded before 1975 or after 1983, the

expected and actual timing analysis depicts a narrower range of cohorts than is shown in Figure 1.1.

To analyze occupational characteristics I combine information from the March, May and June CPS surveys. Wage and hours information come from the March Annual Social and Economic Study Supplement. Other occupational characteristics data are obtained from the May Workplace Topics Supplement. In both cases I obtain mean occupational characteristics by year, detailed occupational code and educational attainment and match the occupational characteristics to observations in the expected and actual fertility data. For more information about the occupational characteristics data refer to Appendix A1.

The data used to calculate occupational characteristics include workers of all ages, both male and female. I include workers of all ages because I am attempting to capture the opportunities available in the occupation overall rather than at to any one point in a career. I include men because recent studies suggest successive cohorts of women have exhibited labor market behavior that more closely approximates past cohorts of men than women (Blau and Kahn 2007). Thus later cohorts just entering a given occupation may expect opportunities more similar to men who are already established in that occupation than women. Furthermore, including men increases the precision of the estimated occupational means.

Results

Table 1.1 contains the means and standard deviations of key covariates and occupational characteristics considered by expected and actual childbearing. These means are based on all childless married women across all cohorts at all ages. The

broken line separates tabulations of timing expectations group from tabulations of motherhood expectations; as explained, timing expectations were only surveyed in a subset of years (1976 through 1983) while motherhood expectations were surveyed between 1971 and 1992.[6] Thus comparisons of sample means across the broken line are invalid.

Looking at the sample means to the left of the broken line, the childless women who expect never to have children do not appear to conform to the stereotype of "career women". On average they are older than other childless women but they are also less educated and less likely to be in the labor force. Their real mean weekly occupational wages are higher than the wages in occupations women who expect to have children hold but they are lower than those of women who are uncertain about having children. Yet, none of these differences are particularly large when compared to the differences between mothers and childless women.

Figure 1.2 plots expectations of motherhood among 20 to 23 year old childless, married women against the actual percentage of ever married women who become mothers before age 40. The lower series of expectations (the circles) include only those women who say they do expect to have children and the top series (the squares) add the percentage of women who say they are uncertain about ever having children. The series of x's show that the majority of ever married women do eventually have children. Also, the circles show the majority of childless women expect to become mothers.

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[6] Motherhood expectations were surveyed in the 1998 June CPS but retrospective marital and childbearing histories are not complete enough to support the analysis and although discrepancies in the questions were not apparent from the codebooks tabulations suggest there may have been a change in the survey structure or delivery that limits comparability.

When added to the percentage who are uncertain, the total percentage of women who expect or are uncertain about childbearing roughly approximates the proportion who become mothers. This sort of rough approximation has lead other cohort level studies to conclude there is a reasonable correspondence between expected and actual fertility when examining a single cohort or a small band of cohorts. Yet with the cross-cohort trends visible in Figure 1.2, it seems the trend in expected motherhood is positive while the cross-cohort trend is actual motherhood over the comparable region is flat. Although the proportion of women who expect to have children increased by only 6.98 percentage points from the first data point to the last data point, the slope of the OLS regression line fit to the "Expect" series is 0.24 (or ¼ of a percentage point) with a standard error of 0.07. Conversely, the slope of the OLS regression line fit to the actual motherhood data across the cohorts where expectations were surveyed (1952 to 1972) is -0.08 with a standard error of 0.09.

Figure 1.2 also displays the cross-cohort changes in the proportion of women who are uncertain about childbearing (the difference between the squares and the circles) and the cross-cohort changes in the proportion of women who expect never to have children (the difference between 100 and the squares). Across cohorts, the percentage of women who are uncertain appears to be roughly constant whereas the percentage of women who expect never to have children is decreasing. Indeed the cross-cohort average percentage of women age 20 to 23 who are uncertain about having children is 9.01 percent with a standard deviation of 2.08 and no significant cross cohort trend (β = -0.03, s.e. = 0.08). Therefore the positive trend in the percent who expect or are uncertain (the squares)

comes primarily from increases in the proportion of women expecting to have children rather than increases in uncertainty.

Figure 1.3 compares expected and actual first birth timing by age at which the expectations were surveyed. Specifically, the dark circles indicate the percentage of each cohort that expected to postpone their first birth (i.e. expected to have children eventually but not the in the next 5 years). The lighter colored diamonds plot the proportion of each cohort that was married and childless at the age the timing expectations were surveyed, did not have a birth in the ensuing five years, but did have children before age 40. The actual timing data do not include women who never had children.

The large difference between the two series in each graph in Figure 1.3 shows that women substantially underestimated the likelihood of postponement. For example, at ages 18 to 22 only 3.58 percent of women in the 1950 birth cohort who were married expected to wait five years until having their first child yet 36.8 percent of women in this group actually did wait five years or more. Although, the trend in cohort expectations in all age groups does indicate planned postponement was more prevalent in later cohorts. The only group of women whose expectations of postponement closely approximated the actual incidence of postponement was the group born after 1950 and surveyed at ages 27 to 35.

Figure 1.4 compares expected completed family size to actual family size by age. The top left graph implies expected family size in most cohorts was quite close to actual family size. Yet underlying that correspondence, women's expectations of specific family sizes and of remaining childless do not match well with actual incidence. The other three graphs show cohorts consistently underestimated the likelihood of remaining

childless, having only one child or having more than two children. Thus, the close correspondence in the upper left graph is primarily due to the large numbers of women expecting and having two children. Across this particular range of the cohort fertility distribution, the modal and average family size was two.

Underlying the seemingly close correspondence between expected and actual family size in the top left graph of Figure 1.4, there are differences by educational attainment. Figure 1.5 shows the expected family size of women in each cohort at ages 23 to 26 compared to their average actual completed family sizes.[7] Women in each cohort with less than a high school education had expectations that were systematically lower than their actual fertility. High school educated women and those with some college appear to have had expectations that approximate their cross cohort fertility patterns quite well and women with a four year college degree slightly over estimate their fertility, but not to the extent that the least educated women under estimate theirs.

In both Figures 1.4 and 1.5, there is a slight U-shaped pattern in the completed family size series for all 20 to 23 year olds (Figure 1.4 top left graph) and for college educated women (Figure 1.5 lower right graph). Interestingly, expectations at ages 20 to 23 (top left graph in Figure 1.4) and expectations of women with a four year college degree at ages 23 to 26 (lower right graph in Figure 1.5) appear to match the U-shaped pattern reasonable well. This suggests the cohorts born in the early to mid 1960s did anticipate slightly larger families than the women born in the mid 1950s had. Indeed, this is one of the few comparisons in which successive cohorts of women do appear to have anticipated cross-cohort changes in childbearing behavior. At ages 20 to 23, average

[7] This comparison had to be made among women who were childless at ages 23 to 26 rather than earlier because it relies on cross-sectional data and educational attainment cannot be reliably determined before most women have finished college.

expected cohort family size changes from 1.91 children in the 1955 cohort to 2.34 children in the 1971 cohort. The inflection point in the average actual cohort family size series also occurred at the 1955 cohort; actual family size reached a low of 2.00 children and by the 1964 cohort (where the data series ends) had reached 2.09 children. The average expected family size for the 1964 cohort was 2.10.

Table 1.2 contains the results of the occupational characteristics analysis. I present these results as average cross-cohort differences rather than individual cohort differences because there was vary little cross cohort variation in the relationships between expected and actual fertility and occupational characteristics. Appendix Table A1.2 contains the means and standard deviations of all characteristics for all groups (women who expect, are uncertain, expect never, already have a child under age 6, already have a child over age 6, expect to have a child within the next 5 years, expect to postpone, did have a child within 5 years, did postpone) so that the reader may construct any comparisons desired. All figures (differences reported in Table 1.2 and the means and standard deviations reported in Table A1.2) are adjusted for race, ethnicity, educational attainment, age at marriage, current age, and marital status (divorced, separated, widowed or currently married).

Table 1.2 presents a clear pattern: the differences in occupational characteristics between childless women and those who have already had children are generally larger than the differences in occupational characteristics among childless women based on their expectations of future childbearing. That is, the differences reported in each column are larger than the difference between the figures in the left and right column of any row. For example, in the second row of figures in the top panel of Table 1.2, both childless

women who expect to have children and those who expect never to have children work in occupations that pay approximately $10 more per week (in real 1982-84 dollars) than women who had their first child within the last 6 years, which implies virtually no difference in real mean occupational wages among childless women by expectation.

Although, given the large number of observations, the differences in mean occupational characteristics between women who expect to have children and those who do not are nearly all significant (see Appendix Table A1.2), few remain significant after controlling for race, ethnicity, educational attainment, marriage age, current age, marital status and cohort labor force participation. For example, the difference in raw real mean occupational wages between women who expect to have children and those who expect never to have children is $7.12. However, after controlling for these other factors, the difference due to childbearing expectations is only $0.33 and the estimates imply real mean occupational wages are *higher* in the occupations held by women who expect to have children. Women who expect to have children are more likely to work in occupations with a higher proportion of female employees, but there is little evidence of systematic selection into family friendly jobs or lower wage jobs prior to the birth.

This same conclusion holds when comparing childless women who expect to have children in the next five years and those who expect to postpone. When other factors are controlled for, the estimated differences in mean occupational characteristics by expectation (the row differences in the lower panel of Table 1.2) do not reach conventional levels of statistical significance. The raw means reported in Appendix Table A1.2 suggest childless women who expect to have children earlier may be somewhat less likely to be employed (7 percentage point lower labor force participation

rate) and may work in occupations with slightly shorter work weeks (0.97 fewer hours per week on average) but these differences are small when compared to the labor force participation rate and mean hours per week among women who have had children.

Discussion and Conclusion

Although, in keeping previous studies of expectations at the cohort level, the foregoing analyses indicate the level of motherhood and completed family size expectations may have been a decent approximation of actual fertility; with few exceptions the cross cohort trends indicate women did not anticipate the patterns of actual fertility which prevailed in the latter half of the twentieth century. From the 1952 to 1972 cohorts, the proportion of women who ever became mothers was constant. Yet, the proportion of women ages 20 to 23 who expected to become mothers was increasing. From the 1935 to the 1956 cohorts the proportion of women who postponed childbearing was substantially higher than the proportion who expected to postpone across all age groups, except among the 1951 to 1956 cohorts at ages 27 to 35.

The only measure by which cohort expectations appeared to lead changes in cohort fertility is completed family size but this is likely due to the strong modality of two child families over the time period considered. In nearly all cohorts, expectations of large families (three or more children) were significantly lower than the actual occurrence of large families. Expectations also under estimated the percentage of single child and childless families across cohorts. Also, the least educated women in all cohorts systematically underestimated their completed family size.

With respect to occupational characteristics, where differences exist they are largest between childless women and mothers. There is little evidence of systematic

differences in the occupations held by childless women according to their expectations of motherhood or first birth timing. These findings suggest most of the differences observed between childless women and mothers results from job changes at or after the first birth.

The fact that no systematic difference was found in occupational characteristics between women by expectations raises the question: who are the women who expect never to have children or who expect a late first birth? In the simple descriptive statistics presented in Table 1.1 it seemed many of our priors about the childless career women did not apply to women who expect never to have children. Unfortunately for women who expect to postpone their first birth there is little information available in the CPS data beyond the descriptive statistics in Table 1.1. However, in the 1998 survey, the expectations supplement included a follow up question about the influences behind the expectations of having (or not having) children. Reponses to this question are tabulated by motherhood expectation in Table 1.3. Since this information was only surveyed in 1998 it cannot be compared across cohorts and ages alongside the rest of the analysis but to the extent that some of these influences may be constant across cohorts and time, the tabulations in Table 1.3 may be informative.

Not surprisingly, a high proportion of childless women who say they will never have children indicate medical concerns are an influence (25.67 percent of those who never expect to have children as compared to 10.86 percent of those who are uncertain about having children). However, those who expect never to have children are also more likely to reference childcare concerns, and are *less* likely across all age groups to reference ability to afford children. Career, job, and educational decisions are no more important among the "never" group than among the "expect" and "uncertain" groups.

With this additional information, it is less surprising that there were few differences in occupational characteristics by expectation.

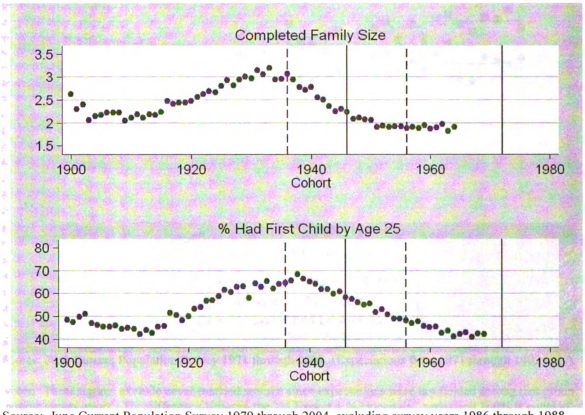
The foregoing analyses are subject to (at least) three important limitations. First, although efforts were made to restrict the influence of changing marriage behavior, the cross-cohort trends presented are arguably still confounded by changes in the timing of marriage which were occurring over this time period as well. Since expectations data for single women is available in only a subset of survey years the importance of this problem is difficult to evaluate.

Second, the shortest forecasting horizon considered in the expectations data is five years. Any changes in expected timing of births across cohorts over shorter intervals cannot be captured. In the occupation characteristics analysis, the long forecasting horizon may be part of the reason no significant differences were found among those who expect a birth in the next five years and those who expect to postpone. Selection could be occurring before the birth but only within a year or so (e.g. around the time the pregnancy begins or when the couple is trying to conceive) and thus is not apparent in these analyses. Selection in and out of the labor force and across jobs within twenty months of the birth and up to 1.5 years after is directly examined using a different data set in Chapter 2.

Third, since the level of analysis for the job characteristics considered is the occupation, selection into certain types of jobs within a given occupation cannot be captured. This concern is somewhat mitigated by the use of detailed occupation codes to reduce within category variance in the nature of the work. Significant differences were found between mothers and childless women for nearly all occupational characteristics.

Figures and Tables

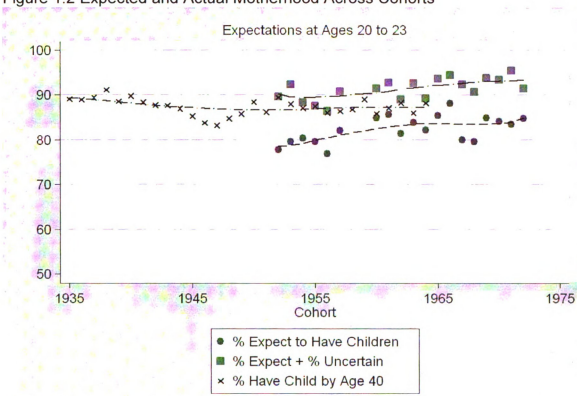
Figure 1.1 Data Coverage Across Secular Trends in Family Size and Birth Timing



Source: June Current Population Survey 1979 through 2004, excluding survey years 1986 through 1988.

Notes: These graphs include all women regardless of past or current marital status. Prior to 1979 and in 1986 through 1988 the CPS surveyed family size among ever married women only so these years are excluded from these figures. Completed family size is measured as the total number of children ever born to women age 40 and above. The solid lines indicate the earliest and latest cohorts included in the analysis when comparing expectations at 0 to 3 years of marriage among women in their twenties. The broken lines indicate the earliest cohorts and latest cohorts included in the analysis when compared at ages 27 to 35.

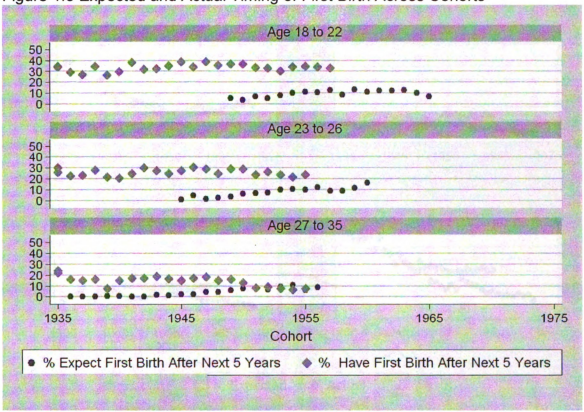
Figure 1.2 Expected and Actual Motherhood Across Cohorts



Source: June Current Population Survey 1971 through 2004. (Expectations from 1971 through 1992 only).

Notes: These figures exclude never married women since expectations were not fielded among that group in most survey years. The difference between the "% Expect + % Uncertain" series and 100% is equal to the percentage of women who expect never to have children. The right panel includes expectations of women in their twenties within three or fewer years of their first marriage.

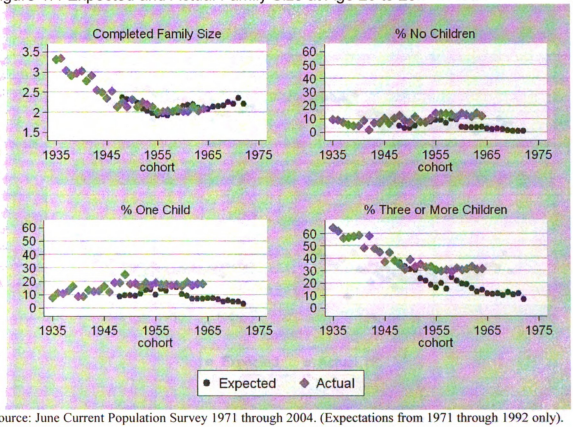
Figure 1.3 Expected and Actual Timing of First Birth Across Cohorts



Source: June Current Population Survey 1971 through 1995. (Expectations from 1971 through 1983 only).

Notes: The figures plot the percentage of women who expect to have children but not in the next five years against the percentage who actually delayed their first birth for five years. Ages indicate both the age at which the expectation was given and the age at which the five year span begins (e.g. a representative women in the lower graph may have been 28 when here expectation was surveyed and would have responded about her expected fertility between age 28 and 33. Expectations data are restricted to currently married childless women and actual fertility data are restricted to ever married women for comparability. Marriage duration is not restricted in these figures; women in the 27 to 35 group could be just married or could have married in their early twenties.

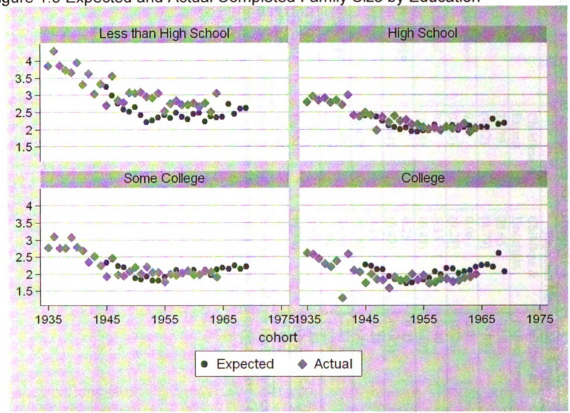
Figure 1.4 Expected and Actual Family Size at Age 20 to 23



Source: June Current Population Survey 1971 through 2004. (Expectations from 1971 through 1992 only).

Notes: Expectations and actual fertility data are restricted to ever married women and include expectations given at ages 20 to 23. Completed family size is measured after age 40.

Figure 1.5 Expected and Actual Completed Family Size by Education



Source: June Current Population Survey 1971 through 2004. (Expectations from 1971 through 1992 only).

Notes: Expectations are measured at 23 to 26 years of age. Completed family size is measured after age 40.

Table 1.1 Sample Statistics for Chapter 1

	Expected Motherhood Sample				Expected Timing of First Birth Sample		
	Childless & Expect	Childless & Uncertain	Childless & Expect Never	Mothers w/ Child <6yrs	Expect within Next 5 Years	Expect to Postpone	Mothers w/ Child <6yrs
Age	25.79	28.65	32.03	27.41	22.91	21.95	27.50
	(4.12)	(4.79)	(5.38)	(4.47)	(3.13)	(2.42)	(4.18)
< High School	0.04	0.06	0.07	0.09	0.07	0.06	0.08
	(0.21)	(0.23)	(0.26)	(0.29)	(0.25)	(0.24)	(0.28)
High School	0.37	0.35	0.40	0.45	0.44	0.49	0.44
	(0.48)	(0.48)	(0.49)	(0.50)	(0.50)	(0.50)	(0.50)
Some College	0.27	0.25	0.25	0.24	0.26	0.23	0.24
	(0.44)	(0.43)	(0.43)	(0.42)	(0.44)	(0.42)	(0.43)
College +	0.33	0.34	0.28	0.23	0.23	0.21	0.24
	(0.47)	(0.48)	(0.45)	(0.42)	(0.42)	(0.41)	(0.43)
Marriage Age	22.49	23.14	23.11	21.88	21.78	20.82	21.88
	(3.41)	(3.86)	(4.20)	(3.43)	(3.07)	(2.32)	(3.32)
Labor Force Participation	0.86	0.87	0.83	0.55	0.79	0.86	0.55
	(0.35)	(0.34)	(0.37)	(0.50)	(0.41)	(0.35)	(0.50)
Observations	17,046	3,417	7,924	178,094	4,638	563	35,022

Notes: Not all women who provided their expectations of ever having children were asked about the timing of births. Therefore the values in the "Expect" column are *not* equal to the mean values among women who expect to have a child in the next five years and those who expect to postpone.

Table 1.2 Estimated Average Differences in Labor Force Participation and Occupational Characteristics by Expected and Actual Motherhood and Timing of First Birth

	Expect – Moms <6yrs	Never – Moms <6yrs
In Labor Force	0.30**	0.22**
	(0.00)	(0.01)
Ave. Wkly Wages in Occ.	9.57**	9.24**
	(1.75)	(1.96)
Average Hours in Occ.	0.88**	0.76**
	(0.16)	(0.18)
% Work Part-Time in Occ.	-2.06**	-1.28**
	(0.39)	(0.46)
% of Weeks per Year P.T. in Occ.	0.41	0.34
	(0.28)	(0.32)
Ave. Days per Week in Occ.	0.14**	0.11**
	(0.01)	(0.01)
% Have Flextime in Occ.	0.01**	0.01**
	(0.00)	(0.00)
% Female in Occ.	-1.78**	-4.54**
	(0.28)	(0.32)
% Mothers in Occ.	-1.92**	-1.83**
	(0.05)	(0.06)
	Expect Early – Had Early	Expect to Postpone – Had Early
In Labor Force	0.32**	0.35**
	(0.02)	(0.02)
Ave. Wkly Wages in Occ.	-4.35	-1.34
	(4.08)	(6.50)
Average Hours in Occ.	-0.97**	-0.58
	(0.37)	(0.65)
% Work Part-Time in Occ.	2.15*	1.92
	(0.91)	(1.62)
% of Weeks per Year P.T. in Occ.	0.77	1.32
	(0.64)	(1.07)
Ave. Days per Week in Occ.	-0.05*	-0.06*
	(0.02)	(0.03)
% Have Flextime in Occ.	0.02*	0.04*
	(0.01)	(0.02)
% Female in Occ.	-2.70**	-3.45**
	(0.60)	(1.07)
% Mothers in Occ.	-3.62**	-3.66**
	(0.16)	(0.28)

Notes: See Appendix Table A1.2 for number of observations, means and standard deviations of all occupational characteristics. This information can be used to construct any test statistic desired. The differences reported above are based on regressions which control for race, educational attainment, marriage duration, age, marital status and cohort labor force participation. Means reported in Table A1.2 are raw means.

