

Family Proximity, Childcare, and Women's Labor Force Attachment*

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Abstract

We show that close geographical proximity to mothers or mothers-in-law has a substantial positive effect on the labor supply of married women with young children. Using two large datasets, the National Survey of Families and Households and the public use files of the U.S. Census, we find that the predicted probability of employment and labor force participation is 4-10 percentage points higher for married women with young children living in close proximity to their mothers and/or their mothers-in-law compared with those living further away. We argue that the availability of childcare is the most likely mechanism. We focus on proximity and the availability of childcare rather than on actual or predicted hours of childcare for both theoretical and econometric reasons. The theoretical issues arise because the availability of a mother or mother-in-law who can respond to irregular or unanticipated childcare needs constitutes a kind of "insurance" whose importance may be far greater than the actual number childcare hours provided. The econometric issue is endogeneity and arises because childcare decisions and labor supply decisions are often made simultaneously. Because proximity and labor supply decisions are less likely to be simultaneous, the endogeneity problem is mitigated by focusing on proximity and the availability of childcare rather than on childcare hours.

The effects of close proximity on labor supply are robust. Although we are unable to fully control for potential endogeneity, the data provide clear and convincing circumstantial evidence that proximity has a substantial effect on the labor force attachment of married women with young children, and that the underlying mechanism is the availability of childcare to meet irregular or unanticipated needs.

1. Introduction

In this paper we show that close geographical proximity to mothers or mothers-in-law has a substantial positive effect on the labor supply of married women with young children.¹ Using two large datasets, the National Survey of Families and Households (NSFH) and the public use files of the U.S. Census, we find that the predicted probability of employment and labor force participation is 4-10 percentage points higher for married women with young children living within 25 miles of their mothers and/or their mothers-in-law compared with those living further away. Although we do not explicitly model the labor force decision, our empirical results provide clear and convincing circumstantial evidence that proximity to mothers or mothers-in-law has a substantial positive effect on the labor force participation of married women with young children and that the availability of childcare is the mechanism through which proximity and labor force status are related. Proximity has no discernable effect on the labor force behavior of married women without childcare needs: those without children and those with children over 12 years of age. Although unmarried women with children are more likely than married women with children to benefit from work-related childcare by their mothers, we do not find a relationship between proximity and labor force attachment of unmarried women. This lack of effect is consistent with a more inelastic labor supply of unmarried women with children, making them less responsive to the availability of childcare.²

We focus on proximity and the availability of childcare rather than actual or predicted childcare hours for both theoretical and econometric reasons. The theoretical issue arises because the availability of a mother or mother-in-law who can respond to irregular or unanticipated childcare needs constitutes a kind of "insurance" the importance of which may be far greater than the number childcare hours would suggest. Market based childcare may be a strong substitute for family childcare when needs are regular and anticipated. But market based childcare is less able to cover irregular or unanticipated childcare needs. Hence, the availability of someone to pick up a sick child from school, take a child to after school sports practice, or care for the children when

¹ We use "mothers" to refer to the older generation, "women" to refer to the middle generation (i.e., the adult daughters of the mothers) and "children" to refer to the youngest generation (i.e., grandchildren of the mothers). By "young children" we mean children 12 and under.

away on a business trip may affect mothers' labor market choices, regardless of whether such childcare needs ever arise. Previous work, which focuses on actual or predicted childcare, ignores this insurance aspect of childcare needs.

The econometric issue is endogeneity and arises because childcare decisions and labor supply decisions are often made simultaneously. Although concerns remain about endogeneity and selection with proximity and labor supply (e.g., both decisions may be influenced by human capital investment, fertility and the marriage market) these concerns are arguably less serious than those that aroused by the childcare-labor supply relationship. Indeed, proximity to mothers is often used as an instrument for family-provided childcare (e.g., Dimova and Wolff (2008), Dimova and Wolff (forthcoming), Zamarro (2009)).

The effect of proximity on labor force behavior has only recently garnered attention in the economic literature.³ Konrad et al. (2002) model the proximity of adult children to their parents as the outcome of a noncooperative game, but they do not consider childcare or labor supply.⁴ Rainer and Siedler (2009) develop and estimate a similar model; they find that adult children without siblings are more likely to remain in their parents' locations and have worse labor market outcomes than those with siblings. They do not investigate the effect of the availability or receipt of childcare on women's labor supply.⁵

² Kimmel (1998) finds that the labor supply of unmarried mothers is less responsive to childcare prices than the labor supply of married mothers.