Table 1.3 Self Reported Influences Affecting Birth Expectations

	Expect to Have a Child		Uncertain About Having a Child		Expect Never to Have a Child	
	All	Age 24-27	All	Age 24-27	All	Age 24-27
Can Afford	34.31%	37.21%	20.81%	21.49%	17.41%	25.97%
Age	17.53%	15.27%	n/a			
Want Both a Boy and A Girl	16.91%	17.63%				
Future Career Goals	14.69%	15.54%	14.45%	16.96%	12.91%	17.95%
Educational Goals	10.22%	9.00%	11.58%	7.41%	6.19%	8.81%
Expectations of Family/Friends	12.57%	12.62%	n/a			
To be Closer to Family	9.81%	11.19%				
Job/Employment Situation	31.43%	34.46%	22.08%	25.76%	15.51%	17.63%
Like Children	48.77%	48.45%	n/a			
Other Considerations	20.75%	21.75%				
Spouse Wants Children	22.21%	27.86%				
Child Care Concerns	n/a		4.24%	4.60%	12.91%	2.37%
Effect on Relationship/Marriage			4.14%	4.62%	2.78%	3.99%
Uncertain About Future Spouse			42.15%	44.27%	14.94%	16.80%
Medical/Health Reasons			10.86%	9.59%	25.67%	17.80%
Other Considerations			19.03%	17.14%	24.65%	24.86%
Satisfied with Current Family Size			2.58%	3.40%	8.33%	7.62%
Housing Space Concerns			3.18%	3.70%	1.36%	3.68%
Spouse Does not Want a Child			2.47%	3.74%	5.92%	5.23%
Stress of Raising Children			7.70%	8.17%	9.32%	11.41%
Time for Leisure/Social Activities			5.61%	8.17%	8.17%	9.34%
Plan to Adopt			n/a		1.18%	0%
Observations	3,523	830	1,031	182	1,487	187

Notes: The sample included never married women.

Appendix A1

Description of Data Sources

Chapter 1 uses assorted years of data from the 1971 through 2004 Current Population Survey (CPS) March Annual Social and Economic Study, May Work Schedules Supplement and June Marriage and Fertility Supplement. The CPS is a nationally representative survey of 60,000 households. Basic labor force data are collected monthly and special topics information is collected in periodic supplements.

The June Marriage and Fertility Supplement is the source for all actual and expected fertility data. Years used include 1971, 1973 – 1977, 1979 – 1983, 1985 – 1988, 1990, 1992, 1994 – 1995, 1998, 2000, 2002 and 2004. Since 1971 the June CPS Supplement has collected fertility histories from ever married women. Beginning in 1976, never married women were also surveyed, however not all surveys during the 1980s included never married women. Women of childbearing age (generally 14 to 44) are asked how many children they have ever had. Through 1995 they are also asked the year of their first birth and the year of their first marriage. Using this information in conjunction with age at time of the survey, I construct cohort age specific fertility histories for women age 40 and older (the majority of whom have completed childbearing) and can condition on timing and duration of marriage as well as childlessness up to a given age.

Source and Use of Expectations Data

The June Supplement also surveys fertility expectations among women of childbearing age. Expectations were surveyed in 1971, 1973 – 1977, 1979, 1981, 1983, 1985 -1988, 1990 and 1992. Expectations were also surveyed in 1998 but the questions

used changed slightly and tabulations suggested data from that year may not be comparable to previous years. Although proxy respondents over the age of 15 are permitted to answer other questions in the CPS basic and supplement surveys the expectations questions had to be answered by the respondent herself. In most years eligible respondents were between the ages of 18 and 39 but the lower bound was as low as 14 in the early surveys and the upper bound was 44 in the early 1980s. Since expectations are tabulated by cohort and by age throughout most of the analysis, these differences are not generally a problem. In the early surveys and in assorted years in the 1980s, expectations questions were fielded to ever married (and sometimes currently married) women only. Given these data limitations and the arguments for examining ever married and never married women separately presented in the main body of this paper, I exclude never married women from the analysis.

The expectations questions used in the analysis include:

1. *Looking ahead, do you expect to have any (more) children?*
2. *How many (more) do you expect to have?*
3. *How many (more) do you expect to have in the next 5 years?*

Possible responses to the first question are "yes", "no" and "uncertain". These responses are tabulated among childless women to generate the expectations of motherhood data.

In most years the second question is fielded as a follow-up to Question 1 and asked only of women who respond "yes" to Question 1. In some survey years Question 1 was not fielded and Question 2 was the first question in the expectations battery. Possible responses to Question 2 in most survey years are numbers between "1" (meaning the respondent expects to have one child) to "6" (meaning the respondent

expects to have six or more children).[8] When Question 1 is not fielded "0" (meaning the respondent expects never to have children) is included among the possible responses. Yet, in those survey years, "uncertain" is not a possible response to Question 2. Furthermore, tabulations of the "0" responses in years when Question 1 was not fielded do not appear to be comparable to the "Never" response to Question 1 in other years. Therefore, I include only years in which both Question 1 and Question 2 were fielded.

Using responses to Questions 1 and 2, I construct the family size expectations data. As mentioned in the main body of the text, it is not possible from these questions to determine how many children women who respond "uncertain" to Question 1 expect to have. To address this problem I assume women who respond "uncertain" to Question 1 have underlying expectations equal to the mean of expected family size among those who respond "yes" to Question 1 and those who respond "No". Those who respond "No" to Question 1 implicitly indicate an expected family size of "0" and those who respond "Yes" report their expected family size in response to Question 2.

Question 3, in conjunction with Question 1, provides the source for the first birth timing questions. Question 3, like Question 2, is fielded only to women who respond "Yes" to Question 1. Possible responses to Question 3 include "0", "1", "2" or "3". Women who respond "Yes" to Question 1 and "0" to Question 3 are coded as expecting to postpone their first birth. That is, these women expect to have at least one child eventually but they expect to wait at least five years to have their first child. Unfortunately Question 3 was only fielded in survey years 1973 – 1974, 1975 – 1977,

[8] As in Question 1, Question 2 asks the respondent to provide the expected number of additional children (i.e. children they have already had are not counted in the expectation). Since responses to this question are tabulated for childless women only throughout the analysis, the interpretation provided here is specific to childless women.

1979, 1981 and 1983. Therefore, throughout the analysis the range of cohorts across which I am able to comparing first birth timing expectations is smaller than the range across which I can compare other expectations. Also, Question 3 was only fielded to *currently* married women whereas Questions 1 and 2 were usually fielded to *ever* married women (and in some years to all women regardless of marital status). Information on separations, divorces and spousal deaths are not available consistently enough to match to restrict the actual first birth timing data to only those women who were currently married at the time expectations were surveyed. As in the rest of the analysis, I do restrict actual fertility data to *ever* married women but the inability to restrict to women who were *currently* married at the age expectations were surveyed may affect the comparisons between expected and actual first birth timing.

Construction of Cohort Actual Fertility Data

Using the cohort birth and marriage histories of women ages 40 and older it is straightforward to construct measures of actual fertility. Throughout the analysis I restrict the actual fertility data to ever married women. When expectations are tabulated by age group I restrict the actual fertility data to women who married for the first time before the age at which expectations were surveyed. When expectations are tabulated by marriage duration I restrict the actual fertility data to women for whom the specified number of years (e.g. 0 to 3) had elapsed between their first marriage and the time at which actual fertility is measured.

The questions used to construct actual motherhood and family size data are:

4. *When was (respondent's) first child born?*
5. *When did (respondent) get married for the first time?*

6. *How many live births, if any, has (respondent) ever had?*

Unlike the expectations questions, these questions may be answered by a proxy respondent. Construction of actual motherhood data and completed family size data is straightforward. To construct the actual postponement measure I take all women who were childless and had married for the first time before the age at which expectations were surveyed, and code those who do not have their first birth in the ensuing five years but do have at least one birth before age 40 as having "postponed" their first birth. Again, I am unable to precisely observe marital status at the age when the expectations were surveyed, so I am comparing the fertility history of ever married women who married for the first time before the age at which expectations were surveyed to the expectations of currently married women.

As mentioned, to ensure I have observed all first births I use only women age 40 and older. Arguably restricting to an older age would be more precise since the average woman is still biologically capable of bearing children at age 40. Yet since the vast majority of first births occur before age 40 this assumption is unlikely to affect cohort averages, and it allows for comparison across a broader range of cohorts.

Sources and Use of Occupational Characteristics Data

The March Annual Social and Economic Study and May Work Schedules Supplement are used to obtain estimates of occupational characteristics at the time expectations were surveyed. To do so I calculate the mean value of each characteristic by detailed occupation, year and educational attainment among men and women of all ages who reported working in that occupation in the week before the survey. These variables are then matched to women in the expectations data by year, educational attainment, and

detailed occupation. Prior to 2003 the CPS used the same occupational codes used in the Decennial Census. Table A1.1 provides a sample listing of occupations and codes along with means of the occupational characteristics across years and educational levels. Mean weekly wages are normalized to 1982-84 dollars using the CPI-U.

Table A1.1 Selected Occupational Categories and Mean Characteristics

[A] The number of observations listed includes women only. To calculate proportion of mothers in the occupation, the percentage of female workers who are mothers of children under age 4 is first calculated and then multiplied the estimated percentage of female workers in the occupation.

Notes: Not all occupational characteristics questions were fielded in all years. The observations reported in the last column include all persons in the occupation; the observations reported in the last row include all persons across all listed occupations with non-missing data for each characteristic. Because occupational codes change across years the examples provided here include only women surveyed in 1983 through 1991 when consistent codes were used across years. The actual data include women surveyed in 1971 through 1992 and occupations are matched in the same survey year so no coding crosswalk across years was used. Occupational characteristics are matched to expectations data by detailed occupation code, educational attainment, and year. Since the May Supplement was not fielded in 1990 or 1992, the 1989 and 1991 surveys are used to generate occupational characteristics data to match with the June 1990 and 1992 data.

Appendix A1 Figures and Tables

Table A1.1 Selected Occupational Categories and Mean Characteristics

	From March Supplement		From May Supplement					From June Supplement	Observations 1983-1991 only		
	Real Mean Wkly Wage	% Weeks P.T. per Yr	Mean Hrs per Week	% Work Part Time	Mean Days per Week	% Have Flextime	% Female	% Mothers w/ Child <4	Mar.	May	Jun.
Managers, Marketing/Advertising	$623.86 (340.81)	3.31 (15.77)	46.75 (11.43)	5.90 (23.57)	5.12 (0.54)	25.62 (43.68)	28.71 (45.25)	2.01 (7.33)	1,922	1,902	447
Managers, Medicine and Health	$486.68 (280.31)	9.53 (27.09)	44.82 (12.36)	10.06 (30.09)	5.02 (0.67)	16.13 (36.80)	47.85 (49.96)	2.11 (9.84)	2,413	2,351	942
Elementary School Teachers	$338.90 (216.79)	17.52 (35.55)	40.32 (11.22)	16.06 (36.72)	4.85 (0.82)	2.02 (14.07)	85.36 (35.35)	4.90 (19.85)	7,526	6,853	4,382
Secondary School Teachers	$378.78 (192.03)	14.46 (32.53)	42.33 (12.52)	13.17 (33.82)	4.91 (0.79)	2.29 (14.95)	52.53 (49.94)	3.04 (12.27)	6,610	6,082	2,277
Secretaries	$229.90 (304.31)	21.09 (38.53)	36.23 (9.90)	24.35 (42.92)	4.79 (0.75)	13.80 (34.49)	99.05 (9.71)	6.37 (24.30)	20,596	19,006	15,460
Receptionists	$164.18 (101.67)	36.36 (45.51)	33.57 (11.56)	36.37 (48.11)	4.60 (1.01)	8.35 (27.68)	97.34 (16.08)	6.65 (24.57)	3,849	3,614	2,822
Waitresses	$120.59 (125.65)	60.02 (44.71)	29.25 (12.85)	60.36 (48.92)	4.37 (1.32)	11.80 (32.27)	86.70 (33.96)	7.71 (24.68)	8,612	7,398	4,756
Cooks, Except Short Order	$135.06 (149.99)	45.64 (46.37)	34.20 (14.71)	43.50 (49.58)	4.78 (1.15)	9.90 (29.87)	53.42 (49.89)	3.00 (12.30)	9,139	8,148	3,055
Food Counter, Fountain	$76.62 (75.41)	79.14 (37.02)	21.91 (11.51)	81.99 (38.44)	4.07 (1.40)	11.22 (31.59)	77.66 (41.66)	5.40 (19.77)	2,695	2,050	779
Textile Sewing Machine Operators	$164.50 (114.61)	15.44 (29.72)	37.56 (8.49)	21.43 (41.04)	4.93 (0.51)	5.11 (22.02)	91.77 (27.49)	4.76 (20.36)	4,303	3,596	2,561
Shoe Machine Operators	$223.63 (699.40)	18.60 (31.99)	39.03 (7.13)	18.30 (4.95)	4.95 (0.32)	0 (0)	71.23 (45.35)	5.02 (18.29)	417	292	146
Laundry &Dry Clean Machine Ops.	$156.18 (105.20)	31.04 (42.75)	35.89 (12.55)	34.47 (47.56)	4.85 (0.87)	9.71 (29.67)	65.84 (47.45)	3.40 (14.59)	1,117	931	446
Observations	97,781	98,271	88,703	88,703	84,204	84,863	89,177	51,552[A]			

Sources for data in table: May Current Population Survey 1983, 1985 – 1987, and 1989 – 1991.
Sources for Data used in Analysis: May Current Population Survey 1971, 1973 – 1977, 1979, 1981, 1983, 1985 – 1987, and 1989 – 1991.

Table A1.2 Means, Standard Deviations, and Sample Sizes for Occupational Characteristics Analysis

	Expect	Never	Uncertain	Moms < 6yrs	Moms ≥ 6yrs	Expect Early	Expect to Postpone	Have Early	Postpone
In Labor Force	0.86	0.83	0.87	0.55	0.64	0.79	0.86	0.55	0.60
	(0.35)	(0.37)	(0.34)	(0.50)	(0.48)	(0.41)	(0.35)	(0.50)	(0.49)
	[17,046]	*[7,924]*	*[3,417]*	*[38,561]*	*[111,146]*	*[4,638]*	*[563]*	*[38,046]*	*[3,899]*
Ave. Wkly	$302.20	$309.32	$321.05	$267.46	$258.55	$252.80	$246.89	$261.53	$331.55
Wages in Occ.	(152.63)	(158.43)	(162.22)	(145.63)	(128.22)	(115.26)	(121.48)	(133.72)	(215.98)
	[13,671]	*[6,068]*	*[2,663]*	*[21,926]*	*[69,740]*	*[3,847]*	*[498]*	*[22,009]*	*[2,284]*
Average Hours	34.15	33.84	34.56	26.23	27.66	31.76	32.73	26.04	28.43
in Occ.	(10.89)	(11.68)	(11.12)	(14.54)	(14.24)	(11.22)	(9.97)	(14.46)	(15.02)
	[16,729]	*[7,727]*	*[3,332]*	*[37,728]*	*[108,565]*	*[4,585]*	*[558]*	*[37,274]*	*[3,798]*
% Work Part-	35.00	35.96	33.61	54.56	51.13	40.07	38.63	55.01	48.46
Time in Occ.	(28.53)	(30.13)	(28.90)	(35.95)	(35.24)	(29.87)	(26.98)	(35.73)	(37.29)
	[16,729]	*[7,727]*	*[3,332]*	*[37,728]*	*[108,565]*	*[4,585]*	*[558]*	*[37,274]*	*[3,798]*
% Weeks per Yr	24.89	23.57	23.01	27.86	27.52	27.38	28.76	28.29	22.92
P.T. in Occ.	(18.22)	(18.18)	(17.75)	(19.17)	(19.01)	(18.20)	(18.80)	(19.26)	(17.25)
	[12,265]	*[5,615]*	*[2,399]*	*[20,333]*	*[66,009]*	*[3,196]*	*[400]*	*[20,403]*	*[2,249]*
Ave. Days per	4.52	4.56	4.56	4.41	4.44	4.24	4.22	4.39	4.55
Week in Occ.	(0.48)	(0.49)	(0.47)	(0.50)	(0.48)	(0.39)	(0.37)	(0.49)	(0.52)
	[6,376]	*[2,958]*	*[1,271]*	*[13,325]*	*[39,963]*	*[3,114]*	*[403]*	*[13,132]*	*[1,107]*
% Have Flex-	18.39	18.74	19.58	16.19	15.28	12.58	13.60	15.87	18.06
time in Occ.	(15.48)	(16.15)	(16.47)	(15.91)	(15.79)	(12.96)	(17.28)	(15.51)	(17.33)
	[4,622]	*[2,247]*	*[983]*	*[8,794]*	*[26,025]*	*[785]*	*[102]*	*[7,988]*	*[1,022]*
% Female in	68.18	66.00	66.07	71.43	71.14	74.18	73.63	72.16	67.65
Occ.	(27.36)	(28.03)	(27.77)	(22.91)	(23.79)	(25.62)	(27.13)	(22.56)	(24.30)
	[16,827]	*[7,804]*	*[3,363]*	*[38,231]*	*[110,152]*	*[4,624]*	*[561]*	*[37,764]*	*[3,864]*
% Mothers in	4.78	4.47	4.39	6.65	4.98	5.43	5.30	6.47	6.30
Occ.	(3.91)	(3.97)	(3.85)	(6.12)	(3.66)	(3.94)	(4.15)	(5.70)	(6.69)
	[15,482]	*[7,082]*	*[3,010]*	*[35,335]*	*[103,965]*	*[4,624]*	*[561]*	*[35,695]*	*[3,471]*

Note: The differences reported in Table 1.2 controlled for race, ethnicity, educational attainment, marital status, age at marriage, current age and cohort labor force participation rate. These reported means do not.

CHAPTER 2

Job Continuity Among Expecting and New Mothers

Introduction

Mother's employment decisions around birth influence lifecycle earnings and gender based economic equity. Job changes and labor force exits likely contribute to differences in wages between mothers and childless women (the family wage gap) and between men and women (the gender wage gap). Mothers may have lower wages than men or women who never have children because their life cycle labor supply is punctuated with more absences (Ben-Porath 1967). Women who quit their jobs for any reason lose firm-specific human capital. If they exit the labor force for an extended period of time their skills may deteriorate (human capital deterioration). In order to maintain employment women may seek out jobs with flexible working time policies and other family friendly characteristics, and they may need to trade off wages, advancement potential, or both to get them.

Mother's employment behavior may also influence child development. A substantial body of empirical evidence suggests a positive relationship between household income and child outcomes. A mother's ability to maintain paid employment over the course of her pregnancy and while her child is young will affect the level of household income. However, maternal employment reduces the amount of her time available to care for her new baby, which may in turn have negative effects on child development. For example, Waldfogel et al.(2002) and Baum (2003) find children whose mothers worked in the first year after they were born have lower standardized test scores through preschool and elementary school.

From the employer's point of view quits can be costly. If flexible working time policies and practices such as paid and unpaid leave improve job continuity and lead to a

net reduction in costs, then offering such policies would be efficient. Yet if the offer of flexible working time policies leads women with a high demand for flexibility to seek employment with the firm (adverse selection) then the costs of flexible policies and practices may outweigh the benefits. Findings in Chapter 1 suggested women who expect to have children are no more likely than those who do not expect to have children to select occupations with family friendly characteristics early in their careers. However, selecting out of less family friendly jobs and into more family friendly jobs may occur closer to the time of birth or within occupations.

This paper addresses the following two questions: First, how prevalent are quits prior to and just after having a child? Second, are women less likely to quit jobs which provide paid or unpaid leave or a part-time work schedule? Of women employed one year before *pregnancy* (or 21 months before birth), my estimates suggest 57.4 percent remain in the same job 18 months after the birth. Of the remaining 42.6 percent, approximately one-third leave their pre-pregnancy job for a new job and two-thirds leave the labor force. Findings suggest women who are eligible for FMLA leave and those whose pre-pregnancy jobs were part-time are less likely to change jobs between the twenty-one months preceding and eighteen months following a birth. Those eligible for FMLA leave are less likely to quit for any reason prior to the birth. Although women who change jobs are more likely to obtain paid leave on the new job than to lose it, I do not find any evidence of higher quit rates among women without paid leave.

Conceptual Framework

Job continuity, in this study, is defined as maintaining the same job with the same employer across a specified interval of time. The decision to stay in one's job (maintain

job continuity), change jobs, or leave the labor force can be conceptualized as follows. An individual chooses between non-employment and a set of job opportunities; which are characterized by combinations of wages, hours, and job attributes to maximize utility.

$$U = U(C, l, A; x) \tag{1}$$

C is the quality adjusted level of consumption of both market and home produced goods and services, which is determined by income and time spent in home production as well as productivity in home production. l is the amount of leisure and x is a vector of taste shifters. A is the level of amenities associated with the utility maximizing choice of job or non-employment. Amenities for workers include job attributes J and other non-monetary benefits of work such as socialization and self-efficacy. Amenities for non-workers include utility from being at home, for example, value of greater flexibility and autonomy over time and activities. Increased quantity or quality of home produced goods when not working or when working a reduced schedule are captured in the level of C associated with that choice. Utility is maximized subject to budget and time constraints:

$$Th + Y \geq w(T - h) + E_k \tag{2}$$

$$T = h + l + k \tag{3}$$

Y is income, w is the wage and E_k is the monetary expenditure on child related goods and services. T is the total time available for market work h, leisure l and home production of goods and services including child care k.

I assume the value of a unit of leisure is constant across job and employment choices and home production technology exhibits increasing returns to scale, but does not differ across jobs and employment status. Thus, for a given individual, the differences in the levels of k and l between jobs and when employed and not employed will be

determined by *h* alone. Time allocation across individuals will of course depend on the value of leisure and relative productivity in home production.

Given these assumptions, the individual's gains to changing jobs *V(Chg)* can be expressed as a function of the hours, wages, and job attributes associated with the current and alternative jobs, full income *I,* and the mobility cost M_{chg} associated with job change (Altonji and Paxson 1988). The individual's gains to leaving the labor force *V(Lv)* can be expressed as a function of the hours, wage and job attributes of the current job, amenities associated with non-employment A_h and full income. Labor force exits are assumed to carry no mobility costs.

$$V(Chg) = U(h_1, w_1, J_1, I) - U(h_0, w_0, J_0, I) - M_{chg}$$
$$V(Lv) = U(A_h, I) - U(h_0, w_0, J_0, I) \quad (2)$$

Mothers will choose change jobs if *V(Chg)* is greater than zero and greater than *V(Lv).* Similarly, mothers will choose to leave the labor force if *V(Lv)* is greater than zero and *V(Lv)* is greater than *V(Chg).*

Based on this framework, I choose to focus on quits (job changes and labor force exits) as opposed to re-entry into the labor force or duration of leave as many previous studies have done. Focusing on quits is advantageous because quits are invariant to the interval studied so long as the quit itself is observed in the data. Conversely, a simple re-entry measure would code women who begin a job with little or now employment interruption the same as women who return to the labor force in a new job months later the same way. Since pervious studies have shown women who maintain employment continuity do not experience a motherhood wage penalty (Waldfogel 1997; Fuchs 1995), such a measure is undesirable. Furthermore, most women who return to work at all in the

first year after having a child do so within the first three months (Klerman and Leibowitz 1990, 1994, 1999; Smith and Bachu 1999). Arguably the decision to maintain employment or one's current job with a brief leave will have a greater impact on long run employment outcomes than the decision to take a one month versus three month leave.

Previous Studies

Although, there is a vast literature on the employment decisions of new mothers, few studies have considered job continuity in particular. Still, since the decision to stay in the same job, change jobs, or leave the labor force entirely is closely related to the timing and duration of leaves or labor force separations, the broad return to work literature is relevant to the present analysis. Return to work studies differ with respect to the employment behavior studied and the sample design. Table 2.1 summarizes key characteristics of a subset of studies in the broader literature that were selected to demonstrate these differences. As I will explain, given these differences it is difficult to infer overall conclusions about women's employment behavior, or job continuity in particular.

In the existing literature, employment behaviors studied include employment at a point in time, leave duration in general, instance and duration of unpaid leave in particular, occupation changes, job changes, work schedule changes (for example, part-time to full-time), time of re-entry into the labor force, labor force participation, whether or not a woman returned to the same job, and whether or not she experienced any employment interruption. The employment behavior considered, at least to a certain extent, determines the sample design. For example, Bumpass and Sweet (1980) are interested in employment. They measure employment at specific points in time, rather

than transitions in and out of employment, and can therefore include non-employed women in their sample. Conversely, since both Desai and Waite (1991) and Han and Waldfogel (2003) examine leave duration, they exclude women who are not employed and must designate a time from which to measure leave.

These details are especially important for studying job continuity. Choice of time from which to measure behavior, which I will refer to as the "initial state", determines which women, jobs, employment, and non-employment spells are in the sample. The last job or employment state (employed, unemployed, out of the labor force) observed during pregnancy or the year prior to birth are common initial state choices (e.g. Han and Waldfogel 2003; Joshi and Hinde 1993; McRae 1993; Waldfogel et al.1999). By defining the initial state close to the birth, these studies may miss early job changes or transitions in and out of employment. Omitted transitions will clearly affect estimated job or employment transition rates.

Given enough information, studies with different sample designs can be comparable. For example Glass and Riley (1997) define the initial state as all women working during pregnancy and estimate 84.2 percent of women who gave birth in 1991 and 1992 and worked during pregnancy were employed one year following the birth. Waldfogel (1997) estimates employment one year after the birth among a similar sample of women, but includes non-employed women. She finds 54 percent of all women who gave birth were employed one year following the birth. 63 percent of women in Waldfogel's sample were working during pregnancy. Using this figure to convert Glass and Riley's estimate to the percentage of *all* women working one year after birth yields 53 percent (84.2 x 0.63 = 53), which is nearly identical to Waldfogel's estimate. This

example is a best case scenario. The initial state definitions were clear, and comparable estimates could be constructed from available information. Estimates from studies which use more complex or ambiguous initial state definitions are harder to interpret and compare.

Finally, sample design may also differ with respect to the start and end times of the interval over which employment behavior is observed. Whereas the definition of the initial state designates which women or jobs are included in the sample and which previous transitions are excluded, the definition of the interval determines which subsequent transitions are measured. The beginning of the interval need not be the same as the time at which the initial state is measured, although it often is (e.g. Han and Waldfogel 2003; Wenk and Garrett 1992). Even if two studies use the same definition for the initial state, they may arrive at drastically different estimates of transitions in employment or job changes if they measure transitions over different intervals. Differences in interval studied generally produce sets of estimates that are more easily comparable than estimates produced by studies with different initial state definitions, because they represent different regions of the same distribution of transitions (assuming the sample populations are otherwise comparable).

Excluding potentially relevant job changes before the birth is not only problematic because the behavior is omitted but also because it may lead to endogenous regressors. For example, in a comparative study of women in the U.S., Britain, and Japan, Waldfogel et al. (1999) consider the effect of family leave coverage on the likelihood of returning to the pre-birth job within six months of the birth, and they find family leave coverage is positively associated with returns to work in all three countries.

Yet women may have changed jobs to obtain leave coverage before the initial state was measured (six months prior to the birth). If so, family leave is endogenous in their model.

The extent to which women are selecting into jobs with family leave coverage or paid leave is unknown, in part because very few studies differentiate between returns to the pre-birth employer and job changes. Klerman and Leibowitz (1999) estimate about 60 percent of women return to work in the year and a half following a birth and of those, approximately one-third have changed jobs. However, their sample is drawn from women in the 1979 National Longitudinal Survey of Youth, which covered births in the 1980s. Using the 1969 NLS covering births during the 1970s, Glass (1988) finds 53.5 percent of women who became pregnant during survey waves left the labor force and 12.3 percent changed jobs as compared to 16.4 percent exiting the labor force and 26.5 changing jobs when there was no family transition (pregnancy or marriage).

The findings in both Klerman and Leibowitz (1999) and Glass (1988), and in most of the studies in Table 1.2 are all based on data from the 1970s and 1980s and thus their findings may not generalize to more recent employment behavior. Between 1975 and 1996, the labor force participation rate among all women rose from 45.9 percent to 58.8 percent; and among women with children under age six the rate rose from 38.8 percent to 62.3 percent (Hayghe 1997). This striking change in labor force participation among mothers with young children suggests employment behavior may have been changing during the months preceding and following a birth as well.

The subset of return to work studies which have estimated relationships between employment behavior and availability of part-time work and paid and unpaid leave have

found women with paid leave are likely to work longer into their pregnancy and to return to work later (Joesch 1997), and the availability of liberal unpaid leave and part-time work increases the likelihood of returning to the pre-birth employer (Hofferth 1996). For FMLA, Han and Waldfogel (2003) and Waldfogel (1999) find limited impact on the instance of unpaid leaves, and no evidence of a net change in women's employment.

Empirical Strategy

As stated previously, contrary to most studies in the return to work literature, the dependent variables in my analysis are binary indicators of job changes and labor force exits. These measures follow directly from the conceptual framework laid out in the previous section. They also have practical advantages given common limitations across relevant data sets. The timing of quits is generally easier to assess than the timing of re-entry. Most surveys do not distinguish between time spent on leave and time spent at work. Therefore, many respondents do not report a gap in employment around childbearing or a measured state of non-work to re-enter from (Klerman and Leibowitz 1994). If there is no gap in behavior observed in the data, then the designation of a re-entry time is arbitrary and the term "re-entry" itself is somewhat misleading given what can feasibly be measured. Even if the measure used in the analysis is a discrete indicator of transition behavior rather than duration of leave or time to quit measure, timing must be clearly defined in order to appropriately designate the initial state and determine which transitions fall within the analysis interval.

Although the conceptual framework I have laid out generally leads to multinomial probit or logit estimation, it can also be operationalized in a competing hazard model. Since quitting one's initial job to leave the labor force precludes a quit to change jobs and vice

versa, quit behavior can be modeled in a competing hazard framework where the hazard of each type of quit can estimated separately using Cox proportional hazard estimation and defining jobs that end in labor force exits as censored in the job change estimation and vice versa (Prentice et al 1978; Moeschberger 1978; Cox 1959). As will be explained in the following section, the complex structure of the data make hazard estimation more appropriate than multinomial probit.

To create the dependent variable, I define the initial state as employment in a job that existed at a given previous point in time and in addition to I choose the specific point in time based on patterns in the data which will be presented in the next section. In doing so, I allow each woman who is employed at the time the initial state is defined to contribute at most one observation.[9] This sample design allows me to compare differences in quit rates and relationships between each type of quit, paid and unpaid leave and part-time work schedule in a well defined set of jobs at different points in time. To make such comparisons, I estimate piecewise proportional hazard models allowing the estimated effects of paid and unpaid leave, part-time work schedule and other covariates pertaining to the job to differ before and after the birth.

Data

The analysis sample is drawn from the 1996 through 2005 Household Components of the Medical Expenditure Panel Surveys (MEPS). The MEPS sample is a sub-sample of households participating in the National Health Interview Survey (NHIS). The NHIS is a nationally representative sample of the U.S. civilian non-institutionalized population and includes over-samples of blacks and Hispanics. The MEPS also over

[9] Multiple job holders contribute only the current main job (according to the Current Population Survey definition). The incidence of multiple job holding was quite low (less than 1% of jobs in any initial state definition considered).

samples Asians and low income households. The MEPS consists of five rounds of data collection over a two year period. The Household Component contains socio-economic data including job characteristics of the Current Main Job (analogous to the Current Population Survey definition) and documents other "miscellaneous" jobs held. Start and end dates for all jobs are recorded.

Initially, the sample includes all jobs for all women who had a birth during the survey, have a child age 2 or younger, or have their first prenatal exam during the survey. Not all of these observations are used in all parts of the analysis; again the intial state and interval will determine which jobs are included and excluded.

For any jobs that end during the survey, a reason is recorded. I exclude jobs that ended due to dissolution of the business, retirement or layoff. Only those quits for which the respondent indicated she quit "to take another job" were coded as job changes. Quits the respondent identified as due to "illness or injury", "to have a baby", "to take care of home/family" or "because wanted time off" were all coded as leaving the labor force. Illness or injury quits are included because they likely relate to pregnancy related conditions. The ability to maintain employment through a complicated pregnancy is likely to depend in part on flexible working time policies and practices, especially paid leave. However, these observations constitute fewer than 5 percent of all quits (including dissolution of businesses, retirements and layoffs) and quits to have a baby, to take care of home or family, or to change jobs comprise 86 percent of all quits.

The MEPS is a relatively short panel. Respondents are surveyed five times over the course of two years. Since births happen at all points during the survey, the quit data is constructed of overlapping panels with time measured relative to the birth. Job tenure

information is used to backcast employment behavior. For example, women need not be observed in the panel at 21 months prior to the birth in order to contribute an observation to the analysis sample when the initial state is the job held 21 months prior to birth. However, women who enter the sample at six months after the birth would only contribute observations to the 21 month analysis sample if they were still in their 21 month jobs. Women who quit early and do not enter the sample until six months after the birth would be excluded from the sample, that is, they are fully left censored. As is generally the case, little can be done to recover information about those short spells but given the overlapping panel structure of the data, I have no reason to believe the spells I do observe have a different hazards than the ones I do not. Late entrants are treated as left-truncated spells and their survival rates are adjusted for time at risk but not observed in the data.[10]

Results

Figure 2.1 displays the estimated monthly hazard rate of changing jobs (the broken line) and combined hazard of changing jobs or leaving the labor force (the solid line) among jobs held 21 months prior to the birth over the interval from 21 months before to 1.5 years after the birth. The distance between the two lines represents the hazard of leaving the labor force. The job change hazard is bi-modally distributed with the first peak around one year prior to the birth. Job changes become increasingly rare throughout the pregnancy and the hazard rate does not reach pre-birth levels again until 1.5 years following the birth. Conversely, the hazard of leaving the labor force increases drastically just before the third trimester of pregnancy and peaks at birth. There is a

[10] Specifically, I use the stset command in Stata and specify the "origin" as the time defined as the initial state and the "entry" as the time at which an individual enters the survey.

slight peak in the combined hazard around the start of the pregnancy which is due to a higher rate of job changing one year prior to the pregnancy than during the pregnancy itself and a higher rate of labor force exits at the beginning of the pregnancy than in the second trimester.

Table 2.2 compares estimates of job continuity across different sets of jobs and intervals to estimates provided in previous studies. Overall, I find 57.4 percent of jobs held at 21 months prior to the birth continued on through 18 months after the birth. Of the remaining 42.6 percent, approximately two-thirds left the labor force and one-third changed jobs. The first row in Table 2.2 compares my estimates to Klerman and Leibowitz's (1999) estimates of job continuity for jobs held twelve months prior to the birth over the year before and 1.5 years following the birth among women who had a child between 1978 and 1990. Taken at face value, these estimates indicate women who gave birth more recently are more likely to stay with their pre-birth employer but, among those who quit their jobs, fewer change jobs. Comparing my estimates of job continuity among jobs held at birth from birth to 1 year after to Desai and Waite's (1991) estimates, which were based on births between 1979 and 1985, also suggests the likelihood of remaining with the pre-birth employer has increased over time.

The differences in job changing and labor force exit estimates may be due, in part, different definitions of job changes. Klerman and Leibowitz (1999) code any women who are working in a different job 1.5 years after the birth as having changed jobs, even if they transitioned through non-employment first. My estimates code quits as job changes only if the respondent indicated she was quitting to start a new job. She may or may not be employed at the 1.5 year mark. Also, a respondent who said she was quitting

her job to leave the labor force and was coded as such in my data may have returned to a new job by 1.5 years after the birth. In Klerman and Leibowitz's data, that individual would be coded as a job changer. Unfortunately, because my data are constructed of short overlapping panels, it is not possible to construct a more comparable measure. Thus, from this comparison one may infer job continuity has increased over time but inferring any change in the distribution of quits between job changes and labor force exits is less appropriate.

The differences in hazard rates in the months preceding and following the birth shown in Figure 2.1 and the difference in my own and others estimates of job continuity across sample designs in Table 2.3 highlight the importance of sample design. Table 2.4 provides a comparison to make this point even more clear. Consider a simple data set containing all jobs held 21 months prior to the birth without the overlapping panel structure and truncation in the actual data I use. If we choose to examine quits from 21 months prior to the birth through 18 months following, we would infer 57.4 percent of women kept their jobs, 13.6 percent changed jobs and 29 percent left the labor force over the interval. If instead we considered 21 month jobs from 12 months before the birth to 18 months after, we would omit 5.9 percent (4.6 + 1.3) of 21 month jobs because they had already ended in a quit.

Note that in Table 2.3, the first and last row of figures seem to suggest we miss little by looking at jobs from 12 months to 1.5 years versus 21 months to 1.5 years. Indeed the estimated percentage of job changes is 12.8 percent in the shorter interval and 13.6 percent in the longer interval. However, this comparison is not based on a well defined population of jobs. The 12 month to 1.5 year estimates are based on all jobs held

12 months prior to the birth whereas the 21 month to 1.5 year estimates are based on all jobs held 21 months prior to the birth.

Returning to Table 2.4 and looking at 21 month jobs only, the estimated percentage of women staying in their initial job over the 21 to 18 month interval is 57.4 percent as compared to 61.0 percent over the 12 to 18 month interval. Moreover, approximately one-third of all job changes are missed when the interval is shortened from 21 months before to 12 months before. Looking only at the interval from birth to 18 months after, we would omit over 25 percent of 21 month jobs which constitute 52 percent of all job changes and 65 percent of all labor force exits among 21 month jobs between 21 months before and 18 months after the birth..

Clearly these omissions change the estimates of job continuity based on remaining jobs in each interval but as long as the intervals are reported and the number of jobs remaining is reported, these differences are interpretable and the only source of misclassification is due to truncated spells. However, if instead of analyzing the remaining 21 month jobs only at each interval we were to examine the number of total jobs which exist at the beginning of each interval, misclassification becomes a problem. Of the original 1,922 women employed at 21 months prior to the birth 88 have new jobs by the year prior to the birth and these jobs are now at risk for a quit. If the relevant quit was the first quit these women will be misclassified. Similarly, at birth, approximately 7.1 percent (or about 136) of the original 1,922 women have new jobs and could end up in any of the three categories by the 18^{th} month. Those who previously exited the labor force may also be re-employed by the beginning of the next interval, although since the intervals considered here all begin at or before birth, re-entry is unlikely.

For these reasons, I define the initial state for the remainder of my analysis as jobs held 21 months prior to the birth. Since one of the main purposes of this study is to examine the relationships between paid leave and job changes, and since a large amount of job changing occurs prior to the pregnancy, defining the initial state as jobs held 21 months prior to the birth is more appropriate than jobs held closer to the birth. In particular, it captures the initial peak in job changing, but does not extend so far prior to the pregnancy that it contains employment behavior that is more likely to be unrelated to the birth.

Table 2.5 presents estimated availability of paid leave, means of other job attributes, and socio-demographic characteristics of remaining 21 month jobs at various intervals. The changes in means over time suggest women are more likely to stay in jobs that offer paid leave or in which they are eligible for FMLA leave. However, they appear to be less likely to stay in part-time jobs.

Table 2.6 contains the results of Cox proportional hazard estimation for each type of quit (job change vs. labor force exit) reported as hazard ratios. The point estimates for paid leave are less than 1 and thus imply that women with paid sick leave or paid vacation leave are less likely to change jobs or leave the labor force than those without but neither reaches statistical significance. FMLA eligibility, however, reduces the risk of job changing by 37 percent. The risk of exiting the labor force does not appear to differ among women who are eligible and those who are ineligible for FMLA leave.

Having a part-time work schedule differentially predicts job changes and labor force exits. Women who work part-time have a 52 percent lower risk of changing jobs but a 28.7 percent higher risk of leaving the labor force. Among women in general, not

just pregnant women and new mothers, labor force attachment tends to be lower among part-time workers than among full-time workers (Blank 1989).

Interestingly, wages and income do not appear to have much impact on job changing or labor force exits. Point estimates for wages imply women are less likely to quit higher wage jobs for either reason. Point estimates for wages imply a 1% increase in wages is related to a 20 percent reduction in the risk of changing jobs and a 10 percent reduction in the risk of leaving the labor force but only the first estimate is statistically significant and only at the 10 percent level. However, women who work in salaried jobs have a 45 percent lower risk of leaving the labor force and that estimated effect is significant at the 5 percent level. Point estimates for household income are very close to 1, meaning there is no difference in job changing or labor force exit likelihoods by income after other factors are controlled for.

Table 2.7 presents the estimates of piece-wise proportional hazard estimation, which allows the estimated relationships between each type of quit and paid and unpaid leave and part-time work schedule to differ before and after the birth. Paid leave still does not appear to have any affect on quits either before or after the birth. However, the estimated effect of FMLA leave in Table 2.6 appears to be entirely primarily due to a reduction in job changing behavior prior to the birth. Prior to the birth, women who are eligible for FMLA have a 52 percent lower risk of changing jobs relative to those who are ineligible whereas after the birth the estimated difference is only 21 percent and is not statistically significant. Similarly, the risk of changing jobs among part-time workers is over 80 percent lower than among full-time workers before the birth but there is no significant difference in behavior after the birth. Interestingly, the entire positive

relationship between part-time work and labor force exits shown in Table 2.6 is due to labor force exits prior to the birth. After the birth, part-time workers are no more likely to exit the labor force than full-time workers. This finding is interesting because, as stated previously, part-time workers in general have lower labor force attachment than full-time workers. Blank (1989) finds, among all female workers, those initially working part-time were approximately twice as likely to be out of the labor force when observed again two years later. Thus, part-time may have no impact on labor force exits after the birth because there are benefits to working part-time at that point in the lifecycle that lead to a higher level of job continuity than is typical in that segment of the labor force.

Throughout the analysis I have assumed women change jobs around the time of a birth to achieve more flexibility. Thus far, findings suggest FMLA eligible women and those with part-time work schedules are less likely to change jobs prior to the birth. Table 2.7 further investigates the claim that women change jobs to obtain flexibility by comparing the availability of paid and unpaid leave, part-time work and other job attributes in old jobs and new jobs among all women who change jobs. Due to the short panel structure of the data and missing data for some of the covariates among new jobs, only 273 matched old and new job pairs could be identified.

Although having access to paid vacation or paid sick leave did not appear to influence job changes (or labor force exits) in the competing hazard analysis, women who changed jobs were more likely to obtain access to paid leave than to lose it. 19.19 percent of all job changers (or 37.14 percent of those who did not have it initially) gained paid vacation leave on the new job. Figures for sick leave also imply a higher likelihood of obtaining than losing sick leave but are not as pronounced as for vacation leave.

Although the hazard analysis suggested FMLA leave eligibility and part-time work schedule deterred job changes, the tabulations in Table 2.7 seem to indicate those who do change jobs are not seeking out FMLA covered employers or part-time work schedules. Only 10.26 percent of all job changers entered a part-time job whereas 16.48 percent left part-time jobs. Additionally, there is virtually no difference in the proportion of old and new jobs in which the employer is covered by FMLA. However, in the piece-wise proportional hazard estimation, it became clear that the relationships between FMLA eligibility, part-time work, and job changing was strongest prior to the birth. The figures in Table 2.7 include all job changes between 21 months prior and 18 months after the birth.

Although the sample sizes get quite small, when only old jobs changes that occurred prior to the birth are considered, 13.24 percent of job changer entered a part-time job and 14.71 percent left a part-time job. Considering that only 37 percent of all jobs held by women in the MEPS between 21 months prior to the birth and 18 months and only 33 percent of those that began prior to the birth were part-time jobs, the roughly equal transition rates in and out of part-time work among job changers are notable. Still, this evidence is based on only 68 matched old and new job pairs.

Similar findings hold for transitions in and out of jobs with FMLA covered employers. FMLA leave is likely to be most valuable at the time of the birth but eligibility requires one year of tenure. Thus if selection into jobs where the employer is covered by FMLA occurs it should occur between 20 and 12 months prior to the birth. Comparing job changes in that six month window to those that occur after it, only 24 percent of jobs that were left during the six month window (old jobs) were covered by

FMLA as compared to 48 percent after the window. Furthermore, 28 percent of new jobs that started during the six month window were covered by FMLA as compared to only 17 percent of those started after the window.

Discussion and Conclusion

Employment decisions associated with childbearing influence lifecycle earnings, may affect child development, and may contribute to the gender and family wage gaps. This paper analyzed the patterns in job changes and labor force exits among expecting and new mothers and assessed the possible effects of paid and unpaid leave and part-time work on these decisions. I contribute estimates of job continuity using a new and more recent nationally representative sample of births, and examine not only transitions from employment to non-employment but also job changes (job-to-job turnover).

When compared with previous estimates of job continuity, my estimates suggest women who gave birth in more recent years have been more likely to stay in their pre-birth jobs than those who had children in the 1970s and 1980s. Comparisons of the difference in the distribution of quits between job changes and labor force exits are more tenuous, because my definition of job changes differs from previous studies and construction of a more comparable measure was not feasible. However, taken at face value, the estimates imply fewer women change jobs around childbearing in 1996 to 2005 than in the 1970s and 1980s. Estimates for labor force exits, however, are very similar.

This paper also highlights the importance of sample design in the return to work literature, and studies of women's employment behavior around childbearing in general. The interval over which employment behavior is evaluated and the designation of the initial state from which employment transitions are measured vary greatly across studies.

My findings suggest there is relevant job changing behavior occurring as early as 21 months prior to the birth (1 year before the pregnancy). Studies that examine job continuity among jobs that exist closer to the birth or at the time of the birth miss these changes.

Furthermore, estimated relationships between job characteristics, and paid and unpaid leave availability in particular, differ before and after the birth. For example, early job changes are significantly less likely among FMLA eligible women when quits before and after birth are analyzed together. But when analyzed separately, the overall relationship is due to a large negative relationship between FMLA eligibility and job changing before the birth; there is no significant relationship after the birth. The same is true of part-time work.

Overall, I find no relationship between access to paid leave (either vacation or sick leave) and job changing or labor force exits. However, I do find women who change jobs are more likely to gain access to paid leave than lose it. Admittedly, they moved into higher wage jobs that were more likely to offer health insurance and retirement plans as well. In short, the possibility that women changed jobs for other reasons and happened to obtain paid leave cannot be ruled out.

Figures and Tables

Figure 2.1 Monthly Hazard Rates for Job Changes and Labor Force Exits for Jobs Held 1 Year Before Pregnancy (21 Months Before Birth)

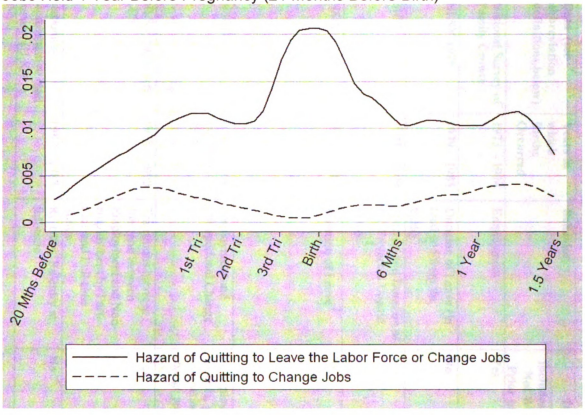


Table 2.1 Characteristics of Analysis Samples in a Selection of Previous Return to Work and Related Studies

Paper	Data (see abbreviation definitions below)	Years in which Births Occurred	Behavior	Definition of the Initial State		Start Time for Analysis of Behavior	End Time for Analysis of Behavior
				Includes Women Not Working Prior to Birth?	Rules for inclusion of initial job or employment spell		
Bumpass and Sweet 1980	National Survey of Family Growth	1973 – 1974	Employment	Yes	n/a	Before marriage (age 15)	2 years prior to last intended birth
Desai and Waite 1991	NLSY 1979	1979 – 1985	Duration of Leave (in total and from the birth)[2]	No	Last job observed before the birth.	1 year before	2 years after
Han and Waldfogel (2003)	SIPP	1991 – 1999	Instance and Duration of Job Protected Unpaid Leave[1]	No	Job held 3 months before birth and maintained through 3 months after.	3 months before birth.	3 months after birth.
Joesch 1997	NSFG	1980 – 1988	Duration of Leave[2]	No	At conception (and must have worked in the job at pregnancy for at least 6 months)	9 months before birth.	First observed re-entry but observations are censored between 6 months and 8 years after birth.
Joshi and Hinde 1993	NSHD	1946 – 1961 and 1961 – 1978	Employment and Occupational Change	In employment analysis, yes. In occupational change analysis, no.	Last job during pregnancy for occupational analysis only.	Birth	16 years after birth.
Klerman and Leibowitz (1999)	NLSY 1979, June CPS	1978 – 1990	Transitions between Jobs and between Employment and Non-employment by Part-time and Full-time Status	Yes	n/a	12 months before birth.	18 months after birth.
McRae 1993	Nationally representative mail survey. (U.K.)	1987 – 1988	Re-entry, Re-entry at full-time	No	Last job held during pregnancy	Birth	29 week after birth.