³ Klerman and Leibowitz (1990) find a non-significant effect of the availability of relative care on the probability of returning to work within 3 months (and also within 24 months) following the birth of a child. Their analyses, however, focus on coresident grandmothers rather than grandmothers in close proximity. Declining rates of coresidence (Costa, 1999; Ruggles, 2007) and the likelihood that coresident grandmothers may themselves need care (Compton and Pollak, 2009) suggest that the focus on coresidence rather than proximity fails to capture the roles of mothers and mothers-in-law. Several recent theoretical papers consider the effect of intergenerational transfers of time on the labor force behavior of daughters. Pezzin and Schone (1999) develop a model in which the labor force participation of daughters and the provision of long-term care to mothers are jointly determined; they focus on the care of frail elderly mothers and do not consider childcare.

⁴ In their model, the eldest sibling has the first mover advantage and moves away from the parents to shift the burden of providing long-term care for elderly parents to younger siblings.

⁵ Cardia and Ng (2003) calibrate an overlapping generations model that allows intergenerational transfers of both time and money; they show that time transfers involving childcare have important positive effects on the labor supply of the middle generation. Belan, Messe and Wolff (2009) develop and analyze an overlapping generations model with intergenerational transfers of care and show that changes in the mandatory retirement age affect the employment rates of both generations.

A few recent studies consider the effect of family childcare on the labor force status of women in Europe. Using SHARE data, Dimova and Wolff (forthcoming) use a simultaneous recursive model to estimate the effect of both time and money transfers from mothers on the labor force participation of their daughters in 10 European countries.⁶ They include distance between mothers and daughters as well as mothers' demographic characteristics in their childcare equation. They find that regular (weekly or daily) transfers of childcare have a small positive effect on daughters' labor force participation, but do not affect whether their labor force participation is full-time or part-time. Using the same data and a recursive simultaneous equations model, Zamarro (2009) considers the country-specific impact of regular childcare transfers on the labor supply of both mothers and daughters. Her results suggest that regular childcare transfers affect the daughters' labor supply for Greece and the Netherlands, but are insignificant for the other 8 countries. Finally, Dimova and Wolff (2008) find that for a specific immigrant population in France, childcare by mothers has a positive and statistically significant effect on the labor supply of their daughters. These analyses, however, may underestimate the effect of childcare considerations for two reasons. First, they focus on regular childcare, rather than on the availability of childcare to meet irregular or unanticipated needs. Second, these studies consider only childcare transfers from mothers to daughters, without considering mothers-in-law. We show that the inclusion of mothers-in-law proximity is a key factor in the empirical results.

Our finding that family proximity increases the labor force attachment and employment of married women with young children has implications for retirement policy. Increases in the retirement age which reduce the ability of the older generation to provide childcare may reduce the labor force attachment of daughters in the younger generation. Discussing recent trends in labor force participation in the U.S., Mosisa and Hipple (2006) note that while participation rates have decreased in the past decade for women aged 25 to 54, they have increased for women aged 55 and older. The behavior of these cohorts is usually analyzed separately, with little or no recognition that geographical proximity and childcare may provide a link between them.

⁶ SHARE is the Survey of Health, Ageing and Retirement in Europe, a large multi-country panel covering more than 45,000 individuals over the age of 50.

This paper proceeds as follows. Section two describes the NSFH and uses it to analyze the relationship between proximity and women's labor force attachment. Results from probit regressions on the probability of being employed as well as Tobit and selection correction models on hours of work support the hypothesis that proximity to mothers or mothers-in-law has a substantial positive effect on the labor force attachment of married women with young children, but not on that of any other demographic group. For brevity, we present only the probit regressions. In section three we turn to census data. Because the census does not ask about proximity to mothers or mothers-in-law, as a proxy we investigate the effect of living in one's birth state. We present results for the full sample of women and for a sample of military wives (i.e., civilian women married to men in the U.S. military). The military wives provide an endogeneity control because their locations are determined by their husbands' postings. The results reinforce the conclusion that proximity to mothers or mothers-in-law increases the labor force attachment of married women with young children. In section four we summarize our findings and conclude.