Table 2.1 Characteristics of Analysis Samples in a Selection of Previous Return to Work and Related Studies (Continued)

Shapiro and Mott 1979	NLSY 1968	1968 – 1973	Labor Force Participation	Yes	n/a	13 months before birth.	12 months after birth.
Waldfogel et al. (1999)	NLSY 1979, NCDS, PSC	1992 – 1995 (U.S.) 1993 – 1995 (U.K.) 1992 (Japan)	Return to Same Job	No	Last job prior to birth.	Birth	12 months after birth for U.S. and U.K. 24 months after birth for Japan.
Wenk and Garrett 1992	NLSY 1979	1979 – 1986	Any employment interruption and final employment status.	No	Conception	9 months before birth.	1 year after birth.

CPS: Current Population Survey

NCCS: National Child Care Survey

NCDS: National Child Development Study (U.K.)

NLSY: National Longitudinal Survey of Youth – year as indicated

NSFG: National Survey of Family Growth

NSHD: National Survey of Health and Development (U.K.)

PSC: Panel Survey on Consumers (Japan)

SIPP: Survey of Income and Program Participation

[1] Most data sets do not allow the researcher to differentiate between women who are employed and on maternity leave from those who are employed and at work. Therefore leave is generally defined as an unpaid absence from work or period of non-employment. See Klerman and Leibowitz (1994) for a detailed discussion of the difference between work and employment status following childbirth.

Table 2.2 Comparison to Previous Estimates of Job and Employment Continuity

	Previous Studies[1]			My Estimates (MEPS Births 1996 – 2005)		
	Same Job	Different Job	Out of the Labor Force	Same Job	Changed Jobs[2]	Left Labor Force[2]
12 Months Before to 18 Months After (Jobs held 12 months before)	45.8%	21.5%	32.8%	54.9%	12.8%	32.3%
Birth to 12 Months After (Job Held at Birth)	69%		31%	78.2%	6.6%	15.2%
21 Months Before to 18 Months After (Jobs held 21 months before)	n/a			57.4%	13.6%	29.0%

[1] 12 Months before to 18 months after estimates are calculated from estimates published in Table 1 of Klerman and Leibowitz (1999) covering births from 1978 to 1990. Birth to 12 months after estimates are based on Desai and Waite (1991) covering births from 1979 to 1985.

[2] Women were coded as changing jobs only if they indicated they had quit to change jobs and as leaving the labor force only if they indicated they voluntarily left their job (see Appendix A2 for detailed description of data). Klerman and Leibowitz characterize job changing as having a different job at 18 months after the birth than at 12 months after the birth. Both Klerman and Leibowith (1999) and Desai and Waite (1991) measure labor force absences as being out of the labor force at the end of the period of observation. My definitions include women who ever left their initial job for a new job or who quit their job to leave the labor force (not including paid and unpaid absences from work in a continuing employment relationship) regardless of their status at the end of the observation period. More comparable measures were not feasible given the short panel structure of the data.

Table 2.3 Potential Omission and Misclassification at Different Intervals for 21 Month Jobs

	21 to 18 Months	12 to 18 Months	Birth to 18 Months
Distribution among Total 21 Month Jobs			
Stayed	57.4%	57.4%	57.4%
Changed Jobs	13.6%	9.0%	6.5%
Left Labor Force	29.0%	27.7%	10.2%
Previous Job Changes	n/a	4.6%	7.1%
Previous Labor Force Exits	n/a	1.3%	18.8%
Total Jobs	1,922	1,922	1,922
Distribution among Remaining Jobs 21 Month Jobs at Each Interval			
Stayed	57.4%	61.0%	77.5%
Changed Jobs	13.6%	9.6%	8.8%
Left the Labor Force	29.0%	29.4%	13.8%
Remaining Jobs	1,922	1,809	1,424
Distribution among All Jobs that Exist at the Start of the Interval			
Stayed	57.4%	54.9%	71.8%
Changed Jobs	13.6%	12.8%	9.4%
Left Labor Force	29.0%	32.3%	18.9%
Total Jobs[1]	1,922	2,283	2,308

Notes: The estimates in the top and bottom panels are derived from the actual data (with sample weights applied). The middle panel of estimates is calculated from the top panel for illustrative purposes. However, estimates in the actual data approximate these figures out to the third decimal place.

[1] Changes in the total number of jobs are due in part to the overlapping panel structure of the data. They do no reflect actual changes in the number of jobs held at each point among a constant number of individuals.

Table 2.4 Descriptive Statistics by Interval for Jobs 21 Months Before (Standard Errors in Parentheses)

	All 21 Month Jobs	Remaining at Birth	Remaining at 18 Months After
Paid Sick Leave	0.62 (0.02)	0.70 (0.01)	0.73 (0.01)
Paid Vacation	0.74 (0.02)	0.81 (0.01)	0.80 (0.01)
FMLA Eligible	0.37 (0.01)	0.43 (0.01)	0.44 (0.01)
Part Time	0.26 (0.01)	0.23 (0.01)	0.21 (0.01)
Wage	$13.34 (0.26)	$14.69 (0.25)	$15.59 (0.25)
Salaried	0.31 (0.01)	0.36 (0.01)	0.40 (0.01)
Retirement Plan	0.51 (0.02)	0.60 (0.01)	0.61 (0.01)
Union Member	0.12 (0.01)	0.14 (0.01)	0.14 (0.01)
Offered Health Ins.	0.81 (0.01)	0.83 (0.01)	0.83 (0.01)
Private Employer	0.84 (0.01)	0.81 (0.01)	0.79 (0.01)
Federal Government	0.02 (0.00)	0.03 (0.00)	0.03 (0.00)
State Government	0.07 (0.01)	0.08 (0.01)	0.09 (0.01)
Local Government	0.08 (0.01)	0.08 (0.01)	0.09 (0.01)
Management	0.12 (0.01)	0.13 (0.01)	0.13 (0.01)
Professional	0.24 (0.01)	0.27 (0.01)	0.30 (0.01)
Service	0.17 (0.01)	0.13 (0.01)	0.13 (0.01)
Sales	0.10 (0.01)	0.10 (0.01)	0.09 (0.01)
Clerical	0.19 (0.01)	0.19 (0.01)	0.21 (0.01)
Production	0.07 (0.01)	0.08 (0.01)	0.08 (0.01)
Other Occupation	0.12 (0.01)	0.11 (0.01)	0.06 (0.01)
Total Income	$63,627.38 (1,405.26)	$66,985.15 (1,197.26)	$69,945.20 (1,132.85)
MSA	0.84 (0.01)	0.82 (0.01)	0.82 (0.01)
Age	30.24 (0.19)	31.17 (0.16)	31.59 (0.14)
White	0.78 (0.01)	0.78 (0.01)	0.78 (0.01)
Black	0.16 (0.01)	0.16 (0.01)	0.15 (0.01)

Table 2.4 Descriptive Statistics by Interval for Jobs 21 Months Before (Continued)

Other Race	0.05 (0.01)	0.06 (0.01)	0.07 (0.01)
Hispanic	0.24 (0.01)	0.20 (0.01)	0.21 (0.01)
Married	0.75 (0.01)	0.79 (0.01)	0.80 (0.01)
Less than High School	0.12 (0.01)	0.09 (0.01)	0.09 (0.01)
GED	0.04 (0.01)	0.04 (0.01)	0.04 (0.00)
High School	0.45 (0.02)	0.44 (0.02)	0.43 (0.01)
Bachelors	0.21 (0.01)	0.24 (0.01)	0.25 (0.01)
Graduate Degree	0.09 (0.01)	0.10 (0.01)	0.11 (0.01)
Other Degree	0.09 (0.01)	0.10 (0.01)	0.09 (0.01)
Grandmother in House	0.08 (0.01)	0.05 (0.01)	0.06 (0.01)
Non English Speaking Household	0.18 (0.01)	0.18 (0.01)	0.20 (0.01)
Number of Children	1.48 (0.04)	1.56 (0.04)	1.60 (0.03)
Number of Kids < 6yrs	0.91 (0.03)	1.02 (0.03)	1.05 (0.02)
Tenure in Years	4.02 (0.09)	4.42 (0.10)	4.69 (0.10)
Observations	1,922	1,600	1,527

Notes: Figures are estimated population parameters and standard errors are reported in parentheses.

Table 2.5 Results 21 Month Jobs at 21 Months before to 18 Months After

	Changed Jobs	Left Labor Force
Paid Sick Leave	0.763 (0.208)	0.921 (0.144)
Paid Vacation	0.743 (0.191)	0.888 (0.131)
FMLA Eligible	0.631** (0.141)	0.867 (0.120)
Part Time	0.478* (0.119)	1.287+ (0.184)
ln(Wage)	0.800+ (0.107)	0.917 (0.090)
Salaried	0.592 (0.215)	0.550* (0.126)
Tenure in Years	0.925+ (0.037)	0.951* (0.018)
Retirement Plan	0.895 (0.217)	0.863 (0.123)
Union Member	0.793 (0.326)	0.955 (0.191)
Offered Health Ins.	0.908 (0.207)	0.856 (0.112)
Federal Government	0.643 (0.472)	0.554 (0.255)
State Government	0.637 (0.290)	1.081 (0.245)
Local Government	0.734 (0.355)	0.988 (0.242)
Management	0.860 (0.322)	0.630+ (0.176)
Professional	0.618 (0.227)	0.628** (0.139)
Sales	1.317 (0.401)	0.913 (0.199)
Clerical	0.744 (0.236)	0.751 (0.148)
Production	1.042 (0.420)	0.938 (0.232)
Other Occupation	1.176 (0.382)	2.811* (0.466)
Full Income (10 Thousands)	1.056 (0.064)	0.956+ (0.022)
Full Income^2 (10 Thousands)	0.997 (0.002)	1.001 (0.000)
MSA	1.466 (0.353)	1.380** (0.212)
Age	0.921* (0.021)	1.011 (0.012)
Black	0.811 (0.212)	0.834 (0.146)
Other Race	0.916 (0.346)	0.766 (0.200)
Hispanic	0.503** (0.144)	1.364** (0.196)

Table 2.5 Results 20 Month Jobs at 20 Months before to 18 Months After (Continued)

Married	0.786 (0.184)	1.209 (0.186)
Less than High School	0.768 (0.240)	0.930 (0.161)
GED	1.416 (0.513)	0.845 (0.232)
Bachelors	1.507 (0.495)	0.973 (0.180)
Graduate Degree	4.145* (1.919)	1.108 (0.318)
Other Degree	1.481 (0.533)	1.118 (0.231)
Grandmother in House	0.664 (0.220)	0.743 (0.156)
Non English Speaking Household	0.724 (0.209)	0.625* (0.102)
Number of Children	1.088 (0.125)	1.034 (0.070)
Number of Kids < 6yrs	0.832 (0.136)	0.953 (0.091)
Observations	1922	1922

Notes: Figures in table are hazard ratios.

Table 2.6 Changes in Estimated Relationships Before and After Birth (Jobs Held 21 Months Before)

	Changed Jobs	Left Labor Force
Before Birth (BB)	0.643	0.042*
	(0.589)	(0.019)
After Birth (AB)	0.246+	0.011*
	(0.205)	(0.006)
Paid Sick Leave BB	0.905	0.732
	(0.400)	(0.174)
Paid Sick Leave AB	0.740	0.985
	(0.258)	(0.208)
Paid Vacation BB	0.615	0.947
	(0.249)	(0.201)
Paid Vacation AB	0.829	1.041
	(0.280)	(0.227)
FMLA BB	0.481+	0.702
	(0.184)	(0.156)
FMLA AB	0.791	0.903
	(0.225)	(0.163)
Part-Time BB	0.176*	1.472+
	(0.072)	(0.302)
Part-Time AB	0.851	1.041
	(0.264)	(0.207)
ln(wage) BB	0.821	0.912
	(0.171)	(0.103)
ln(wage) AB	0.752+	0.944
	(0.123)	(0.147)
Salaried BB	0.367+	0.567+
	(0.202)	(0.165)
Salaried AB	0.707	0.655
	(0.300)	(0.186)
Tenure BB	0.717*	0.970
	(0.078)	(0.029)
Tenure AB	0.981	0.949**
	(0.042)	(0.023)
Retirement Plan BB	0.480+	0.680+
	(0.209)	(0.157)
Retirement Plan AB	1.151	1.030
	(0.345)	(0.192)
Union Member BB	1.023	0.926
	(0.854)	(0.321)
Union Member AB	0.693	0.984
	(0.330)	(0.243)
Offer Health Insurance BB	1.173	0.648**
	(0.475)	(0.118)
Offer Health Insurance AB	0.704	1.021
	(0.198)	(0.195)
Federal Govt BB	0.619	0.922
	(0.662)	(0.668)
Federal Govt AB	0.462	0.344+
	(0.477)	(0.204)
State Govt BB	0.000	1.175
	(0.001)	(0.415)

Table 2.6 Changes in Estimated Relationships Before and After Birth (Jobs Held 21 Months Before) (Continued)

State Govt AB	1.082 (0.516)	1.031 (0.310)
Local Govt BB	1.165 (1.025)	1.961+ (0.731)
Local Govt AB	0.755 (0.444)	0.742 (0.247)
Management BB	0.525 (0.358)	0.889 (0.306)
Management AB	0.988 (0.456)	0.373** (0.174)
Professional BB	0.803 (0.428)	0.705 (0.215)
Professional AB	0.449+ (0.215)	0.638 (0.210)
Sales BB	1.553 (0.713)	1.046 (0.282)
Sales AB	1.236 (0.511)	0.708 (0.268)
Clerical BB	0.836 (0.406)	0.772 (0.202)
Clerical AB	0.705 (0.294)	0.774 (0.237)
Production BB	1.189	0.923
	(0.795)	(0.327)
Production AB	0.979	0.964
	(0.493)	(0.341)
Other Occupation BB	1.511	1.010
	(0.706)	(0.261)
Other Occupation AB	0.967	5.761*
	(0.434)	(1.437)
Observations	2,758 obs. for 1,922 individuals	2,758 obs. for 1,922 individuals

Notes: Figures in table are estimated hazard rations. Estimates also control for the full set of demographic and other control variables as in Table 2.5.

Table 2.7 Characteristics of New and Old Jobs Among Job Changers

	Means Old Jobs	Means New Jobs	% Gained	% Lost	% of Without Gained	% of All Had Lost
Sick Pay	0.39 (0.49)	0.46 (0.50)	17.71%	9.59%	28.74%	25.00%
Paid Vacation	0.49 (0.50)	0.57 (0.50)	19.19%	10.33%	37.14%	21.37%
FMLA Covered Employer[1]	0.46 (0.50)	0.47 (0.50)	17.34%	15.73%	31.39%	35.14%
Part Time	0.30 (0.46)	0.24 (0.43)	10.26%	16.48%	14.74%	54.22%
Wage	$9.10 (5.16)	$10.48 (7.32)	64.58%	24.72%	n/a	
Salaried	0.12 (0.33)	0.15 (0.36)	6.96%	3.30%	7.88%	28.13%
Retirement Plan	0.21 (0.41)	0.30 (0.46)	18.08%	8.86%	23.00%	41.38%
In Union	0.05 (0.21)	0.06 (0.24)	4.40%	2.93%	4.60%	66.67%
Offered Insurance	0.76 (0.43)	0.80 (0.40)	15.75%	13.55%	70.49%	17.45%
Federal Government	0.01 (0.09)	0.01 (0.12)	1.10%	0.37%	1.11%	50.00%
State Government	0.02 (0.13)	0.01 (0.09)	0.37%	1.10%	0.37%	75.00%
Local Government	0.04 (0.21)	0.06 (0.23)	3.30%	2.20%	3.45%	50.00%
Management	0.07 (0.25)	0.07 (0.23)	2.93%	2.56%	3.14%	38.89%
Professional	0.12 (0.33)	0.14 (0.34)	4.40%	2.93%	5.00%	24.24%
Service	0.26 (0.44)	0.25 (0.44)	10.99%	11.36%	14.78%	44.29%
Sales	0.21 (0.40)	0.16 (0.36)	10.99%	8.68%	55.56%	11.36%
Clerical	0.16 (0.36)	0.20 (0.40)	6.67%	13.42%	45.24%	5.49%
Production	0.10 (0.29)	0.11 (0.32)	5.49%	4.76%	6.15%	44.83%
Other Occupation	0.09 (0.29)	0.07 (0.26)	0.73%	3.30%	0.81%	33.33%
Observations	273	273	273	273	273	273

Notes: Standard deviations are reported in parentheses. Data include all quits that ended in job changes among jobs held at any point within 21 months before the birth and 1.5 years following the birth and could be matched with the subsequent job.

[1] Measured as any employer with more than 50 employees

Chapter 3

Making Time for Well-Baby Care: The Effect of Maternal Employment and Paid and Unpaid Leaves

Introduction

The American Academy of Pediatrics recommends children receive preventive care visits or "well-baby visits" at regular intervals throughout the first twenty-four months of life. Well-baby visits are intended to create and maintain a health history and deliver anticipatory guidance for parents. They also provide an opportunity for health screenings and vaccinations and include developmental and physical assessments.

Anticipatory guidance, health screening and vaccinations can play key roles in reducing infant mortality. The mortality rate between birth and age 1 year is nearly 23 times higher than the rate for 1 to 4 year olds and only 25 percent lower than that of 55 to 64 year olds (Hoyert et al. 2005). Although the risk of death is highest at the time of birth and during the first few hours and days of life, 10 percent of all infant deaths in 2003 (or 34 percent of those which occurred after the perinatal period and were not associated with congenital abnormalities) were due to Sudden Infant Death Syndrome (SIDS), accidents or unintentional injury (Hoyert et al. 2003). Prevention through anticipatory guidance of SIDs, accidents and injuries is a goal of well-baby care. Since proper sleep position guidance was first publicized in 1992, the percentage of infants placed on their backs to sleep increased from 13 percent to 72.8 percent and the rate of Sudden Infant Death Syndrome (SIDS) fell by over 50 percent (National Institute of Child Health and Human Development 2008). Although parents could have received sleep position guidance from a variety of sources, well-baby care is specifically aimed at delivering this sort of information.

Early diagnosis of existing conditions can improve prognosis. From birth to ages 3 to 5 years, visual acuity develops from below 20/200 to near 20/20, however, early

conditions such as strabismus (commonly known as "lazy eye") can preclude development of visual acuity (Daw 1998). The critical treatment period for strabismus and other sources of limited visual acuity (amblyomia) is thought to be between birth and age 2 years (Daw 1998). Children who receive early screening (before age 3) and treatment for amblyomia have better long run visual acuity than children who are screened and diagnosed at age 3 (Williams et al. 2002). Similarly infants, who are found to have congenital hearing loss in early infant hearing screening, have a higher likelihood of developing speech (Kaye 2006). Screenings can occur in other medical settings but well-baby care visits are designed to include them.

8.9 percent of 2003 deaths which occurred after the perinatal period and were not associated with congenital abnormalities were the result of infectious diseases and endocrine, nutritional or metabolic diseases (Hoyert et al. 2003). Vaccines are available for many infectious diseases and for some endocrine, nutritional and metabolic diseases, treatment can be as simple as administering vitamin supplements and maintaining routine follow-up care (Kaye 2006). The schedule of well-baby care visits includes screenings for many of these conditions. For those that cannot be detected in medical tests, routine physical examinations and developmental assessment included in all well-baby visits may lead to earlier diagnosis.

Preventive care is recommended to continue throughout childhood, adolescence and on into adulthood. However 11 of the 31 visits recommended between birth and age twenty-one are to occur before age two. Given the higher mortality risk and the concentration of health screenings and vaccinations during those early years, the marginal benefit of preventative care is arguably highest for well-baby visits. Despite the

importance of these visits, most studies have found babies receive significantly less than the recommended amount of care (Ronsaville and Hakim 2000; Byrd et al.1999; Maisels and Kring 1997). Yet others find compliance rates are quite high (around 80 percent) (Selden 2006).

This paper attempts to reconcile differences in previous estimates of compliance and examine the relationship between maternal employment, availability of employer provided leaves and part-time work schedule, and receipt of well-baby care. As with any form of healthcare, cost and access are important determinants of demand. Yet, federal and state policies have made well-baby care virtually free for all publicly insured infants. Furthermore, cost sharing under private insurance is also very low. If compliance rates are indeed quite low despite the low cost of care then other factors, such as time constraints, may be especially important.

One-third of mothers return to work during the first three months of their baby's life (Klerman and Leibowitz 1990, 1994, 1999; Smith and Bachu 1999). For these mothers, well baby care must either be scheduled around work hours, or time off work must be obtained. Therefore, paid and unpaid leave and part-time work may help to enable employed mothers to take their babies to the doctor.

Background and Previous Studies

Currently, the American Academy of Pediatrics recommends a total of ten well-baby visits before a child's second birthday. These include a newborn evaluation, which generally occurs in the hospital following delivery, and a visit three to five days after birth to evaluate breast feeding behavior and to check for jaundice (Recommendations for Preventive Pediatric Health Care 2008). Subsequent visits are timed to deliver on-time

vaccination, administer health screenings and deliver age appropriate anticipatory guidance to parents

Previous studies examine compliance with AAP guidelines but produce seemingly contradictory estimates. The discrepancies are likely due to the measure of compliance used, differences in the sample population, or both. For example, Ronsaville and Hakim (2000) find 58 percent of white, 35 percent of black and 37 percent of Hispanic six month olds in the National Maternal and Infant Health Survey (NMIHS) are "fully compliant" with recommendations. However, they count any doctor visit where an immunization occurred as a well baby visit. They also code children who receive at least three of the four visits recommended in the first six months as fully compliant. Using the Medical Expenditure Panel Survey (MEPS), Seldon (2006) defines well-baby visits to include general check-ups and immunizations or shots and measures compliance as the percentage of age-specific recommended visits received. He concludes 83.2 percent of infants are in compliance with care recommendations. Maisels and Kring (1997) use a sample of 20 private pediatricians' offices and examine compliance with the 2 to 4 day follow-up visit recommended for infants who are discharged from the hospital less than 48 hours after birth. They find only 38 percent of early discharge infants received a follow-up visit within four days. Bryd et al. (1999) measure the percent of recommended care intervals in which at least one visit occurred. Recommended care intervals are defined as the range of ages during which a specific visit should occur. For example, the 2 month visit should occur in the interval between ages 2 and 3 months, inclusive. They find privately only 49 percent of privately insured and 36 percent of publicly insured infants received well-baby care in all recommended care intervals.

The Maisels and Kring (1997) and Byrd et al. (1999) compliance measures are affected by the timing of visits. Arguably the simplest measures would count the number of visits a child received. However, timing of visits is important for (at least) three reasons. First, by definition, anticipatory guidance must anticipate the need for information. Second, as discussed previously, on-time screening for health conditions can significantly improve prognosis among the diagnosed. Third, on-time immunizations minimize the risk of viral infection.

The childhood immunization schedule corresponds to the levels of maternal antibodies present in the infant's body. At birth, maternal antibodies not only protect a newborn from disease, but also prevent successful vaccination. These antibodies decline over the first few months of life and thus the risk of infection increases until endogenous antibodies reach a preventive threshold. Ideally, vaccination should occur as soon as the maternal antibodies decline enough to permit successful vaccination. The immunization schedule targets that window of time. Although subsequent doses of any given vaccine are identical to previous doses (there is no additive effect), multiple doses increase the likelihood of successful immunization. Late follow-up doses may lead to longer periods of susceptibility to infection if early doses do not successfully establish immunity.