2. NSFH: Proximity, Transfers, and Labor Force Attachment

We use data from the first two waves of the National Survey of Families and Households (NSFH) described in Sweet and Bumpass (1996). The first wave (1987-1988) consisted of 13,007 households, and oversampled blacks, Puerto Ricans, Mexican Americans, single-parent families, families with stepchildren, cohabiting couples, and recently married couples. The second wave (1992-1994) was a five-year follow-up. Using the first and second waves of the NSFH enables us to control for recent migration (i.e., living in a different location in the second wave than in the first.).⁷ The primary respondent was randomly chosen from the adults in the household, but both the respondent and the respondent's spouse or partner were asked to complete the entire survey. The data includes information on distance (in miles), health, marital status, and

⁷ Of course adult daughters can move away and their mothers can follow, or vice versa. If migration took place prior to the first wave of NSFH, we cannot distinguish this group from those who never moved away. In the third wave the sample was reduced to include only households with children. Because this sample restriction limits our ability to compare across groups, we use only the first and second waves.

transfers given and received by both the respondent's mother and mother-in-law.⁸ We limit our sample to those women (respondent or spouse) who are aged 25 to 60 and whose mothers (and mothers-in-law where applicable) are Alive and Living in the United States (ALUS). Thus, we exclude individuals whose mothers or mothers-in-law are deceased or live outside the U.S. Although the data are fifteen years old, the percentages of individuals living in their birth state (our proxy for proximity when using census data) has remained fairly constant over the past three decades. For our analysis, a major advantage of the NSFH is that it provides information on proximity not only to mothers but also to mothers-in-law. Although few data sets include information about the proximity of both mothers and mothers-in-law, our results suggest a high scientific payoff to collecting this information about family proximity.

2.1. Description

Most Americans live very close to their mothers. Using data from the NSFH, Compton and Pollak (2009) report that the median distance between married women and their mothers is 20 miles, with one-quarter living within 5 miles of their mother. Unmarried women live even closer: the median distance is 8 miles when coresidents are included in the distance calculation and 15 miles when they are excluded.⁹ We define 'close proximity' or 'living near' as a distance of twenty-five miles or less.¹⁰ Close proximity is strongly correlated with education: 46 percent of low power couples (couples in which neither spouse has a college degree) live within 25 miles of both mothers, whereas only 17 percent of power couples (couples in which both spouses have college degrees) live within 25 miles of both mothers.

⁸ We use the information collected from the respondent; if this information is missing, we use the spouse's record.

⁹ In the NSFH analysis, unmarried women include those who are never married, divorced, widowed or separated. We include cohabitators with married individuals.

¹⁰ The results of the analyses are very similar if cutoffs of 20 miles or 30 miles are used. We include couples who coreside with either her mother or his mother in the 'close' category. Although this group are qualitatively different from those not coresiding (see Compton and Pollak, 2009), they are a small proportion of the population (2.4 percent of the sample) and sample sizes are too small to justify a separate category. We separate unmarried women who coreside with their mothers because the sample size is larger (22 percent of the sample). If we exclude coresidents from the sample of married women, the results are indistinguishable.

The NSFH provides information on time transfers between individuals and their mothers and mothers-in-law. Respondents were asked whether, in the previous month, they received or provided general help (shopping, errands, transportation, housework, yard work, car repairs and other help around the house) to or from their parents or parents-in-law. Those with children 12 and under were asked whether they received childcare from their parents or parents-in-law while working and/or childcare at other times (table 1). The likelihood of time transfers is strongly associated with distance. Of married women with children living within 25 miles of their mothers, 24-27 percent received work-related childcare from their mothers; of married women with children living within 25 miles of their mothers-in-law, 18-19 percent received work-related childcare from their mothers-in-law. Unmarried women were slightly more likely to receive transfers of work-related childcare from her mother: 28 percent of unmarried women in close proximity to their mothers received work-related childcare in the past month. Those living further than 25 miles were much less likely to receive childcare: only 4.2 percent (2.7 percent) of married women with children who did not live close to either mother received work-related childcare from her (his) mother.

Labor force participation is also correlated with proximity. Table 2 shows the labor force attachment of married and unmarried women by proximity to their mothers and mothers-in-law. For unmarried women (with and without children), there is a positive relationship between distance category (coresidence, 25 miles or less, more than 25 miles) and full-time work, but an inverted U-shaped relationship between distance category and out of the workforce (the sample size here is a concern, however). For married women, there are four categories of proximity: a couple can live close to neither mother, to his mother only, to her mother only, or to both mothers. The raw data show the importance of including both mothers and mothers-in-law when considering family proximity. If we exclude information on mothers-in-law, we are in effect combining the first two categories into a single category ("not in close proximity to her mother") and the last two categories into a single category ("in close proximity to her mother"). Yet, married women, especially those with children, who live near only their mothers-in-law have a much different pattern of labor force attachment than married women who do not live near either mother. For example, restricting our attention to married women with

young children, we find a substantially higher percentage working full-time when living near at least one mother (40 to 45 percent) than living near neither mother (33 percent). By separating proximity into four categories, we are able to estimate the effect of proximity more precisely.

Demographic factors correlated with close proximity are typically factors correlated with lower labor force attachment. Means and standard deviations for the married women's sample are included in Appendix 1. Compared with women who do not live within 25 miles of either mother or mother-in-law, those that live close to both live in areas of higher unemployment, are younger, are more likely to have young children, are less educated, have less educated mothers and spouses, are more likely to be black or Hispanic, and are less likely to live in an MSA. Yet despite these correlates of close proximity, women living in close proximity to their mothers or mothers-in-law are more likely to be working and work more hours. In the next sub-section, we show that the proximity effect observed in the raw data holds under regression analysis.

2.2. Analysis: Proximity and Labor Force Attachment

Using the NSFH data, we estimate the effect of close proximity to mothers and/or mothers-in-law on the labor force behavior of adult daughters and daughters-in-law. We consider one dichotomous outcome (whether the daughter works or not) and one continuous outcome (usual weekly hours). For married women, we focus on the effect of three categorical variables: close proximity (i.e., within 25 miles) of mothers only, of mothers-in-law only, and of both mothers and mothers-in-law. For unmarried women, we consider the effect of coresidence and of close proximity to mothers. To simplify the interpretation, we limit the sample to those with mothers (and mothers-in-law for the married sample) ALUS.¹¹ We include a full set of control variables in all regressions: age, age squared, whether husband works and his hours of work, whether self or husband currently has medical problems, race (black, Hispanic, white (omitted)), education categories (both spouses have college degrees, only she has a college degree, only he has a college degree, neither has a college degree (omitted)), presence of children (children

¹¹ By excluding those whose mothers are not ALUS, our sample under-represents migrants to the U.S. and those whose mothers die young.

12 and under, children older than 12 in the household, children outside the household, no children (omitted)), whether mother has a college degree, region (Midwest, South, West, Northeast (omitted)), average commuting time in the county (to account for place-to-place differences in the amount of time it takes to travel), whether residing in an MSA, 1990 county level unemployment rate, whether coreside with mother or mother-in-law, age categories of mother(s) (less than 60, 60-69, 70 and over (omitted)), whether mother(s) are in poor health, whether siblings live within 25 miles, and whether the respondent lived in a different city in the first wave of the data.

We begin by estimating the effect of observed transfers of childcare on the labor force behavior of adult daughters, replicating the type of analysis performed on the European data by Dimova and Wolf (2008, forthcoming) and by Zamarro (2009). The sample is restricted to women with young children whose mothers are ALUS.¹² We estimate the impact of both work-related and non-work related childcare, using the following bivariate probit model:

$$\begin{aligned} Y_{1i}^* &= X_{1i}\beta_1 + Y_{2i}\beta_2 + U_{1i} \\ Y_{2i}^* &= Z_{2i}\gamma_2 + U_{2i} \\ Y_{ki} &= 1 \text{ if } Y_{ki}^* > 0 \\ Y_{ki} &= 0 \text{ if } Y_{ki}^* \leq 0 \end{aligned} \quad , k = 1, 2$$

where Y_{1i} is an observed dichotomous variable equal to 1 if the daughter works positive hours, (i.e., if the latent variable $Y_{1i}^* > 0$); Y_{2i} is an observed dichotomous variable equal to 1 if the daughter receives childcare (either work related or non-work related) from her mother (i.e., if the latent variable $Y_{2i}^* > 0$). The vectors X_{1i} and Z_{2i} are exogenous variables with $Z_{2i} \subset X_{1i}$, and error terms are assumed to be iid normal. The regression variables included in Z_{2i} but not in X_{1i} are indicators for close proximity, mother's health and marital status, siblings in close proximity and the interaction of proximity and siblings.