Studies that have used a strict definition of well-baby care and excluded other types of doctor visits (e.g. Byrd et al 1999) may underestimate the among of care received if infants are receiving some well-baby care during other doctor visits. For example, a baby could obtain missed vaccinations during treatment for an ear infection. Similarly, his mother could receive the anticipatory guidance that she would have received in a well-baby visit. If parents often substitute incidental sick visits for regular

well-baby care, measures that exclude sick visits will underestimate the true amount of care received.

Few previous studies attempt to determine why well-baby care is under-utilized. Of those, only Vistnes and Hamilton (1995) specify the demand for medical care as a function of prices and income. They find the number of visits a baby receives is decreasing in hours worked per week and weeks worked per year and mothers with sick leave to visit the doctor are no more likely to take their children to well-baby visits. Estimated coefficients on out of pocket cost and time cost are negative but only weakly significant and imply small own and cross price effects.

Berger et al. (2005) estimate the relationships between mothers' early return to work (within the first twelve weeks), initiation of well-baby care, and number of visits over the first year, along with other infant health investments and outcome measures. Their OLS results indicate infants whose mothers return to work early are 2.4 percentage points less likely to receive any well-baby care in the first year of life. Intensive margin results are weakly significant but imply infants whose mothers return to work within the first twelve weeks receive 0.20 fewer visits. Propensity score estimates are very similar to OLS results. However, they do not include any measure of out of pocket cost of care in their model. Also, although, Berger et al. (2005) find negative relationships between leave duration and well-baby care use, they estimate the relationship between leave behavior and receipt of care. They do not examine the relationship between leave availability and receipt of care and thus their estimates likely overstate the relationship between leave and well-baby care use.

Other studies have found non-black, non-poor and privately insured infants, infants with more educated parents (Yu et al. 2002; Mustin et al. 1994), infants from families with fewer children, infants from households without transportation problems (Moore and Hepworth 1994), infants who receive home health visits (Braveman et al. 1996), and infants whose parents were sent visit reminders (Campbell et al. 1994) received more care than other similar infants. Furthermore, McInerny et al. (2005) find state level insurance reimbursement rates are significantly and positively related to compliance with well-baby care recommendations. Kost et al. (1998) and Marsiglio and Mott 1988 find no relationship between pregnancy "wantedness" and receipt of well baby care. Kviz et al. (1985) find no relationship between well-baby care receipt and mother's health beliefs, defined as beliefs regarding susceptibility to illness, severity of risks, benefits of care, and efficacy of care. Again, either price, income or both are missing from the regressors in these studies.

In a related study, Colle and Grossman (1978) estimate a demand function for pediatric care, including whether or not a child received any well-child visits, among children ages 1 through 5. They exclude infants from their analysis because they argue the benefits of care in infancy likely differ greatly from the benefits of care among older children and thus the determinants of compliance also may differ by age. They base their analytical framework on a production function for child health where well-child care is one of many inputs. From the production function they obtain a derived demand function for well-child care that becomes their empirical model.

Colle and Grossman find income increases the likelihood of receiving a preventive care visit, but the effect is smaller at higher income levels. This finding is not

surprising because the out of pocket cost of visits for most insured children is quite low. Price effects are not separately estimated for preventive care visits, but they do find an own price elasticity of -0.106 for total number of office based visits received. Additionally, Medicaid recipients receive fewer visits but they find a positive relationship between welfare receipt and receipt of preventive care. Time costs reduce the likelihood of receiving preventive care and the estimated effect is largest for infants whose mothers work. The potential endogeneity of maternal employment is not addressed.

In total, most existing studies estimate compliance rates or describe the characteristics of infants who are likely to receive care. Of those that estimate demand functions for well-baby care or related preventive care, both find evidence of competition between maternal employment and receipt of care (Colle and Grossman 1978; Berger et al. 2005). Yet, Colle and Grossman consider preventive care visits among older children only and their data is from 1971. Berger (2005) use data from the NLSY 1979 covering all births between 1988 and 1996 to women in the NLSY cohort who were ages 23 through 39 at that time. Since they focus on the relationship between receipt of care and mother's return to work, they restrict their analysis to women who were employed three months prior to the birth.

I contribute nationally representative estimates of well-baby care compliance using a sample of babies born between 1994 and 2005. Furthermore, I estimate relationships between availability of paid and unpaid leave and work schedules among employed women and relationships between insurance coverage, price of care and estimated time costs for all women (employed and non-employed).

Conceptual Framework

Following Colle and Grossman (1978) I assume household utility is a function of the baby's health **B**, mother's and father's leisure l_m and l_f, and consumption of all other goods X.

$$\psi = \psi(\mathbf{B}, L, X) \tag{1}$$

Further, baby's health is produced using well-baby visits V and full-income less expenditure on well-baby care M^- and is affected by an exogenously determined individual specific health endowment b_i.

$$\mathbf{B} = \gamma(V, M^-, b_i) \tag{2}$$

Derived utility can then be written as a function of well-baby visits, leisure, other consumption and infant health endowment:

$$U = U(V, L, X, b_i)$$

The household chooses the number of well baby visits, amount of leisure and consumption of other goods to maximize utility subject to the following budget and time constraints and corner restrictions:

$$P'X + W^{*\prime}L + W^{*\prime}V - W^{*\prime}S + p_v V = W^{*}T + Y = M \tag{3}$$

$$T = V + L + H - S \tag{4}$$

$$\begin{array}{ll} V \geq 0 & L \geq 0 \\ H \geq 0 & S \geq 0 \end{array} \tag{5}$$

P is a vector of prices corresponding to the consumption goods vector X, W^* is the vector of maternal and paternal shadow prices of time, which for employed parents should be equal to their wage, S is hours of paid time off available to each parent, Y is non-labor income, M is full income, T is the total time allocated to all activities and H is hours spent in market work.

To simplify the optimization problem and subsequent analysis I assume the mother is solely responsible for taking the baby to the doctor and father's employment and income are exogenous. Mothers accompany children under age 16 to 91 percent of doctor visits (Vistnes and Hamilton 1995). Since this proportion is likely to be even higher for well-baby visits, this assumption is likely to be reasonably accurate. Even in the case of a stay-at-home dad, the mother will likely need to be present for well-baby care because evaluations of breast feeding and mother-infant interaction are key objectives of care. With this simplification the optimization problem can be written as follows:

$$\max_{v,l,X} U(v,l,X,b_i) \qquad s.t.\ P_x X + w^*(l+v-s) + P_v v = M$$
$$T = v + l + h - s \tag{6}$$
$$v \geq 0; l \geq 0; h \geq 0; s \geq 0$$

v is now the total number of visits received and w^*, l, and s are now mother's shadow price of time, her time spent in leisure and the days of paid leave she has available.

Optimization yields the following conditions:

$$\frac{\partial V}{\partial P_v} < 0$$
$$\frac{\partial V}{\partial s} > 0 \qquad \frac{\partial V}{\partial M} > 0 \tag{7}$$

That is, the demand for visits should be decreasing in own price, increasing in paid time off and increasing in full income. For working women, w^* must equal the wage in equilibrium (assuming no hours constraints or fixed costs of work) and thus the effect of w^* on the demand for visits will depend on the size of income and substitution effects and the relative marginal values of time spent in leisure and well-baby care. Since the

out-of-pocket cost of well-baby care is $0 for the majority of privately and publicly insured infants, the sign of the cross wage elasticity for working women is likely to be negative (Acton 1973). For non-working women, w^* is the value of time spent in leisure, which must equal the reservation wage (Coffey 1983). Since there is no income effect for non-working women, the relationship between w^* and V will again depend on whether or not well-baby visits and leisure are complements or substitutes.

Empirical Strategy

Based on the foregoing conceptual framework, the baseline empirical specification of the demand function is as follows:

$$V_{ij} = \beta_0 + \beta_1 pv_{ij} + \beta_2 w^* + \beta_3 M_{ij} + Ed_{ij}\Delta_1 + Kids_{ij}\Delta_2 + Z_{ij}\Delta_3 + \varepsilon_{ij} \qquad (8)$$

The dependent variable V_{ij} is equal to 1 if infant i received at least one well-baby visit during the jth care interval. pv_{ij} is the out of pocket cost , M_{ij} is the household's full income, Ed is a vector of maternal education measures, $Kids_{ij}$ are variables summarizing the number and age of children and Z_{ij} is a vector of access to care, quality of care, subjective and objective infant health endowment variables, and maternal and infant demographic variables. w^* is the shadow price of time and is equal to the wage for workers and the reservation wage for non-workers, which is unobserved. In practice, most authors either omit any measure of the value of time all together or use predicted wage offers in lieu of w^* for individuals who are not working. I discuss the interpretation of parameters under each strategy below.

When any direct measure of the shadow price of time is omitted from the model, maternal education and number of children are often regarded as proxies, however, their predicted effects are ambiguous. Wage offers should be increasing in education and the

opportunity cost of time must be higher than the wage for women who are not working. Thus education should be positively correlated with the shadow price of time and negatively related to the receipt of well-baby care. Yet, more educated mothers may also be more productive producers of infant health. Infants with more educated mothers may receive a higher marginal benefit from well-baby care (productive efficiency) because their mothers understand recommendations and communicate more effectively with healthcare providers. Or more educated mothers may select a better mix of health inputs including well-baby care (allocative efficiency) (Grossman 2003). If either the productive or allocative efficiency hypotheses are correct then the overall relationship between education and well-baby care could be positive.

Studies that use predicted wage as the value of time for non-workers implicitly assume there are no inherent differences between workers and non-workers and their wages are drawn from the same distribution as working women (Gronau 1973). Furthermore, by definition, the predicted wage must be lower than the reservation wage. The assumption of similarities between workers and non-workers is required even if reservation wages are derived from estimates of female labor supply (e.g. Gronau 1973). To address this problem, Coffey (1983) uses a survey that directly solicits estimates of the reservation wage among respondents who are not currently working. She finds estimates of time-price elasticities for female health care based on the direct survey measure of reservation wages and on selection corrected predicted wages (Heckman full information maximum likelihood FIML) are identical (Coffey 1983; 1980). Since there is no direct measure of reservation wages equivalent to Coffey's measure available in the data, I test the sensitivity of my results to various time price measures including past

observed wages, predicted wages and selection corrected predicted wages. My preferred measure uses a combination of past observed wages and predicted wages.

In addition to missing shadow price of time, out of pocket cost data is missing for visits that do not occur. For infants who receive at least one well-baby visit, I use the average out of pocket cost of previous visits in place of missing price data. For infants who do not receive any well-baby visits I predict out of pocket cost using the following equation:

$$P_v = \delta_0 + \delta_1 Age + I_{ij}\Delta_1 + H_{ij}\Delta_2 + R_{ij}\Delta_3 + e \tag{10}$$

Since the distribution of out of pocket costs is highly skewed to the right, and over 50 percent of visits have an out pocket cost of $0, I exclude observations with out of pocket costs in the top 1 percent of the distribution when predicting missing price data. Also, from 1997 forward I replace missing price data for Medicaid recipients with $0 because cost sharing was eliminated under Medicaid/SCHIP in 1996.

To assess the relationship between maternal employment, paid leave and well-baby visits I modify Equation 8 as follows and use all observations for working and non-working women in the estimation:

$$\begin{aligned} V_{ij} = {} & \rho_0 + \rho_1 pv_{ij} + \rho_2 \tilde{w}_{ij} + \rho_3 \tilde{w}_{ij} * E_{ij} + \rho_4 E_{ij} + \rho_5 M_{ij} + Ed_i \mathrm{P}_1 + Kids_{ij} \mathrm{P}_2 \\ & + PL_{ij} \mathrm{P}_3 + J_{ij}\, \mathrm{P}_4 + Z_{ij} \mathrm{P}_5 + u \end{aligned} \tag{11}$$

E_{ij} is equal to 1 for employed mothers and $\tilde{w}_{ij}$ is equal to the observed wage for employed mothers and the estimated shadow price of time for non-working mothers. PL_{ij} is a vector of paid leave policies available to the mother. This specification allows for comparisons among infants with non-employed mothers, employed mothers without paid leave, and employed mothers with paid leave.

The decision to work is likely to be endogenous. To address this issue, I restrict the sample to married women only and use father's current wage, whether he is salaried or hourly, and his hours of work (entered linearly and as a quadratic) as instruments for mother's employment status. If mothers are exclusively responsible for taking their babies to well-baby visits then, after income is controlled for, father's wages should not have an effect on the demand for visits except through income. Admittedly, the validity of this exclusion restriction rests entirely on the assumption that mothers are solely responsible for taking the baby to the doctor. No more appealing identification strategy exists in the previous literature although Berger et al. (2005) find OLS estimates of the relationship between mother's return to work are generally consistent with estimates derived through propensity score matching.

To examine the effects of paid leave and other job characteristics among infants with employed mothers I estimate the following equation only for recommended care intervals when the mother is employed.

$$V_{ij} = b_0 + b_1 pv_{ij} + b_2 w_{ij} + b_3 M_{ij} + Ed_{ij} B_1 + Kids_{ij} B_2 + Z_{ij} B_3 + PL_{ij} B_4 + J_{ij} B_5 + u \quad (12)$$

PL_{ij} is a vector of paid leave policies available to the mother and J_{ij} is a vector of other job characteristics. If women who invest more in their infants' health choose to work in jobs that accommodate doctor's visits then job characteristics will be endogenous in this specification. Previous studies use past job characteristics as a proxy for current job characteristics under the assumption that they are more plausibly exogenous (e.g. Jacknowitz 2004).

Unfortunately because the MEPS is only a two year panel, there are too few recommended care intervals for infants whose mothers are observed prior to the birth to use lagged job characteristics. I can, however, estimate the above model on a restricted sample of infants whose mothers have worked in their current job for more than 1 year before *pregnancy*. In Chapter 2, I found most job changes prior to birth occur between 1 year before the pregnancy through early pregnancy and there are very few job changes from the second trimester through six months following the birth. This information, along with the fact that most women who do acquire or lose paid leave do so by changing jobs, suggests my restriction is similar to using lagged job characteristics.

Data

The analysis sample is drawn from the 1996 through 2005 Household Component, Event Files, and Conditions Files of the Medical Expenditure Panel Surveys (MEPS), which is the same data used in Chapter 2. The Household Component contains socio-economic data including information about the Current Main Job (analogous to the Current Population Survey definition), detailed current health status and background information, monthly insurance coverage status and characteristics of respondents' usual care providers. The Event Files consist of records for each unique household-reported medical event (e.g. office-based visit, emergency room visit, home health visit, outpatient treatment). Although the majority of well-baby visits occur in an office or clinic setting, the Emergency Room Visits File did contain some well-baby care records aside from those at the time of birth. These visits are included in the analysis. Both the Office Based Visit and Emergency Room Visit records contain the date of the visit, the broad type of care received (e.g. well-baby care, diagnosis or treatment, emergency accident or

injury), total cost of the visit by source of payment and ICD9 condition and procedure codes.

The expenditure data on the public use file are derived from both the Household and Medical Provider Components. The Medical Provider Component surveys the health care providers the household identifies in the Household Component. Data from medical providers supplement missing household data.

Respondents identify visits as well-baby care when asked the main purpose of the visit. In estimating compliance I consider a strict measure using only visits for which the main purpose reported was well-baby care, a broader measure which includes visits identified as "general check-up", "immunization or shots", and "maternal care (prenatal/postnatal)". I also consider the number of all office based visits (including sick visits) received.

To construct the analysis sample, I use all infants age 24 months and younger and determine the AAP recommended care intervals according to their dates of birth. Again, recommended care intervals are the age ranges in which a given well-baby visit is supposed to occur. Using the date of each well-baby visit on the event file, I match visits to the recommended care intervals. Throughout the analysis, the dependent variable is an indicator equal to 1 when at least one well-baby visit occurs during a recommended care interval.

Figure 3.1 is a histogram of all visits received by infants in the analysis sample by their age in months at the visit. The peaks in the distribution of visits across age indicate the timing of visits corresponds closely with the AAP recommended schedule (see Table 2 for the visit schedule). When visits are more than one month apart, the bins to the right

of each age at which the visit is to occur contain more visits the bins to the left. Thus, I define the recommended care interval for each visit to include the month in which the visit is recommended and subsequent months until the month of the next recommended visit. For example, in the 9 month recommended care interval the dependent variable would be equal to 1 for babies who received a well-baby visit at ages 9, 10 or 11 months. The only exception to this coding rule is the 1 month visit; the dependent variable is coded as 1 for infants who receive a well-baby visit before they reach 1 month of age even if they do not receive another visit at age 1 month.

Covariates are matched to recommended care intervals based on the interview round in which the recommended care interval falls. In cases where a recommended care interval overlaps two survey rounds, information from the round in which the visit occurred is used for infants who received the scheduled visit and information from the round which contains the most days of the recommended care interval is used for those who do not.

In total, the sample consists of 26,513 recommended care intervals for 7,251 infants. This sample is used to generate estimates of compliance with well-baby care recommendations. The sample used to analyze the determinants of compliance is limited to the subset of infants who have a usual care provider and received at least one office based visit for any reason within the past year. I limit the sample in this way because out of pocket costs must be estimated for all infants who do not receive any visits. Out of the 7,251 total infants in the sample 3,675 (50.7 percent) received no well-baby visits while they were in the survey. Of those, 50.9 percent received at least one office-based visit for which I have out of pocket cost information and had a usual care provider. While I have

attempted to predict out of pocket costs for the entire sample without using information about the usual care provider or average out of pocket costs for other visits, the amount of variance in the cost data I am able to explain without these variables is very low (R-squared = 0.02). Among the subset of the sample who have non-missing usual care provider and out of pocket cost for other visits data the R-squared for the price regression increases to 0.25. The regression used to predict out of pocket costs is reported in Appendix A3. After these sample restrictions and eliminating observations with missing data I have 18,393 observations for 5,041 infants, 49.2 percent of whom received no well-baby visits during the survey.

Results

Table 3.1 summarizes the timing of AAP recommended visits based on the schedule in effect from 1993 through 2005 (the study period) and provides population estimates of compliance for each recommended visit. Only 48 percent of infants received a well-baby visit during the one-month recommended care interval, and estimated compliance falls to under 25 percent by the eighteen month care interval.

Some infants may receive care during other visits that makes up for missed well-baby care. The second and third rows of Table 3.1 present the percentage of infants who received at least one other preventive care visit or sick care visit during each recommended care interval. During the first few intervals, more infants receive well-baby visits than other types of visits but by after the first year, more infants receive other visits than well-baby care. However, a substantial portion of infants (between 24.6 percent and 39.8 percent depending on the interval) receive no visits of any type during the interval.

The next four rows in Table 3.1 reports the average total number of well-baby, other preventive care and sick visits and the total number of all visits received to date. These figures include all visits received; if infants receive an extra visit during a recommended care interval that visit is counted in these figures.

Although the average number of well-baby visits received is well below the seven recommended before the 18 months care interval, the average number of doctor visits received is 10.90. Thus, if infants are receiving well-baby type care during other visits, it would seem they are receiving an adequate amount of care. However, the sample correlation between sick visits received and well-baby visits is only 0.42. Furthermore, the likelihood of receiving a recommended well-baby visit is increasing in the number of other doctors visits received during the recommended care interval. This is true whether other visits are measured in the preceding or concurrent recommended care interval, as a count or as an indicator. Adding infant fixed effects does not change the result; infants who receive at least one non-well-baby visit during a recommended care interval have a 12 percentage point higher likelihood of receiving the well-baby visit during that interval ($t = 15.17$). Both of these statistics indicate the same children who receive more well-baby care visits receive more sick visits.

It in total, it is unlikely that infants are receiving all of the care recommended during other types of visits. Nonetheless, although 20 percent of infants have not received any well-baby care by the 18 month care interval, only 1.69 percent had not received any type of preventive care. So looking at well-baby care only likely understates compliance, but by the broader measure of preventive care infants receive only 4.15 visits out of the 7 recommended prior to 18 months.

From Table 3.1 it is clear that the way in which compliance is measured can have a large impact on conclusions drawn. Table 3.2 compares measures of compliance in previous studies to estimates based on my sample. After adjusting for differences in sample and measure used, my estimates are generally in keeping with previous estimates of compliance with well-baby care. Although, compared to Ronsaville and Hakim (2000) and Byrd et al (1999), my estimates are substantially higher for black and Hispanic infants and for Medicaid recipients. The higher rates in my data could be due to the elimination of cost sharing for well-baby care under Medicaid/SCHIP in 1996 whereas both Ronsaville and Hakim (2000) and Byrd et al (1999) use data that predates the elimination of cost sharing. The differences in my estimates of compliance for blacks, Hispanics and Medicaid recipients and previous estimates suggest the gap in receipt of medical care between minorities and whites and publicly and privately insured children narrowed over the time period. My data also approximate Seldon's (2006) estimate quite well. However, if I use his measure and restrict the sample to children age two months and younger, the estimate drops to 62 percent. This suggests, in keeping with my estimates in Table 3.1, children are not receiving on-time care.

Table 3.3 presents sample means and standard deviations for the subset of the sample used in the remaining analyses (infants with usual care providers who saw a medical professional for any reason in the past year). The variables listed are a subset of those used in the actual analysis. See Appendix 3A for a more complete listing. Average out of pocket costs (co-pays) are less than $10 and lowest among infants whose mothers are not working. Although, there is some variation by insurance status behind these figures. Among privately insured infants, the average co-pay is $14.11, for Medicaid

recipients the average co-pay is $0.38 and among the uninsured the average out of pocket cost is $15.97.

Household income is higher among infants with non-employed mothers. Wages (or predicted wages), which proxy for time cost among the non-employed, are highest among employed women. The $8.50 figure for non-employed women includes predicted wages. If I restrict the sample to only non-employed women for whom I observe past wages, the mean is $8.27 (standard deviation 5.09).

A substantial minority of mothers in the sample do not have access to leave. Only 63 percent have access to any paid vacation leave, 55 percent have sick leave. Yet 87.6 percent of those with paid sick leave or 48 percent overall can use their leave to see the doctor. FMLA eligibility is rare. Only 26 percent of mothers both work for covered employers *and* meet the hours and tenure requirements to be eligible for FMLA leave.

Table 3.4 presents the estimation results of the base model (Equation 8) among infants of employed and non-employed mothers and for the entire sample. The reported estimates are marginal effects after probit estimation. The bottom row of Table 3.4 contains estimated own price and income elasticities. Among all infants the estimates suggest a 1 percent increase in the out of pocket price of care is related to a 10.6 percent reduction in the probability of receiving a given visit. This figure is nearly identical to Colle and Grossman's (1978) estimated own-price elasticity of demand for all physicians' visits among children ages 1 to 5. The estimated income elasticity implies a 1 percent increase in income is related to a 19.6 percent increase in the probability of receiving a visit, which is substantially smaller than Colle and Grossman's (1978) estimate (which was 0.379).

The estimated cross-price elasticity is positive in the full-sample, which suggests employment does not compete with well-baby care, but it is not significantly different from zero. Among non-employed women, the estimated cross-wage elasticity is negative but again not significant at conventional levels. As stated previously, current wages are unobserved for women who are not working. The measure used to proxy for wages may affect the estimated cross-price elasticities.

Table 3.5 compares estimated cross-wage elasticities using OLS predicted wages, past wages when observed and a combination of both for non-employed women. Unfortunately I was unable to find a viable identification strategy to produce selection corrected estimates of wages. Mean OLS predicted wages are about $0.40 higher among non-employed women for whom I observe past wages and using OLS predicted wages yields a much larger (in absolute value) point estimate of the cross-wage elasticity (-0.27 vs. -0.01). However, the OLS based estimate and the past wage based estimate are not statistically significantly different from zero or each other. Since there is limited information from which to predict wages (see Appendix Table A3.1 for the equation used to predict wages), the past wage measure is arguably a better proxy of available wage offers than the OLS prediction. Yet, I observe past wages for only 22.2 percent of non-employed women. Therefore, my preferred measure is a combination of OLS predicted wages for non-employed women who are never observed working in the panel and past wages where available. The last column in Table 3.5 shows that this measure produces a cross-wage elasticity estimate in the full-sample similar to the estimate obtained when only past wages are used.