¹² Women coresiding with their mothers are excluded from the childcare regression samples as transfers between coresidents are not included in the data.

These variables are assumed to affect the likelihood of childcare, but not labor market behavior directly.

Table 3 presents the relevant maximum likelihood estimates of the model. We find that the receipt of childcare from one's mother is not a statistically significant determinant of the labor force behavior of adult daughters in any specification.¹³ (We do find that proximity is a strong determinant of childcare and that women with siblings nearby are less likely to receive childcare transfers from their mothers.)

We next investigate the possibility that the proximity of mothers or mothers-in-law has a direct effect on the labor force behavior of adult daughters. We find that proximity has a strong direct effect, and we interpret those results as indicating that the potential availability of mothers or mothers-in-law to provide irregular and unanticipated childcare is the primary mechanism through which proximity affects adult daughters' labor force behavior. Table 4 shows the results from probit regressions on employment and Tobit regressions on usual weekly hours for married and unmarried women.¹⁴ In columns (1) and (3) we estimate the effect of living near own mother, ignoring the location of mother-in-law. We find no significant effect of proximity in these regressions, when the comparison group contains both those living near neither mother and those living near their mother-in-law only. When mother-in-law information is added in columns (2) and (4), the comparison group becomes those living away from both mothers and we now see a statistically significant and relatively strong effect of proximity to mothers-in-law and to both mothers. For unmarried women with young children, we find no effect of proximity, and only a weak effect of coresidence, on the work force attachment. We replicated these regressions for married and unmarried men with young children and found no significant effect of close proximity for the men.

In table 5 we consider different subsamples of married women to determine the subgroups for which the relationship between proximity and labor supply is strongest.¹⁵ Column (1) replicates the results from table 4. In columns (2) – (4), we report the

¹³ We repeated the analysis for childcare transfers from mothers-in-law, with similar results. The lack of effect evident in these regressions may be due to the quality of the data (childcare is a dichotomous variable and is retrospective for the previous month), but we are reluctant to blame the data.

¹⁴ In all regressions, coefficients are presented with standard errors in parentheses. Marginal effects on the predicted probability are shown in italics when the coefficient has a p-value less than 0.2.

regressions separately by presence of child categories: column (2) includes only those with young children; column (3) includes only mothers without young children; and column (4) includes only non-mothers.¹⁶ Proximity is only significant for those with young children. The effect is large and statistically significant: close proximity to mother-in-law or to both mothers increases the predicted probability of employment by 10 percentage points. The coefficient on close proximity to only her mother is positive, but insignificant.

In columns (5) and (6) we limit the sample to those whose mothers or mothers-in-law are in poor health and thus are more likely to need care themselves and less likely to provide care for their grandchildren. We find no effect of proximity on the labor force attachment of these women. The absence of an effect on proximity on the labor supply of women whose mothers or mothers-in-law are in poor health is further evidence that the availability of child care is probably the mechanism through which proximity affects labor supply.¹⁷

Proximity to one's mother-in-law has a similar effect to proximity to both mothers; proximity to only one's own mother has a smaller and statistically insignificant effect. This result is unexpected, as women are more likely to receive childcare transfers from their mothers than from their mothers-in-law. The effect of nearby siblings suggests a possible explanation: strategic behavior by mothers and/or mothers-in-law in their willingness to provide childcare. Consider first the mother-in-law. In the first column we find a positive effect of living close to one's mother-in-law but a negative effect of close proximity to husband's siblings. The negative effect of nearby siblings is also seen for the subgroup with young children, although these coefficients just fail to meet standard levels of significance. Because mothers-in-law are more likely to provide childcare for the children of their own daughters than for those of their daughters-in-law, the presence

¹⁵ We found similar results when we included interaction terms between proximity and children or health of mother in the regression.

¹⁶ The results are qualitatively the same if we consider those with children under the age of 6. We chose the 12 year old cut-off for two reasons. First, this cut-off corresponds to the childcare transfer questions – only those with children 12 and under were asked about childcare. Second, our hypothesis is that the availability of family to aid with unanticipated childcare needs is important for labor market decisions. This type of childcare may be especially important when children are school-age.

¹⁷ We also infer from this that the availability of childcare is a more important determinant of women's labor supply than the need to provide long-term care for disabled elderly parents.

of his siblings may reduce mother-in-law willingness to provide childcare. On the other hand, if there are no siblings in close proximity, mothers-in-law may have a stronger incentive to provide childcare transfers than mothers. Because altruistic motives for providing eldercare are presumably weaker among daughters-in-law than daughters, mothers-in-law may be more willing to provide childcare to daughters-in-law in the hope of increasing the probability of receiving eldercare in the future. Similar strategic behavior may explain the insignificant effect of close proximity to only her mother. Compared to couples residing in close proximity to both mothers, those residing in close proximity to only her mother may be more likely to move away in the future, thus reducing the incentives of mothers to provide childcare. The close proximity of a woman's own siblings has a negative but non-significant effect on the labor force attachment for the sample with young children, and a positive effect on the labor force attachment of women without children. These results suggest a relationship between labor force attachment and sibling competition in care transfers, but we do not have sufficient data to investigate this possibility more thoroughly.

The results on hours of work from Tobit regressions and models using a Heckman correction for sample selection indicate that the effect of proximity is primarily on the extensive margin (i.e., whether the woman works or not) rather than on the intensive margin (i.e., the number of hours worked). The results (not shown) are consistent with the probit results in that the proximity effect is found only for married women with young children.

Overall, our findings indicate that proximity to mothers-in-law or to both mothers and mothers-in-law has a large positive effect on the labor force attachment of married women with young children. Because the results are significant only for married women with children, and only when mothers are not in poor health, we argue that the primary mechanism through which proximity affects labor force attachment is the availability of childcare.

Informal job-search networks are unlikely to explain the positive relationship between proximity and labor force attachment.¹⁸ Women who live close to their mothers or mothers-in-law are likely to live close to other family members and to friends, and thus

¹⁸ Migration effects are also unlikely to explain the relationship; we discuss migration in section 3.2.

may belong to larger informal networks that are important for job search. We discount this possibility because we find an effect of proximity only for married women with young children; we do not find it for me or for unmarried women or for married women without young children. Hence, the informal job search network explanation is not supported in the data.

Two caveats are required. The first is sample size: perhaps the insignificant results for married women with older children and married women with no children are due to the small sub-samples. To address this concern, in section 3 we use Census data to analyze the relationship between the labor force attachment of women with young children and their proximity to mothers and mothers-in-law. The second is endogeneity. Endogeneity problems would arise if women who have preferences for both children and labor force attachment are more likely to reside near family, compared with women who have preferences for one or the other. Endogeneity problems would also arise if marriage market choices reflect underlying preferences for work/children combinations. Unfortunately, we have not found a convincing way to deal with these endogeneity problems.¹⁹ Nevertheless, our empirical results from the NSFH provide strong circumstantial evidence that proximity affects the labor force attachment of married women with young children, and that the mechanism is the availability of childcare to meet irregular or unanticipated needs. Census data provide additional evidence.

3. Census Data: Birth State and Labor Force Attachment of Adult Women and Military Wives

¹⁹ There is no econometric procedure to allow for a two-step IV approach with a multinomial endogenous variable (near her mother only, near his mother only, near both). We attempted a bivariate probit model as outlined above, but defining Y_{2i} as an observed dichotomous variable equal to 1 if the daughter lives in close proximity to his mother or to her mother (i.e., if the latent variable $Y_{2i}^* > 0$). The instruments included were mother's marital status and indicators for only and eldest child. The results are not presented for two reasons. First, the results are insignificant and sensitive to control inclusion, which may reflect the use of a binary proximity category that ignores the location of mothers-in-law. Second, although mother's marital status and birth order are strong predictors of proximity in previous work (e.g., Konrad et al. (2002), Rainer and Siedler (2009), Compton and Pollak (2009)), we found them to be borderline weak instruments, especially in sub-samples.