Table 3.6 presents the results for the effects of maternal employment. Without attempting to address endogeneity, the sign pattern on the employment variables suggests infants whose mothers are employed are more likely to receive care than those whose mothers are not. However, the employment variables and the paid leave variable are not significantly different from zero and FMLA is only moderately significant. The sign pattern of the instrumental variables estimates contradicts the probit estimates and suggests infants whose mothers work full time are even less likely than those whose mothers work part-time to receive care. Additionally, the point estimates imply having access to paid leave or being eligible for FMLA leave mitigates the negative effect of maternal employment. Yet, none of these estimates is individually or jointly significant.

The last column of Table 3.6 displays fixed effects results. Access to paid leave and FMLA leave eligibility do not vary enough to identify parameters and are omitted from this model. Among mothers who change employment status or work schedule, the estimates indicate infants have a 4.8 percentage point (9.4 – 14.2) lower likelihood of receiving recommended visits during periods when their mothers are employed full-time than when not working and 9.4 percentage point higher likelihood during periods when their mothers are employed part time than when not working. These estimates are significant.

Table 3.7 presents the estimated relationships between paid and unpaid leave and work schedule among infants with employed mothers only. Paid leave and FMLA eligibility do not appear to have any effect on receipt of care here either and moreover few other employment related variables are significantly related to receipt of care. In the base model (Column I), no employment related variables are significantly different from

zero. Column II adds work schedule measures to the list of covariates; they are omitted in Column I because hours of work are arguably less plausibly exogenous than other variables. As in Table 3.6, women who work part-time appear to be more likely to take their children to well-baby care than those who work full-time. Although only moderately significant, the implied percentage point difference in the probability of receiving care between mothers employed part-time and those employed full-time (the benchmark category) is 3.6 percentage points, which this translates to a 10 percent increase at the mean likelihood of receiving care.

The positive relationship between part-time work and receipt of well-baby care persists when the lagged proportion of workdays missed in the last survey round and lagged number of visits are added to the model in Column III. The lagged work days variable is intended to separately capture availability and use of leave from work. The sign of the estimated coefficient does suggest women who have missed more days of work to date are less likely to take their child to the current visit but the relationship is insignificant. Furthermore, including this variable does change the sign and magnitude of point estimates for paid and unpaid leave variables but they are still not significantly different from zero. This also does not change when the sample is restricted to women who were employed in the same job two years prior to the birth in Column IV to attempt to address the potential endogeneity of paid leave.

When the number of visits received in the last round is included in Columns III and IV, there is little change in the point estimates for out of pocket cost, which implies little change in the own-price elasticity. Thus, as was apparent in the estimates of compliance, infants who have received care in the past are more likely to receive care in

the future. But this seems not to affect relationships between receipt of care and key covariates.

From the results in Table 3.7, it seems access to paid leave and FMLA eligibility have no relationship with well-baby care use. However, things change when relationships are estimated separately by wage level and work schedule and by occupation. Tables 3.8 and 3.9 present these results. Each column in Table 3.8 presents estimates for women in different work schedule and wage level combinations. Estimates in the first column are based on women working part-time in jobs that pay wages below the occupational median wage.

While none of the estimates for paid leave are significantly different from zero in any wage and work schedule group, there is an interesting pattern for FMLA eligibility. Women who work 40 hours per week in jobs that pay below median wages have an 8.8 percentage point *lower* probability of taking their babies to well-baby visits than those who are not eligible for FMLA, however, those working more than 40 hours per week in low wage jobs have a 29.5 percentage point *higher* likelihood of taking their babies to recommended visits. Admittedly, women working long hours in low wage jobs represent a small portion of the sample.

Yet, the large positive relationship between FMLA eligibility among long hours low wage women and the significant negative relationship among low wage women working 40 hours a week seem contradictory. Error in the FMLA elgibility variable is one plausible explanation for this sign pattern. Technically, FMLA is only available to employees who have worked at least 1,250 hours in the past twelve months. The FMLA variable I have constructed is based on the hours of work mothers say are "usual" at the

time they are surveyed. There is no measure of total hours per year available in the data. Women who say they usually work long schedules are more likely to accumulate at least 1,250 per year than those who say they usually work 36 hours per week. Thus, the FMLA indicator among women employed full-time (35 to 40) hours per week may reflect an underlying negative relationship between continuous full-time work and well-baby care rather than the relationship between FMLA eligibility and well-baby care. Alternatively, the measure may be correct but longer hours employees may be more familiar with FMLA because they face a more severe time crunch. Moreover, their employers may perceive the of FMLA leave among long hours employees as more legitimate and so they may be more willing to facilitate FMLA leave.

Table 3.9 further unpacks the relationships between paid leave and well-baby care by analyzing occupations separately. From these estimates, one can see why the estimates of paid leave in the full sample have been insignificant. For paid sick leave, there are both positive and negative point estimates across occupations and work schedules within occupations. Among mothers in managerial occupations, those working part-time who have paid sick leave have a 53.4 percentage point lower probability than other mothers working part-time (and 19.8 percentage point lower probability than those working full-time) of taking their baby to a given well-baby visit. Those working more than 40 hours per week who have paid sick leave are also more likely than other women in management occupations to take their babies to visits but those who say they "can" use their paid sick leave for doctors visits are less likely. Yet, paid sick leave that can be used for doctors visits is related to higher rates of well-baby care use among mothers in sales occupations who work long hours and mothers in clerical occupations who work

either part-time or long hours. In most occupations, paid vacation leave has no significant relationship with well-baby care but among clerical and production workers who work long hours, access to paid vacation leave more than offsets the negative estimated effect of long hours employment.

Results for FMLA also vary substantially across occupations. First, FMLA eligible mothers in sales occupations who work 35 to 40 hours per week have a 20.1 percentage point higher likelihood of taking their babies to visits than those working the same number of hours who are ineligible for FMLA. But among production workers, FMLA eligible mothers working 35 to 40 hours per week are *less* likely than ineligible mothers to take their children to well-baby visits. These opposing occupational level relationships led to the null finding for FMLA overall. Furthermore, the positive relationship between FMLA leave eligibility and well-baby care among long hours employees identified in Table 7 appears to emanate from women in professional, service and production occupations. In all three occupational groups, the estimated effect of FMLA is large enough to offset any negative effects of long hours work.

Hours of work have different relationships with well baby care across occupations as well. Part-time workers in managerial and sales occupations and are significantly more likely to take their babies to visits than full-time workers but in production occupations they are significantly less likely to take their babies to visits. Somewhat surprisingly, working over 40 hours per week has a significant negative relationship with well-baby care only among production employees. However point estimates are negative in all occupations except service occupations and only 8 percent of mothers in service occupations worked over 40 hours per week.

Also, an interesting pattern in the relationship between wages and well-baby care emerges in Table 3.9. Throughout the analysis, wages have been positively related to receipt of well-baby care among employed mothers. Table 3.9 shows the relationship between wages and visits is positive and significant for professional employees only. Among managerial employees, there is a significant negative relationship that is almost identical in magnitude to the relationship among professional employees. Estimates across other occupational groups are small and statistically insignificant.

Why would the relationship between wages and well-baby care be positive for professionals? It could be many of these women are nurses or other health care professionals. Nursing is among the higher paying professional jobs available without an advanced degree and is one of the more prevalent occupations among women. Unfortunately the occupational categories used in Table 6.8 are the lowest level of aggregation available in the MEPS so this hypothesis cannot be directly tested. But according to Bureau of Labor Statistics estimates, the average hourly wage among registered nurses is $30.04 and all but the lowest 10 percent of earners had wages over $20.20. The average wage among women in production occupations in my sample is $19.05. In 2000, 94 percent of all registered nurses were female and among females employed in professional occupations (using the same classification as in the MEPS data) 17 percent were registered nurses and an additional 8 percent were in other health related occupations.[11]

Although Tables 3.8 and 3.9 provide insight to explain the null estimates for paid and unpaid leave in the sample as a whole and they suggest some substantial positive

[11] Author's tabulations using 2000 Current Population Survey.

relationships between paid leave availability and compliance with well-baby care in certain jobs, these findings are based on small portions of the overall sample. As in any small sample analysis, estimates will be especially sensitive to outliers and may not generalize beyond the sample.

To provide an additional test of the relationships between paid and unpaid leave and well-baby care, I take the proportion of the sample that received at least one well-baby care visit and examine the relative likelihood of that visit occurring on a Monday through Thursday rather than on a Friday or weekend. Employees with paid and unpaid leave should be able to schedule weekday visits more easily. I treat Friday separately under the assumption and incidental evidence that flextime and compressed work week schedules commonly influence working time on Fridays more so than other days of the week.

Table 3.10 presents the days of the week analysis. Estimates are reported as marginal effects. The first column shows the percentage point change in the likelihood of a doctor visit on a weekday other than Friday. Mothers who are employed full-time have a 4 percentage point lower probability of taking their babies to well-baby care Monday through Thursday as compared to mothers who work part-time and a 7 percentage point lower probability than non-employed mothers. However, having paid vacation time entirely offsets the negative effect of full-time employment. Paid sick leave appears to reduce the likelihood of Friday visits but the relationship with weekday visits other than Friday is insignificant. There is also no evidence of a relationship between FMLA leave eligibility and the distribution of visits across days of the week.

Mothers who say their paid sick leave can be used to visit the doctor have a 15 percentage point lower likelihood of taking their baby to the doctor Monday through Thursday. This finding helps to explain some of the negative findings for paid leave to see the doctor presented in Tables 3.8 and 3.9. It could be that respondents interpreted the survey question as "must you use a paid sick day to visit the doctor" rather than "are you permitted to use a paid sick day to visit the doctor". If that is the case, this policy actually limits schedule flexibility.

Discussion and Conclusion

This paper examined the determinants of well-baby care receipt in the first two years of life among a nationally representative sample of babies born between 1994 and 2005. Most babies do not receive the AAP recommended amount of well-baby visits. I estimate that at age 18 months the average child has received only 2.25 of 8 recommended visits. Although past studies have reported higher compliance rates, using my data I demonstrate the differences in estimates result entirely from the measure of compliance used. The fact that compliance rates are low despite the low out of pocket cost of well-baby care and high insurance rate among children under two years old suggests time constraints may be important. To consider this possibility, I examine compliance with recommended well-baby care among employed and non-employed mothers and by access to paid and unpaid leave and work schedule.

Despite the low cost of care, I find a 1 percent increase in co-pays (around $1 at the mean) is related to a 10.6 percent reduction in the probability of receiving a given visit. For income, I find a 1 percent increase is related to a 19.6 percent increase in the probability of receiving a given visit. The sign of the cross-price elasticity varied across

specifications and estimates were generally insignificant. Yet when the relationship between maternal employment and well-baby care is directly estimated, I find suggestive evidence of a negative relationship between full-time maternal employment and well-baby care.

For paid and unpaid leave, I find the implied effects vary substantially across occupations and work schedules as well as earnings levels. FMLA leave is most important for long hours (over 40 hours per week on average), low wage mothers. Among these women, those with FMLA leave have a nearly 30 percentage point higher probability of taking their baby to a given visit. Further investigation of this finding reveals FMLA leave is most important for long hours employees in professional, service and production occupations and for full-time (35 to 40 hours per week) employees in sales occupations. The variation in the effects of FMLA leave suggests broad government mandated workplace flexibility may have very different effects on different types of jobs. Among the groups who are arguably most in need of flexibility (long hours, low wage employees), my findings indicate FMLA leave may substantially increase mother's ability to get their babies to the doctor. The large estimated relationships between FMLA leave eligibility and well-baby care are unique. Most studies of FMLA leave have found significant effects of the law on leave coverage but little association with changes in behavior.

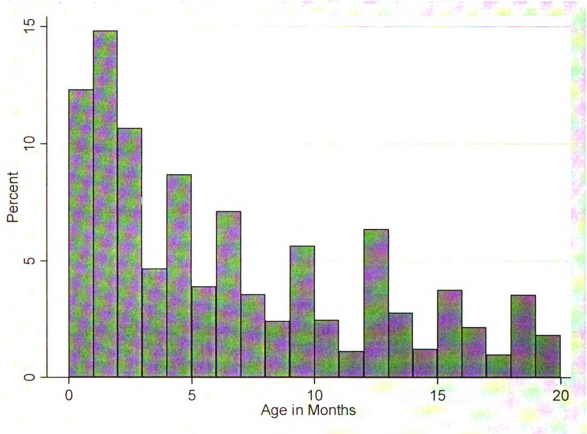
The estimated relationships between paid leave and well-baby care also vary dramatically by occupation and work schedule. Paid sick leave appears to matter most for mothers employed full-time in sales occupations and part-time production workers. Among mothers working long hours in production occupations, having paid sick leave

that can be used for doctors visits appears to more than offset the negative effect of there long work week. Long hours production employees with paid vacation leave also have a dramatically higher likelihood (estimated at 89.1 percentage points) of taking their babies to well-baby visits than long hours production workers without paid vacation. Yet among these positive estimates, there were many significant negative estimates as well. In general, it seems the role of paid leave depends on the job. In some jobs it may enable employees to take a child to the doctor, in others it may ration time off and inhibit doctor visits. Nonetheless, I do find employees with paid vacation leave have a significantly higher probability of taking their child to a well-baby visit on a weekday (as well as on a weekday other than Friday) than a weekend.

The findings for maternal employment and for differences in the effects of paid and unpaid leave across occupations, work schedules and wage groups must be interpreted with caution. As discussed, the identification strategy used to attempt to obtain unbiased estimates for maternal employment is based on the assumption that mothers bear the full responsibility for taking children to well-baby care. For some groups, my analysis of paid and unpaid leave by occupation, work schedule and wage group arguably cuts the data too thin. As in any small sample, estimates will be especially sensitive to outliers and may not generalize to larger populations. Nonetheless, the patterns I find indicate future studies should consider the possible differences in the relationships between flexible working-time policies and practices across job types whenever the sample size permits.

Figure and Tables

Figure 3.1 Correspondence between AAP Recommended Care Intervals and Distribution of Actual Visits



Source: Author tabulation. See Table 1 for AAP Visit Schedule.

Table 3.1 Estimated Compliance with the AAP Well-Baby Visit Schedule

Recommended Visits Schedule	1 Month	2 Months	4 Months	6 Months	9 Months	12 Months	15 Months	18 Months
% Received Well-Baby Visit in Interval	48.0% (2.01)	40.3% (1.6)	35.1% (1.5)	34.8% (1.2)	27.2% (1.2)	30.7% (1.7)	21.2% (1.1)	23.1% (1.2)
% Received Preventive Visit in Interval	28.1% (1.19)	31.3% (1.01)	27.8% (1.27)	32.6% (1.00)	23.9% (0.91)	30.2% (1.29)	23.2% (0.92)	27.8% (1.27)
% Received Sick Visit in Interval	22.0% (1.03)	19.7% (1.12)	23.7% (1.01)	33.2% (1.34)	38.7% (1.36)	37.4% (1.82)	34.7% (1.00)	47.9% (1.08)
% Received no Visits of Any Kind in Interval	24.6% (1.38)	26.1% (1.49)	30.2% (1.00)	25.1% (0.93)	33.0% (1.38)	28.7% (1.22)	39.8% (1.03)	28.2% (1.10)
Average # of Well-Baby Visits to Date[1]	n/a	0.74 (0.03)	1.21 (0.04)	1.53 (0.05)	1.80 (0.04)	2.03 (0.05)	2.25 (0.05)	2.25 (0.04)
Average # of Other Preventive Care Visits to Date	n/a	0.46 (0.03)	0.95 (0.04)	1.46 (0.05)	2.14 (0.05)	2.74 (0.05)	3.39 (0.04)	4.15 (0.04)
Average # of Sick Visits to Date	n/a	0.43 (0.03)	0.91 (0.04)	1.46 (0.05)	2.39 (0.06)	3.21 (0.06)	4.00 (0.08)	4.50 (0.05)
Average Total # of Office-Based Visits to Date[2]	n/a	1.64 (0.03)	3.07 (0.05)	4.45 (0.06)	6.33 (0.08)	7.98 (0.09)	9.63 (0.13)	10.90 (0.13)
% Received no Well-Baby Visits to Date	n/a	52.0% (0.02)	41.8% (1.11)	35.5% (0.79)	30.1% (0.55)	26.7% (0.45)	21.7% (0.54)	20.0% (0.28)
% Received no WB or Preventive Care Visits to Date	n/a	29.3% (1.31)	16.5% (0.72)	10.8% (0.27)	5.99% (0.17)	4.17% (0.08)	2.32% (0.07)	1.69% (0.03)
% Received no Visits of Any Kind to Date	n/a	23.6% (1.38)	12.9% (0.73)	7.37% (0.24)	3.34% (0.12)	1.74% (0.07)	0.80% (0.03)	0.50% (0.01)
Sample Size	3,753	3,385	3,249	3,096	3,130	3,407	3,443	3,030

Notes: Sample weights are applied to estimate population parameters.

[1] This figure includes additional unscheduled well-baby visits; a child who received two visits at age 2 months would contribute to visits to the average for that age.

[2] Figures include any office based visits with any medical professional including sick visits, well-baby care visits, and other preventive care.

Table 3.2 Replication of Previous Compliance Estimates

	Ronsaville and Hakim (2000)	Byrd et al. (1999)	Selden (2006)
Their Estimate	White: 58% Black: 35% Hispanic: 37%	Medicaid: 36% Privately Insured: 49%	83.2%
My Estimate	White: 62% Black: 49% Hispanic: 49%	Medicaid: 43.3% Privately Insured: 53.9%	79.0%
Measure Used	Receipt of three or more well-baby visits or visits where an immunization occurred by age 6 months.19	Percentage of recommended care intervals where at least one visits was received among children who received at least 1 visit.	Mean percentage of recommended well-baby visits received among infants. Visits include general check-ups and visits where immunizations occurred.

Table 3.3 Sample Means and Standard Deviations for Selected Variables[1]

	All	Mother Employed	Mother Non-Employed
Out of Pocket Cost	$7.62 (17.01)	$9.92 (18.64)	$5.55 (15.11)
Diagnosed with Serious Condition	0.21 (0.36)	0.22 (0.36)	0.21 (0.67)
Uninsured	0.11 (0.31)	0.11 (0.31)	0.12 (0.32)
Income	$36,937.3 (32975.20)	$35,712.09 (31189.70)	$38,038.51 (34,465.60)
Wage (or time cost estimate)	$10.41 (6.74)	$12.54 (8.44)	$8.50 (3.78)
Salaried		0.25 (0.43)	
Sick Leave		0.55 (0.50)	
Paid Leave Used to See Doctor		0.48 (0.50)	
Vacation Leave		0.63 (0.48)	
FMLA		0.26 (0.44)	
Number of Employees		1.51 (1.83)	
Union Member		0.09 (0.28)	
Management		0.10 (0.30)	
Professional		0.25 (0.43)	
Service		0.21 (0.41)	
Sales		0.14 (0.35)	
Clerical		0.20 (0.40)	
Production		0.09 (0.28)	
Other Occupations		0.02 (0.13)	
Federal Government Employee		0.03 (0.16)	
State Government Employee		0.09 (0.29)	
More than One Job[3]		0.05 (0.22)	
Tenure		3.20 (3.78)	
Observations	18,393	8,706	9,687

[1] See Appendix A3 for complete listing of variables and definitions

[2] Mean household income is reported here, full income is used in the analysis.

[3] For multiple job holders, all other job related variables are based on the main job.

Table 3.4 Base Model (Equation 8) Results by Maternal Employment

	(I) Non-Employed	(II) Employed	(III) All
Out of Pocket Cost	-0.003+	-0.014*	-0.005**
	(0.002)	(0.003)	(0.002)
Out of Pocket Cost^2	0.000+	0.000*	0.000+
	(0.000)	(0.000)	(0.000)
Full Income (10 Thousands)	0.006**	0.005*	0.006*
	(0.003)	(0.002)	(0.002)
Full Income^2 (10 Thousands)	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
ln(wage or time cost)	-0.028	0.011	0.005
	(0.021)	(0.013)	(0.011)
Observations	9687	8706	18393
(Pseudo) R-squared	0.101	0.095	0.092
Own Price Elast	-0.054+	-0.036**	-0.106*
	(0.033)	(0.060)	(0.046)
Cross-Price Elast	-0.118	0.034	0.017
	(0.089)	(0.040)	(0.038)
Income Elast	0.218**	0.176**	0.196**
	(0.074)	(0.059)	(0.050)

(I) Babies with non-employed mothers.
(II) Babies with employed mothers only.
(III) All babies.

Note: Estimates control for insurance coverage by source, characteristics of the usual care provider, whether or not the child has previously been diagnosed with a serious health condition, mother's subjective rating of child's health, mother's educational attainment, number of children mother has ever had and number of children in the household, recommended care interval, race and ethnicity, non-English speaking household, mother's marital status, region and urban residence.

Table 3.5 Sensitivity of Estimated Cross-Wage Elasticity to Measure of Wages

	OLS Predicted Wage	Average Past Wage	Combined Measure in Among All non-Employed
Mean Predicted Value of Time (Standard Deviation)	$9.46 (4.30)	$9.09	$8.50 (3.78)
Estimated Marginal Effect for ln(wage) in base model (Standard Error)	-0.27 (0.17)	-0.01 (0.02)	-0.03 (0.02)
Observations	2,157	2,157	9,687

Notes: For comparability across methods, the estimates in the first two columns include only those women for whom past wages are observed.

Table 3.6 Estimated Effects of Maternal Employment and Paid Time Off

	Probit	IV Probit	Fixed Effects
Out of Pocket Cost	-0.004*	-0.006	-0.001
	(0.002)	(0.009)	(0.001)
Out of Pocket Cost^2	0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)
Full Income (10 Thousands)	0.006**	0.006	-0.011
	(0.002)	(0.012)	(0.011)
Full Income^2 (10 Thousands)	-0.000	-0.000	0.000
	(0.000)	(0.000)	(0.000)
ln(wage)	-0.008	-0.223	-0.056
	(0.019)	(0.317)	(0.043)
Employed	.033	-0.960	0.094*
	(0.025)	(2.776)	(0.045)
Employed Full-Time	-0.009	-4.887	-0.142**
	(0.026)	(7.563)	(0.050)
Any Paid Leave Available	-0.004	3.890	
	(0.026)	(4.817)	
FMLA Eligible	-0.041+	2.041	
	(0.026)	(3.848)	
Observations	7,667	7,667	

Notes: Reported estimates are marginal effects. Father's wage, hours of work, hours of work squared and whether or not he is salaried (as opposed to hours) are used to instrument for employment, full-time employment, paid leave and FMLA. Estimates are based on infants whose father is present in the household and for whom the father has non-missing wage and hours of work information. Paid leave and FMLA variables are excluded from the fixed effects estimation because there is too little within person variation to identify effects; insurance status, subjective health indicators and recommended care interval are controlled for.

Table 3.7 Results for Paid and Unpaid Leave and Other Job Attributes

	(I)	(II)	(III)	(IV)
Out of Pocket Cost	-0.014*	-0.014*	-0.013*	-0.016*
	(0.003)	(0.003)	(0.003)	(0.004)
Out of Pocket Cost^2	0.000*	0.000*	0.000*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
Full Income (10 Thousands)	0.005**	0.005**	0.003**	0.001
	(0.002)	(0.002)	(0.002)	(0.003)
Full Income^2 (10 Thousands)	-0.000	-0.000	-0.000**	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)
ln(wage)	0.012	0.012	0.029+	0.059**
	(0.014)	(0.014)	(0.015)	(0.027)
Salaried	0.000	0.005	-0.021	-0.024
	(0.020)	(0.021)	(0.022)	(0.034)
Paid Sick Leave	0.041	0.050	0.001	-0.026
	(0.032)	(0.032)	(0.035)	(0.061)
Sick Leave used to See Doctor	-0.023	-0.026	0.001	0.076+
	(0.028)	(0.028)	(0.030)	(0.044)
Paid Vacation Leave	-0.005	0.004	-0.004	-0.009
	(0.021)	(0.021)	(0.023)	(0.047)
FMLA Eligible	-0.010	-0.004	0.017	0.048
	(0.022)	(0.023)	(0.025)	(0.041)
# Employees (in 100s)	-0.016	-0.015	-0.026	-0.045
	(0.020)	(0.020)	(0.022)	(0.039)
# Employees^2 (in 100s)	0.003	0.003	0.004	0.006
	(0.004)	(0.004)	(0.004)	(0.007)
Union Member	-0.031	-0.025	-0.041	-0.036
	(0.029)	(0.029)	(0.032)	(0.048)
Managerial	-0.005	-0.007	-0.009	-0.061
	(0.030)	(0.030)	(0.034)	(0.057)
Professional	0.009	0.004	0.015	-0.029
	(0.026)	(0.026)	(0.029)	(0.055)
Sales	0.018	0.013	0.009	-0.009
	(0.025)	(0.025)	(0.029)	(0.060)
Clerical	-0.003	-0.003	0.007	0.053
	(0.024)	(0.024)	(0.027)	(0.053)
Production	-0.023	-0.020	-0.044	-0.139**
	(0.030)	(0.030)	(0.034)	(0.059)
Other Occupation	-0.030	-0.019	-0.037	-0.194**
	(0.058)	(0.062)	(0.082)	(0.088)
Self Employed	0.066	0.067	0.032	n/a
	(0.083)	(0.084)	(0.088)	
Federal Govt Employee	-0.009	-0.012	0.006	0.051
	(0.045)	(0.046)	(0.044)	(0.073)
State Govt Employee	0.004	-0.001	0.014	0.008
	(0.029)	(0.029)	(0.031)	(0.046)
More than 1 Job	-0.042	-0.047	-0.035	0.052
	(0.031)	(0.031)	(0.036)	(0.072)
Tenure	0.008	0.008	0.019*	0.028+
	(0.006)	(0.006)	(0.006)	(0.016)
Tenure^2	-0.000	-0.000	-0.001**	-0.001+
	(0.000)	(0.000)	(0.000)	(0.001)

Table 3.7 Results for Paid and Unpaid Leave and Other Job Attributes (Continued)

Part Time (< 35 Hrs per Week)		0.037+ (0.019)	0.036+ (0.022)	0.052 (0.043)
Over Time (>40 Hrs per Week)		0.016 (0.023)	0.014 (0.025)	0.014 (0.038)
% Work Days Missed Last Round			-0.065 (0.042)	-0.060 (0.067)
Visits Received Last Round			0.215* (0.014)	0.263* (0.023)
Observations	8706	8643	4736	1937

Note: All regressions also control for race/ethnicity, mother's marital status, mother's education, number and ages of children, recommended care interval, region, characteristics of the usual care provider, insurance coverage, and objective and subjective infant health measures.

Table 3.8 Results for Paid and Unpaid Leave and Other Job Attributes by Work Schedule and Wage Level

Note: All regressions also control for race/ethnicity, mother's marital status, mother's education, number and ages of children, recommended care interval, region, and insurance coverage (uninsured, privately insured or Medicaid). Usual care provider variables, insurance coverage variables and characteristics of the employer were collapsed due to the small number of observations in some wage/schedule groups. Below and above median wage designations are with respect to the occupation. As before, characteristics of the main job are used for multiple job holders.

[1] Excludes self-employed.

Table 3.8 Results for Paid and Unpaid Leave and Other Job Attributes by Work Schedule and Wage Level

	Part Time		Full Time		Over Time (> 40 Hours)	
	Below Median	Above Median	Below Median	Above Median	Below Median	Above Median
Out of Pocket Cost	-0.018*	-0.028*	-0.014*	-0.013*	-0.044*	-0.031*
	(0.005)	(0.006)	(0.004)	(0.004)	(0.011)	(0.007)
Out of Pocket Cost^2	0.000*	0.000*	0.000*	0.000*	0.001*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Full Income (10 Thousands)	0.028*	-0.009	0.004	0.009	-0.031	-0.003
	(0.009)	(0.010)	(0.006)	(0.006)	(0.034)	(0.009)
Full Income^2 (10 Thousands)	-0.001**	0.000	-0.000	-0.000	0.001	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)
Ln(wage)	-0.013	-0.068	0.015	0.046	0.124+	0.217+
	(0.019)	(0.089)	(0.025)	(0.060)	(0.068)	(0.117)
Salaried	-0.092	0.148**	-0.011	0.015	0.027	0.020
	(0.058)	(0.070)	(0.038)	(0.034)	(0.109)	(0.066)
Paid Sick Leave	0.113	0.034	0.068	0.040	0.166	-0.150
	(0.099)	(0.118)	(0.064)	(0.050)	(0.152)	(0.132)
Sick Leave to See Doctor	-0.019	-0.019	-0.030	-0.061	-0.116	0.054
	(0.091)	(0.097)	(0.059)	(0.045)	(0.115)	(0.089)
Paid Vacation Leave	-0.027	-0.075	0.029	0.065	0.147	-0.070
	(0.043)	(0.077)	(0.033)	(0.045)	(0.119)	(0.089)
FMLA			-0.088**	-0.023	0.295**	-0.037
			(0.038)	(0.037)	(0.120)	(0.101)
# Employees (in 100s)	-0.009	-0.047	0.029	0.019	-0.322**	0.079
	(0.048)	(0.059)	(0.035)	(0.038)	(0.156)	(0.102)
# Employees^2 (in 100s)	-0.003	0.008	-0.007	-0.002	0.062**	-0.010
	(0.010)	(0.012)	(0.007)	(0.007)	(0.029)	(0.017)
Union Member	0.127	0.054	-0.001	-0.014	-0.006	-0.211**
	(0.110)	(0.079)	(0.059)	(0.045)	(0.239)	(0.090)
Managerial	-0.020	0.135	0.028	0.029	-0.075	-0.092
	(0.076)	(0.112)	(0.059)	(0.070)	(0.145)	(0.127)
Professional	-0.038	0.069	0.043	0.029	-0.112	0.159
	(0.049)	(0.090)	(0.060)	(0.066)	(0.180)	(0.132)
Sales	-0.064	0.133**	0.056	-0.025	0.004	0.160
	(0.040)	(0.060)	(0.062)	(0.049)	(0.284)	(0.123)
Clerical	0.013	0.039	0.027	-0.031	-0.068	0.093
	(0.048)	(0.085)	(0.047)	(0.044)	(0.177)	(0.126)
Production	-0.134+	-0.293+	0.080	-0.107**	-0.305	-0.031
	(0.072)	(0.155)	(0.057)	(0.043)	(0.249)	(0.137)
Other Occupation	0.147	-0.030	0.136	-0.215+	0.024	-0.310*
	(0.168)	(0.247)	(0.117)	(0.117)	(0.189)	(0.099)
Private Sector Employee[1]	-0.006	-0.028	0.029	0.002	-0.244**	0.124
	(0.059)	(0.067)	(0.043)	(0.042)	(0.098)	(0.077)
More than 1 Job	-0.082	-0.050	0.015	0.025	-0.190	-0.090
	(0.050)	(0.074)	(0.075)	(0.072)	(0.212)	(0.105)
Tenure	-0.018	-0.012	0.017	0.021**	0.051	0.003
	(0.015)	(0.016)	(0.010)	(0.010)	(0.051)	(0.026)
Tenure^2	0.001	0.002	-0.001+	-0.001	-0.006	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.004)	(0.002)
Observations	1622	1115	2152	2696	366	692

Table 3.9 Results for Paid and Unpaid Leave and Other Job Attributes by Occupation and Work Schedule

	Managerial	Professional	Service	Sales	Clerical	Production
Out of Pocket Cost	-0.060*	-0.030*	-0.013*	-0.011**	-0.007+	-0.022*
	(0.009)	(0.004)	(0.004)	(0.005)	(0.003)	(0.008)
Out of Pocket Cost^2	0.001*	0.000*	0.000*	0.000**	0.000+	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Full Income (10 Thousands)	0.005	0.007	0.013+	0.023*	-0.002	-0.006
	(0.004)	(0.007)	(0.007)	(0.008)	(0.007)	(0.007)
Full Income^2 (10 Thousands)	-0.000**	-0.000	-0.000	-0.000**	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ln(wage)	-0.071**	0.070+	-0.002	-0.039	0.006	0.102
	(0.032)	(0.037)	(0.023)	(0.032)	(0.031)	(0.080)
Salaried	0.108+	-0.005	-0.026	-0.042	0.050	-0.209*
	(0.062)	(0.038)	(0.043)	(0.068)	(0.045)	(0.028)
PT	0.336*	0.017	0.026	0.123+	0.025	-0.178*
	(0.111)	(0.091)	(0.039)	(0.063)	(0.067)	(0.052)
OT	-0.102	-0.123	0.007	-0.046	-0.117	-0.454*
	(0.219)	(0.208)	(0.077)	(0.143)	(0.172)	(0.041)
Paid Sick Leave	-0.040	0.136	-0.087	0.169+	0.064	-0.015
	(0.180)	(0.115)	(0.072)	(0.102)	(0.082)	(0.061)
Paid Sick Leave*PT	-0.534*	-0.072	0.106	0.140	-0.263**	0.789*
	(0.094)	(0.181)	(0.164)	(0.166)	(0.115)	(0.113)
Paid Sick Leave*OT	0.380+	0.016	-0.267*	-0.167	-0.359*	-0.123
	(0.215)	(0.231)	(0.014)	(0.149)	(0.035)	(0.148)
Sick Leave to See Doctor	0.144	-0.140+	0.077	-0.104	-0.043	-0.077
	(0.131)	(0.076)	(0.082)	(0.080)	(0.071)	(0.065)
Doc Leave*PT	0.025	0.145	-0.076	-0.003	0.507**	-0.121
	(0.218)	(0.138)	(0.117)	(0.148)	(0.205)	(0.150)
Doc Leave*OT	-0.421*	0.116	0.777*	0.258	0.406**	0.714*
	(0.161)	(0.100)	(0.012)	(0.233)	(0.166)	(0.144)
Paid Vacation Leave	0.036	0.068	0.022	0.043	-0.093	0.077
	(0.121)	(0.071)	(0.049)	(0.084)	(0.074)	(0.054)
Paid Vacation Leave*PT	0.215	-0.142	-0.038	-0.144	-0.017	-0.146
	(0.170)	(0.109)	(0.070)	(0.092)	(0.117)	(0.170)
Paid Vacation Leave*OT	0.192	-0.071	-0.090	0.109	0.540*	0.891*
	(0.238)	(0.114)	(0.118)	(0.181)	(0.191)	(0.016)
FMLA	-0.110	-0.058	0.015	0.201**	-0.027	-0.141**
	(0.078)	(0.050)	(0.064)	(0.097)	(0.050)	(0.057)
FMLA*OT	-0.238**	0.174**	0.351**	-0.108	-0.070	0.774*
	(0.108)	(0.084)	(0.175)	(0.119)	(0.099)	(0.077)
# Employees (in 100s)	0.123+	-0.075+	-0.022	0.013	-0.029	0.085+
	(0.069)	(0.045)	(0.047)	(0.050)	(0.042)	(0.050)
# Employees^2 (in 100s)	-0.019	0.011	0.006	-0.002	0.004	-0.014
	(0.012)	(0.008)	(0.009)	(0.010)	(0.008)	(0.009)
Union Member	0.323*	-0.094+	0.063	-0.050	-0.131**	0.088
	(0.113)	(0.052)	(0.064)	(0.101)	(0.065)	(0.075)
Private Sector Employee[1]	0.165+	0.010	-0.024	0.000	-0.020	0.074
	(0.095)	(0.039)	(0.052)	(0.143)	(0.062)	(0.066)
Tenure	0.217**	-0.115+	-0.072	0.018	0.128	-0.005
	(0.104)	(0.067)	(0.047)	(0.091)	(0.087)	(0.147)

Table 3.9 Results for Paid and Unpaid Leave and Other Job Attributes by Occupation and Work Schedule (Continued)

Tenure^2	0.005 (0.019)	0.003 (0.013)	-0.000 (0.011)	-0.041** (0.017)	0.063* (0.013)	-0.007 (0.016)
Obs in Group (Total 8,514)	870	2152	1814	1203	1732	755

Note: All regressions also control for race/ethnicity, mother's marital status, mother's education, number and ages of children, recommended care interval, region, and insurance coverage (uninsured, privately insured or Medicaid). Usual care provider variables, insurance coverage variables and characteristics of the employer were collapsed due to the small number of observations in some wage/schedule groups. Below and above median wage designations are with respect to the occupation. As before, characteristics of the main job are used for multiple job holders. Women working in "other occupations" (farming and construction) are omitted due to small sample size.

[1] Excludes self-employed.

Table 3.10 Probability of Weekend, Weekday (except Friday) and Friday Visits by Employment Status, Paid Leave and Occupation (Multinomial Probit)

	Weekday Friday	Friday	Weekend
Employed	-0.03 (0.03)	0.08 (0.02)	0.02 (0.01)
Employed 35 hours or more per week	-0.04** (0.02)	0.03* (0.01)	0.01 (0.01)
Employed with Paid Vacation Leave	0.07** (0.022)	-0.05* (0.02)	-0.03* (0.01)
Employed with Paid Sick Leave	0.056 (0.03)	-0.06* (0.03)	0.01 (0.02)
Employed with Paid Leave to See Doc.	-0.15** (0.03)	0.13** (0.03)	0.02 (0.02)
Employed with FMLA Leave	0.01 (0.02)	-0.01 (0.02)	0.00 (0.01)
Employed in Management Occ.	0.04 (0.02)	-0.01 (0.03)	-0.03** (0.01)
Employed in Professional Occ.	0.03 (0.03)	0.00 (0.03)	-0.04** (0.01)
Employed in Service Occ.	0.04 (0.03)	-0.02 (0.02)	-0.02 (0.01)
Employed in Sales Occ.	-0.06+ (0.03)	0.05 (0.03)	0.01 (0.02)
Employed in Clerical Occ.	0.05+ (0.03)	-0.03 (0.02)	-0.02+ (0.01)
Employed in Production Occ.	-0.03 (0.04)	0.03 (0.04)	-0.00 (0.02)
Employed in Other Occupation[1]	-0.05 (0.07)	0.05 (0.07)	-0.01 (0.03)
Observations	6,440	6,440	6,440

Notes: Significance is for 2 tailed Z test

[1] Other occupation includes farm and construction occupations.

Appendix A3

Prediction of Time Cost for Non-Employed Women

To predict the time costs for non-employed women used in the analysis in Chapter 3 I use an OLS regression of wages among employed women on maternal education, age, region of residence, number of children, race, ethnicity and marital status. The results of this estimation are presented in Table A3.1. Using these covariates, I obtain an R-squared of 0.29. Although these estimates are based on a selected sample, there are no readily apparent valid exclusion restrictions to enable selection corrected predictions.

Prediction of Out of Pocket Cost for Infants who do not Receive any Visits

As explained in the text, 50 percent of infants do not receive any well-baby visits during the survey. Among infants who do receive at least one visit I can use price data from past visits as a proxy for price of visits not received but I must predict out of pocket costs for infants who did not receive any visits. To do so, I restrict the sample to infants who have a usual care provider and received one office based medical visit of any kind within the past year. Without doing so, the amount of variation in the cost of visits I can explain is too low to convincingly predict missing out of pocket cost data (R-squared = 0.02). With these variables I can explain approximately 25 percent of the variation in out of pocket costs. The out of pocket cost regression is reported in Table A3.2. Because of the highly right skewed distribution of out of pocket costs I omit the top 1 percent. The high proportion of 0's in the actual price data preclude a log transformation. Also, since cost sharing was eliminated under Medicaid in 1996, I assign $0 out of pocket cost to all Medicaid infants with missing price data from 1997 forward.

Table A3.1 Equation for Predicted Wages for Non-Employed Mothers: OLS

	ln(wage)
Less than High School	-0.148**
	0.015
GED	-0.086**
	(0.023)
4 Year College Degree	0.484**
	(0.016)
Graduate Degree	0.732**
	(0.022)
Mother's Age	0.059**
	(0.008)
Mother's Age^2	-0.001**
	(0.000)
Urban	0.115**
	(0.013)
NE	-0.043*
	(0.018)
MW	-0.064**
	(0.016)
S	-0.070**
	(0.014)
Number of Children	-0.008
	(0.006)
Number of Children < 6	-0.017*
	(0.021)
Black	-0.091**
	(0.015)
Asian, American Indian, Pacific Islander	0.017
	(0.021)
Hispanic	-0.040**
	(0.015)
Non-English Speaking	-0.176**
	(0.020)
Married	0.090**
	(0.013)
Observations	14,370
R-squared	0.290

Table A3.2 Equation for Predicted Out of Pocket Cost

	Out of Pocket Cost
Recommended Care Interval (e.g. 1 month)	0.261+
	(0.145)
Private Insurance through Employer	-0.862
	(1.000)
Private Non-Group Insurance	3.184
	(2.141)
Private Insurance through Self Employment	2.270
	(3.457)
Other Private Group Insurance	5.715
	(7.684)
Other Private Insurance	13.235
	(9.659)
Usual Care Provider is: (Omitted Category is Pediatrician)	
General Practitioner	-2.016
	(1.266)
OB/GYN	-3.779+
	(2.138)
Other Medical Doctor	-4.713
	(8.879)
Nurse Practitioner	2.914
	(6.750)
Physician's Assistant	18.693**
	(7.133)
Type of Practice: (Omitted Category is Individual Doctor in Group Practice)	
Individual Doctor's Office	-1.084
	(1.152)
Group Practice	-2.500*
	(1.003)
Average Cost per Office Based Visit (Visits of Any Type Received During the Year)	0.444**
	(0.077)
Urban	1.266
	(0.952)
NE	-1.928*
	(0.835)
MW	2.386*
	(1.097)
S	1.394
	(1.019)
Constant	6.022
	(1.619)
Observations	3,935
R-Squared	0.253

Note: The distribution of out of pocket costs is very skewed to the right. To predict missing price data I exclude the top 1% of observed out of pocket costs. Also, out of pocket cost is not predicted for those covered by Medicaid; due to the elimination of cost sharing under Medicaid/SCHIP a $0 out of pocket cost is assumed.

Table A3.3 Means and Standard Deviations of Independent Variables by Maternal Employment

	Employed	Non-Employed
Received Visit in Care Interval	0.33 (0.47)	0.26 (0.44)
Out of Pocket Cost	$9.92 (18.64)	$5.55 (15.11)
Household Income	$35,712.09 (31,189.70)	$38,038.51 (34,465.60)
Wage	$12.54 (8.44)	$8.50 (3.78)
Salaried	0.25 (0.43)	
Paid Sick Leave	0.55 (0.50)	
Sick Leave used to See Doctor	0.48 (0.50)	
Paid Vacation Leave	0.63 (0.48)	
FMLA Eligible	0.26 (0.44)	
# Employees (in 100s)	1.51 (1.83)	
# Employees^2 (in 100s)	5.64 (9.39)	
Union Member	0.09 (0.28)	
Managerial	0.10 (0.30)	
Professional	0.25 (0.43)	
Sales	0.14 (0.35)	
Clerical	0.20 (0.40)	
Production	0.09 (0.28)	
Other Occupation	0.02 (0.13)	
Self Employed	0.01 (0.09)	
Federal Govt Employee	0.03 (0.16)	
State Govt Employee	0.09 (0.29)	
More than 1 Job	0.05 (0.22)	
Tenure	3.20 (3.78)	
Tenure^2	24.55 (52.97)	
Part Time (< 35 Hrs per Week)	0.32 (0.47)	

Table A3.4 Means and Standard Deviations of Independent Variables by Maternal Employment (Continued)

Over Time (>40 Hrs per Week)	0.12 (0.33)	
% Work Days Missed Last Round	0.08 (0.22)	
Visits Received Last Round	0.43 (0.70)	0.34 (0.63)
Private Employer Provided Insurance	0.56 (0.50)	0.25 (0.43)
Private Non-Group Insurance	0.01 (0.10)	0.01 (0.11)
Medicaid	0.34 (0.47)	0.62 (0.49)
UCP is General Practitioner	0.11 (0.31)	0.12 (0.33)
UCP is OB/GYN	0.00 (0.05)	0.00 (0.06)
UCP is an Individual Doctor in Own Office	0.25 (0.43)	0.28 (0.45)
UCP is Group Practice (No Individual Doctor)	0.62 (0.49)	0.64 (0.48)
Diagnosed with Serious Condition	0.22 (0.36)	0.21 (0.37)
Subjective Health Rating = Excellent	0.52 (0.50)	0.49 (0.50)
Subjective Health Rating = Very Good	0.29 (0.46)	0.27 (0.44)
Subjective Health Rating = Fair	0.03 (0.17)	0.04 (0.19)
Subjective Health Rating = Poor	0.00 (0.07)	0.01 (0.08)
Mother Has Less than High School Education	0.16 (0.36)	0.42 (0.49)
Mother has GED	0.05 (0.22)	0.05 (0.21)
Mother has Bachelor's	0.19 (0.39)	0.09 (0.28)
Mother has Graduate Degree	0.08 (0.27)	0.02 (0.14)
Number of Children Mother has Ever Had	1.71 (1.25)	2.21 (1.45)
Number of Children Ever Had Currently Under Age 6	1.28 (0.98)	1.59 (1.15)
Mother's Age	28.46 (5.83)	26.82 (6.34)
Mother's Marital Status	0.68 (0.47)	0.64 (0.48)
White	0.75 (0.43)	0.81 (0.39)
Black	0.18 (0.39)	0.13 (0.34)
Hispanic	0.25 (0.43)	0.46 (0.50)

Table A3.4 Means and Standard Deviations of Independent Variables by Maternal Employment (Continued)

Non-English	0.09 (0.29)	0.29 (0.45)
Urban	0.80 (0.40)	0.80 (0.40)
NE	0.15 (0.36)	14.07 (0.35)
MW	0.25 (0.43)	15.05 (0.36)
S	0.37 (0.48)	0.37 (0.48)
Observations	8,706	9,687

Conclusion

Summary of Findings

This dissertation examined the actual and expected childbearing, employment behavior and compliance with well-baby care visit schedule the relationship between access to paid and unpaid leave and other job attributes and these behaviors. Chapter 1 provided an examination of the cross-cohort trends in expected and actual childbearing and compared the characteristics of women's chosen occupations prior to the birth of their first child by their childbearing expectations. Previous studies that examine subsets of the cohorts studied in Chapter 1 conclude expectations are a fairly good approximation of actual fertility at the cohort level. However with few exceptions, the cross-cohort trends among women born in the 1930s and 1940s through the 1970s do not approximate the cross-cohort trend in actual fertility. While the proportion of women who expected to become mothers was increasing from the 1947 through 1972 cohorts, the trend in actual motherhood was flat or even negative. In nearly all cohorts expectations underestimate the likelihoods of postponing first births and having more than three children. The only group among whom the trend in expected fertility appears to lead the trend in actual fertility is college educated women born after 1950.

Chapter 1 also compared occupational characteristics by expected and actual motherhood and first birth timing as a first step towards understanding relationships between childbearing expectations and early employment behavior. For all occupational characteristics considered, the largest differences existed between childless women and mothers. I found no evidence of systematic differences between childless women's occupations based on their birth expectations. From this finding I infer the differences in

mothers' and childless women's occupations are due to sorting at and around the time of the first birth rather than early in women's careers.

Chapter 2 directly examines job changing and labor force exits among women up to 1 year before *pregnancy* and eighteen months after. Although Chapter 2 focuses on job quitting rather than returns to work it is closely related to the return to work literature. Most return to work studies have used the NLSY 1979 and have not examined job changing behavior; women in the NLSY 1997 are not yet far enough into their childbearing years to support this kind of analysis. Chapter 2 uses the Medical Expenditure Panel Data Surveys from 1996 through 2005, which constitute a more recent and nationally representative sample of expecting and new mothers. Based on this sample, I estimate approximately 55 percent of mothers remain in the jobs they held 1 year before pregnancy through eighteen months after the birth, 16 percent change jobs and 35 percent leave the labor force.[12] Compared to Klerman and Leibowitz's (1999) estimates of job continuity among women who had children during the 1980s, fewer women who had children between 1993 and 2005 quit their jobs. Most labor force exits are clustered within the three months preceding and three months following the birth but job changes occur prior to the pregnancy, in the first trimester and after the baby is twelve weeks old. Very few women change jobs with the months immediately preceding and following the birth. This finding indicates future studies need to consider a wider time frame than is customary in existing literature in order to capture all relevant employment behavior to correctly classify women as having stayed in their job, changed

[12] Estimates are based on survival probabilities and use sample weights to generate estimates of population parameters. They do not sum to 100% due to estimation error.

jobs or left the laborforce and more plausibly assume the jobs observed are not a selected sample.

As expected, wages in the prebirth job decrease the likelihood of quitting to change jobs or leave the labor force. In general, differences in employer provided benefits, including paid leave, explain more of the variation in quit behavior prior to the birth than after whereas differences in occupation, sector of employment (public or private) and wages appear to matter most for quit decisions after the birth.

In Chapter 2 the overall evidence for sorting to obtain paid leave is weak. While I do find women without paid vacation leave are more likely to change jobs prior to the birth, I find no significant differences among women with and without sick leave. Furthermore, having paid vacation does not appear to deter quits after the birth. In my descriptive analysis of old and new jobs among job changers, I do find women were more likely to acquire paid leave of either type (sick or vacation) than to lose it. However, they also moved into higher wage jobs that were more likely to offer health insurance and retirement plans. In short, the possibility that women changed jobs for other reasons and happened to obtain paid leave cannot be ruled out and the results as a whole suggest wages are a more important determinant of quit behavior than paid leave.

In Chapter 3 I estimated compliance with the American Academy of Pediatrics recommended schedule of well-baby care visits and attempted to explain why compliance rates are so low. Well-baby care is preventive care for children from birth through two years of age (when it becomes well-child care) and includes vaccinations, health screenings, physical examination and anticipatory guidance for parents. An estimated 52 percent of infants do not receive their first well-baby care visit at age one month and

compliance rates fall from there. Out of 8 recommended visits over the first 18 months, the average baby receives just over 2. This is somewhat surprising considering the low level of cost sharing under both private and public health insurance plans and the high level of insurance coverage among very young children. Thus, I examine the relationships between well-baby care, maternal employment and paid and unpaid leave available to mothers to see if time constraints and competition between work and taking one's child to the doctor can explain low compliance rates.

Even after controlling for maternal employment and access to paid and unpaid leave, copays do reduce the likelihood of receiving a given recommended visit. A 1% increase in copays, which would be about $1 on average, reduces the likelihood of receiving a given visit by 19.6 percent. Among children whose mothers work outside the home, mother's access to paid vacation, sick or FMLA leaves does increase the likelihood of receiving a visit but only in certain types of jobs. For example, effects of FMLA are large among mothers in long hours, low wage jobs but insignificant across all jobs. Paid sick and vacation leave matter most for women in professional, clerical and production occupations. In other occupations mothers' access to paid leave is negatively related to receipt of well-baby care. These findings suggest paid leave may act as a rationing policy rather than a flexibility enabling policy in some jobs. Additionally, I find mothers who enter or leave the labor force are less likely to take their children to visits during recommended care intervals when they are employed. However, cross-sectional estimates of relationships between maternal employment and well-baby care were inconclusive.

Implications for Future Research

Job changing behavior has largely been ignored in the return to work literature. The findings in Chapters 1 and 2 indicate job continuity among women of childbearing age and new mothers may be more complex than a simple model of compensating wage differentials and lifecycle labor supply would imply. In Chapter 1 I find no evidence of sorting into occupations with more family friendly benefits and characteristics prior to the birth and my analysis of expectations suggests women may not have enough information to accurately anticipate their fertility and engage in efficient sorting. But there could still be important sorting behavior occurring within occupations. In Chapter 2, using availability of paid and unpaid leave and other attributes of women's pre-pregnancy jobs, I find mixed evidence regarding sorting behavior in the months preceding and following a birth. Availability of paid and unpaid leave do not appear to influence job changing behavior in the regression analysis but simple tabulations of the characteristics of old and new jobs are suggestive of sorting into jobs with paid leave. Further analysis of job changes before and after births as the NLSY 1997 becomes available and with other data sets which contain information about recent employment and childbearing behavior is needed to better identify the sorting that is occurring and the influence of family friendly job characteristics.

Additionally, Chapter 2 demonstrates that the time interval over which employment behavior is observed may lead to misclassification of employment behavior and in turn affect the estimated relationships between employment behavior and variables of interest. Also, relationships between key covariates and employment behavior may change over the months preceding and following a birth. For example, I find FMLA leave eligible women are less likely to quit their jobs before giving birth but their quit

behavior after the birth does not differ from the quit behavior of women ineligible for FMLA leave. The distribution of job changes and labor force exits suggests future research should aim to analyze behavior from at least twelve months before and preferably twenty months before the birth and be cognizant of the potential for misclassification when shorter intervals must be used. Furthermore, separately estimating relationships of interest before and after the birth or over even more targeted intervals may provide a richer understanding of the interaction between key covariates and employment behavior.

Findings in Chapter 3 suggest there may be competition between maternal employment and well-baby care. However, the identification strategy used to estimate the effect of maternal employment on well-baby care is not ideal. Further examination of the relationship between compliance with well-baby recommendations and maternal employment is needed to confirm the results found in Chapter 3. If there does in fact seem to be competition between maternal employment and well-baby care, one might wonder about the relationships between employment and other health behaviors including adults' compliance with their own preventive care schedule. Timing and adequate preventive care may help to ward off more serious and costly future medical conditions and thus lower healthcare costs. Rising healthcare costs are a focal issue in current policy debates and a challenge to employers attempting to manage benefits costs.

Finally, one of the important barriers to empirically analyzing the relationships between family friendly workplace policies and practices and any behavior is the lack of detailed information about workplace policies in most large scale surveys. Indeed, the only policies I was able to consider in this dissertation were paid vacation and sick leave and

FMLA leave. Even then I had information about the availability of paid and sick leave but not the amount available or rules for accumulation and use. Short of having better questions in the large scale national surveys, researchers may be able to make use of the quality of questions available in smaller surveys such as the National Study of the Changing Workforce, which is still nationally representative and has richer information regarding workplace policies and practices.

Policy Implications

As stated in the introduction to this dissertation, in the U.S. there are few public policies aimed at reconciliation of work and family time and no universal entitlement to paid leave. This contrasts sharply with nearly all other developed countries. In the U.S. employer policies and practices determine the organization of work and non-work time with very little intervention from the government or organized labor. This institutional structure has lead to disparities across jobs and occupations in the availability of paid leaves and family friendly policies. Yet even among jobs which offer paid leave or in which workers are eligible for FMLA leave, Chapter 3 suggests the relationships between paid and unpaid leave and care-giving behavior may vary greatly across jobs. In short, in the U.S. there is substantial inequity in access to paid and unpaid leaves and may also be important differences in the terms and conditions of paid and unpaid leave policies among those who are covered.

Given the disparities in access to and characteristics of paid and unpaid leave policies, we might expect to see workers with a high demand for these benefits sort into jobs with the best paid leave policies. The birth of a child and associated acquisition of time intensive care giving responsibilities should increase the demand for these benefits

and, if mobility were costless, should lead to sorting. Yet job changing can be costly in terms of destruction of specific human capital, mobility costs and forfeiture of any accrued non-transferable benefits. A rational agent would only change jobs when the benefits of doing so outweigh these costs. Furthermore, a rational agent with perfect foresight would choose to pursue a sequence of jobs which maximized utility over her lifecycle. Thus a woman who knew she was going to have a child in the next five years should be less likely to take on a job with any sort of deferred compensation scheme or specific human capital investments if the job has a schedule that will not be workable after she has her child or if she intends to quit for other reasons. Or a woman who knew she was going to have multiple children and require repeated labor force absences should select into an occupation with less skill atrophy. Early sorting behavior need not contribute to differences in lifecycle earnings between mothers and childless women; it could help to reduce them.

The fact that cohort level childbearing expectations, and expectations of first birth timing in particular, were found to have a poor correspondence with actual cohort fertility suggests a poor correspondence at the individual level as well. If women cannot predict their future fertility with reasonable accuracy then the employment decisions they make may be optimal in the short run but suboptimal over the life cycle. Indeed, the fact that there are no observable differences in the characteristics of occupations chosen by childless women who expect to become mothers and those who do not only suggests women are not sorting in to lower wage jobs before having children on based on the expectations of becoming mothers. It suggests that they are not sorting prior to the birth at all. Certainly the results of Chapter 1 are far from definitive and there could be a large

amount of sorting that occurs within occupations. But these results do warrant further investigation of common assumptions about women's job changing behavior.

If in fact women do not seem to have enough information to accurately anticipate their fertility and sort efficiently, less diversity in working time policies and practices across jobs and a broader set of basic entitlements and policies regarding the combination of work and non-work time might help to alleviate some of the uncertainty women experience when attempting to plan childbearing and make career decisions. If there is excess mobility, more workable and stable employment relationships and childcare strategies should improve children's well-being, promote gender based pay equity and increase household incomes.

Findings in Chapter 3 have strong implications for child health and development, and more broadly management of public health. Public policies already provide widespread subsidies to reduce the cost of well-baby care and promote compliance with recommended care schedules. Yet compliance remains appallingly low. Among women with the longest hours, my findings indicate women with FMLA leave eligibility are substantially more likely to take their children to recommended visits. Furthermore, I find women with paid sick or vacation leave and those eligible for FMLA are more likely to schedule weekday rather than weekend doctors visits than those without paid and unpaid leave. However, women who indicate their paid sick leave "can be used to see the doctor" are less likely to schedule weekday appointments and, throughout the analysis, this response was often negatively related to receipt of care. One explanation for this finding is women answered the question "must you use your paid sick time to visit the doctor."

Based on tabulations in the NSCW (see Introduction Table I.1) Only 68 percent of mothers with children under age 5 have any paid time off to care for their own illness and only 45 have paid time off to care for a sick child. Of those who have paid time off for their own illness, 23 percent state they do not receive enough. Similarly, of those who have paid time off to care for a sick child, 17 percent state they do not receive enough. If paid sick leave is scarce, parents are unlikely to be willing to use it to take a healthy child to the doctor. Although "intermittent FMLA leave" (use of FMLA to obtain part of a day off or arrange a reduced schedule for a qualifying purpose) is permitted for FMLA eligible employees, paid sick and vacation days are often doled out by the day or half day. Furthermore, employers may require employees to use all banked sick and vacation time before using FMLA leave. Arguably this creates a disincentive to use because parents may wish to reserve their sick time for illnesses and their vacation time for vacations or unforeseen needs for time off. A separate entitlement to FMLA leave would resolve this disincentive. Finally, under the strictest interpretation of the law, FMLA does not extend to preventive care or minor illnesses, except as related to pregnancy or in proximity to the birth.

Although my findings for well-baby care use imply substantial non-compliance with recommended well-baby care, full compliance may not be an appropriate policy goal. Preventive care is often proposed as part of the solution to rising medical care costs (Hensrud 2000; Fries et al 1993). However, not all preventive care is cost-effective (improve health enough to justify their cost) and even those which are may result in a net increase in medical care costs (Russel 1993). For example, Tucker et al (1998) evaluate the costs and benefits of introducing universal vaccination for rotavirus (the most

common cause of severe diarrhea in children). Rotavirus vaccine costs $20 per dose and they estimate the cost of universal immunization would be $289 million and would prevent 1.08 million cases of diarrhea, 34,000 hospitalization, 95,000 emergency department visits and 227,000 doctors visits among children age 5 and younger. Assuming vaccination rates similar to those for DPT (diphtheria, pertussis and tetanus), The medical costs associated with rotavirus include increased doctor visits, emergency department visits, hospitalizations and medical costs associated with death. Societal costs of rotavirus include caregivers' loss of earnings and lifetime productivity loss due to deaths. Costs of the vaccine program include both administrative costs and the $20 cost per dose. In total, they estimate the program would result in a net reduction of $296 million in societal costs and a net gain of $107 million in medical costs.

There are few studies that estimate the cost-effectiveness of well-baby care or other preventive care visits, probably because anticipatory guidance and other less objective aims of care are not as easy to quantify as immunization and the incidence rate of unhealthy behaviors in the absence of anticipatory guidance is difficult to measure. Using the 1992 Pennsylvania Port Authority Transit strike as a source of identification, Evans and Lien (2005) attempt to provide estimates of the causal effect of prenatal care on pregnancy and infant outcomes (birth weight, gestation, maternal weight gain and smoking) among black inner-city women. The find missed visits early in pregnancy negatively affect some outcomes but late visits appear to be less influential. Hoekelman (1975) compares the gain in maternal knowledge, level of maternal satisfaction, degree of compliance and attainment of planned health supervision between infants who receive 3 and 6 well-baby visits in the first year of life and finds no significant differences in these

measures between the two groups. Gilbert et al (1984) conduct a similar study in Canada where they compare infants who were assigned to receive 10 well-baby visits over the first two years of life (the current recommended number in Ontario) and 5 well-baby visits. They find no differences in the incidence of illness or prevalence of undetected abnormalities between the two groups. However, babies in the 5 visit group received an average of 4.77 on-time visits. My estimates suggest American children receive 2.03 visits on average by age 12 months and 2.25 visits by age 18 months, including unscheduled visits. No study has compared outcomes for reduced care at that level.

Current and Future Public and Workplace Policy Trends

Issues involving working families and children continue to be at the forefront of policy discussions in the U.S. and other OECD countries. Yet other OECD countries have more policies currently in place and work-family issues receive more attention in current policy debates. Japan and Korea are especially concerned with the reconciliation of work and family life because of their extremely low fertility rates. In countries with higher fertility, concerns over female labor force participation tend to receive more attention than levels of fertility but both are important issues. The E.U., for example, has set a female labor force participation rate target of 60% in each member state by 2010 (OECD 2007).

European countries are currently debating individualization of parental leave benefits with the specific aim of promoting gender equity at home and in the labor force (OECD 2007). Since paid parental leaves are generally state financed in European countries, many countries grant a certain portion of maternity leave to mothers and additional amounts of leave are transferrable between parents but fathers have no separate

right to parental leave. Most Scandinavian countries have already adopted individualized benefits. Iceland, for example, has individualized rights to parental leave; mothers and fathers are each separately entitled to three months of parental leave and jointly entitled to an additional three months which may be divided in any way the couple chooses (Rostgaard 2002). If individualization reduces the differences in leave taking behavior between mothers and fathers it may reduce gender inequality in the labor force.

Scandinavian countries have the most generous family policy in the world and in order to finance those policies they also have some of the highest tax rates (OECD 2007). Among E.U. countries, the policy regime and fiscal perspective in the U.K. is probably the most similar to the U.S. Yet even in the U.K., all working mothers are entitled to job protected leave of up to 26 weeks and 60% are entitled to some form of maternity payment based on their work history (Hudson et al., 2004) and pay is replaced at 90% for the first six weeks (OECD 2007).

In 2003, the U.K. introduced "right to request" legislation which granted employees with young or disabled children the right to request "flexible working" (Department for Business Enterprise and Regulatory Reform 2008). Flexible working requests may include but are not limited to changes in hours of work, changes in times when required to work or working from home (Advisory, Conciliation and Arbitration Service 2007). When presented with a request, employers are required to consider it and either agree to the proposed work schedule changes or provide a business rationale for refusal. Employees have protection from reprisal or dismissal for filing a request, the right to appeal refusals, and in some cases the right to bring a refusal before a tribunal.

Although the U.S. has historically provided significantly less public support for the reconciliation of work and family time than most other developed countries, recent policy changes and current initiatives may begin to close this gap. For example, in 2002 California passed the first paid family leave law in the nation. The law went into effect in 2004 and provides up to 6 weeks of leave with 55 percent pay up to a maximum of $728 per week to both male and female employees who have a new child either by birth or adoption or need to care for a seriously ill family member (Milkman and Appelbaum 2004). These benefits are entirely employee financed through California's existing State Disability Insurance program (Milkman and Appelbaum 2004).

The Alfred P. Sloan Foundation has sponsored a National Initiative on Workplace Flexibility. The goals of this initiative is to make workplace flexibility "the standard of the American workplace" and the Sloan Foundation has sought to accomplish this goal by providing funding for projects at the national, state and local level which advance flexible work arrangements (Christensen 2004). The Workplace Flexibility 2010 policy initiative, which one of the projects funded by the Sloan Foundation, has set forth the ambitious goal of creating consensus based national policy solutions in the areas of flexible work arrangements, time off and career exit/reentry by the year 2010 (Workplace Flexibility 2010, 2004).

In the 2008 election, Democratic presidential candidate Barack Obama has laid out a platform which would introduce new policies and expand the FMLA to address work-family issues. He states he would work to enact an employer mandate that would require the provision of seven paid sick days per year. A similar proposal was previously introduced as "The Healthy Families Act" by Senator Edward Kennedy (D-Mass.) and

Representative Rosa DeLauro (D-Conn.) in the 108th, 109th and 110th Congresses but never made it to the floor (GovTrack.us 2007). Furthermore, Obama says he would support the expansion of FMLA, which currently covers businesses with 50 or more employees, to cover businesses with 25 or more and to extend coverage for more purposes including time parents choose to spend participating in their children's academic activities. (Obama'08 2008). No mention is made of providing pay during FMLA leave but Obama does propose federal funds would be allocated to assist states with the establishment of paid-leave systems, presumably similar to the California system.

Although unionization rates in the U.S. are generally quite low, the labor movement has taken up the issue of workplace flexibility and achieved some important benefits for their members. For example, in 1999 UAW negotiations with the Big Three automakers established the Alliance for Children and Working Families which included funding for training of child care providers, summer camp, after-school programs, and back-up child care (Lazarovici 2000). District 31 of the American Federation of State, County and Municipal Employees (AFSCME) negotiated 1 day of work at home per week for new parents with children less than one year old and hotel and members of Hotel and Restaurant Employees Local 2 in San Francisco negotiated a child and elder care fund and flexible paid-time-off policy in their 1994 contract (Lazarovici 2000).

Many private sector employers are choosing to provide their employees with policies that help to reconcile work and family roles as part of an attraction and retention strategy. However, those with the most generous policies disproportionately employ highly paid professionals. This tendency leads to disproportionate access to flexibility

throughout the labor market by pay grade. For example, companies who made Working Mother Magazine's 100 Best list for fifteen years or more were primarily large financial companies, including Bank of America and Citi, pharmaceuticals like Merck & Co. and Procter and Gamble and high tech corporations including IBM and Hewlett-Packard. Yet in 2005 IKEA, as large Swedish owned retail store, made a notable appearance on the list as one of the few companies in the retail industry to offer medical and dental coverage to all employees, including part time workers (Business Wire 2005).

Table C1 compares the family benefits provided in the 2007 Working Mother Magazine's 100 Best companies to the national availability of benefits as measured in the 2007 benefits survey of the Society for Human Resource Management members (SHRM). The membership of SHRM is disproportionately made up of human resource managers and executives from larger companies and thus the differences in Table C1, although striking, likely understate the true differences between benefits available in jobs at the100 Best and the average U.S. job.

Future advances in public and employer flexible working-time policies will depend on many factors, perhaps the most important of which is the strength of the economy. Flexibility can be costly to employers, employees and taxpayers. Even in Europe, where willingness to pay appears to be quite high, tension over the costs family friendly benefits impose upon employers is an important public concern and has lead to "flexicurity" initiative. Flexicurity is a policy strategy aimed at enhancing the flexibility of labor markets, work organizations and labor relations while ensuring employment and income security for workers (European Comission 2008). More directly, flexicurity would allow employers to more freely hire labor than under existing life-long

employment regimes in order to compete in changing global markets. The "security" component of flexicurity is the government's commitment to providing worker retraining and income support to ensure employment and income security in the face of lessoned job security. Flexicurity is a highly contested issue in the E.U. and in particular between employee and employer organizations. But, since many family benefits are delivered through public entitlements and funded with public dollars rather than through employment contracts, reduced job security may not have much effect on a new mother or father's ability to take leave and arrange for on-going care. The U.S., on the other hand, faces many of the same economic pressures but has a much less developed social safety net. Furthermore, unlike in Europe, family benefits are almost entirely determined by one's current employment contract and eligibility for FMLA leave is contingent upon having worked at least one year full-time with one's current employer. In this regime, increased job insecurity may lead employees to experience substantial changes in working-time arrangements and access to flexible policies as they transition through jobs and more workers may find themselves in the periphery of the labor market without access to FMLA and other benefits contingent upon continuous, full-time job tenure. This possibility, along with the marked inequalities under the current employer provided benefit regime, point to the need for public entitlement to flexible working-time arrangements.

Furthermore, while the focus of this dissertation has been the need for work and family time reconciliation among new parents and mothers in particular, parents are not the only persons in need of flexibility. As the baby boom generation ages a large proportion of the working population will take on elder-care duties that will need to be

reconciled with their work schedules. Also, the baby boomers themselves may seek a more flexible transition into retirement. As people live longer, the pursuit of portfolio careers (careers which include various jobs and work arrangements to suit each stage of the lifecycle) may increase (Platman 2004). Indeed there is some suggestive evidence to indicate paid work may actually increase longevity. In a study of cohorts affected Social Security benefit reform Snyder and Evans (2006) find cohorts who received lower benefit payments had significantly lower mortality rates. One explanation for this finding would be these cohorts had to wait longer to retire and work may have actually improved longevity.

Future research can help to inform work and family reconciliation policies through better understanding of the choices and challenges women face when making employment and childbearing decisions over the lifecycle. A key goal of this research should be to further investigate the role of workplace policies and practices in shaping those decisions. Furthermore, although much of the existing literature and this dissertation focused exclusively on women and childbearing, the influence and importance of flexible working-time policies and practices extends to fathers and other care-givers as well. Since the dual earner family has become the standard and since demographic trends will lead many American workers to take on elder-care responsibilities in the future, new studies of the effects of workplace and public policies on fathers and other care-givers are needed.

In conclusion, there is vast need for better reconciliation of work and family time in the U.S. and to date public policy intervention is minimal. The conflict between work and family time may contribute to gender inequities in the labor market and negatively

affect the health and development of young children. The results of this dissertation suggest access to paid leave may help women to maintain job matches during childbearing years and improve health outcomes for young children by encouraging mothers to take their children to well-baby care. The findings invite further investigation of the extent to which women are able to optimally plan their childbearing and careers over the lifecycle and further analyses of flexible working-time policies and practices and their effects on fathers and other care-givers as well as mothers.

Table C1 Comparison of Flexible Working-Time Policies at the Working Mother Magazine "100 Best Companies" and the Average Company[1]

	100 Best	Average
Flextime	100%	58%
Telecommuting	100%	33%
Child-Care Resource and Referral	98%	74%
Job-Sharing	98%	20%
Lactation Program/ Designated Area	98%	26%
Compressed Work Week	97%	38%
Elder-Care Resource and Referral	97%	22%
Prenatal Program	97%	70%
Adoption Assistance	91%	20%
Stress-Reduction Program	88%	15%
Paid Adoption Leave	75%	20%
Parental Leave Beyond FMLA	73%	27%
Paid Paternity Leave	69%	17%
On-Site Child-Care	53%	6%
Health-Care Insurance for Part-Time Workers	99%	41%

Source: Adapted from Working Mother Magazine "National Snapshot: The Best vs. the Rest." 1 July 2008. <http://www.workingmother.com/web?service=vpage/1046>

[1] Average company statistics are based on surveys conducted by the Society for Human Resource Management.

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