Although the U.S. Census does not ask respondents the distance to their mothers, it does ask whether the respondent resides in his or her birth state. We use this variable as a proxy for close proximity. Data from the Panel Survey of Income Dynamics (PSID) provides some support for this proxy.²⁰ The PSID reports grouped distance to mother in one year (1988) and the “State where the Head (Spouse) grew up.”²¹ Although the state where one grows up need not coincide with birth state, there is a strong link between proximity and residing in one's childhood state: in the PSID, more than 90 percent of heads currently living in their childhood state are living in the same state as their mothers; over half live within 10 miles, and less than 15 percent live more than 100 miles away. On the other hand, of those heads not living in their childhood state, only 27 percent currently live in the same state as their mothers; 16 percent live within 10 miles, and more than 70 percent live more than 100 miles away.

Using census data we estimate the effect of birth state residence on the probability of employment and labor force participation as well as on usual weekly hours. More specifically, using the 2000 public use microdata files of the 2000 U.S. Census, we construct a dataset that includes all women aged 25-45 who were born in the U.S. (Ruggles et al., 2009). For couples, we define three mutually exclusive indicator variables: (1) whether the couple lives in the birth state of both spouses; (2) whether the couple lives in only her birth state and (3) whether the couple lives in only his birth state. To control for migration effects, we include a dummy variable for whether the woman was in the same state five years previously. We also include controls for the geographic size of the current state; we do this because those living in large birth states (e.g., Texas, California) may well have moved within the state and, hence, living in a large birth state is likely to be a weaker proxy for proximity to mother than living in a small birth state. In contrast, those living in small birth states (e.g., Rhode Island, Delaware), even if they have moved within the state, are more likely to live in close proximity to mother. Because the census provides no information on mothers who do not reside with their adult children, we limit the sample to those aged 25-45 (in the NSFH analysis we used

²⁰ The NSFH does not include state of birth.

²¹ The PSID did not ask state of birth until 1993, and then only to new heads or spouses.

those aged 25-60) to increase the likelihood that the mothers of those in our census sample are still alive.

We also use census data to construct a large sample of military wives – civilian women with husbands serving in the U.S. military.²² The sample includes 14,833 married women, of whom 10.2% live in only her birth state, 5.1% live in only his birthstate, and 8.7% live in the birth state of both spouses. Since the location of military personnel is primarily exogenous, we include this sample to control for endogeneity.²³

3.1. Interaction of Birth State and Young Children

We consider the impact of birth state residence for three samples – married women, military wives, and never-married women.²⁴ Table 6 presents summary statistics for the samples. The data indicate that, for married women with young children, there is an increasing attachment to the work force as we move from residing in the birth state of neither spouse to residing in the birth state of both spouses. We find no discernable pattern for married women with only older children or no children. We find a similar pattern for military wives with young children, although the patterns for military wives with older or no children are less clear. For never married women with young children, we find a negative relationship between birth state residence and labor force attachment.

In table 7 we present the results of regressions similar to those we used to analyze the NSFH data.²⁵ That is, we estimate the effect of birth state residence (our proxy for family proximity) on labor force attachment – whether the woman is currently in the labor force and whether she is currently employed.²⁶ For married women, we find a small negative effect of birth state residence for women with no young children, but a

²² Excluded from the sample are those for whom spouse is absent. In particular, this excludes those military wives of husbands serving overseas. To increase the size of this sample, we have increased the age category to 18-45. We find similar results when we omit the 18-23 age category.

²³ The probability that they live near only her mother is twice the probability of living near his mother, presumably because the wife's location is less exogenous than her husband's. In particular, if the wife met her husband, the couple is more likely to live near her mother than to his mother.

²⁴ In the NSFH sample we included all unmarried women with controls for divorced, separated and widowed. With the large sample size available in the IPUMS data, we are able to consider those previously married and those never married. The results for those previously married are more difficult to interpret since the women may still reside near their mothers-in-law and receive childcare from them.

²⁵ Due to computing demand, a random 10 percent sample was drawn for the regressions.

positive effect for those with young children. Results for the military sample also indicate a positive effect of birth state residence for those with young children, although the significance levels are relatively low.²⁷ Proximity has a small, negative effect on the labor force attachment of never married women, and this is not significantly offset for those with young children. The marginal effects are smaller here than in the NSFH sample but the effect remains substantial: birth state residence increases the probability of labor force participation and employment of married women with young children by 2.6 – 3.9 percentage points. In table 8, we expand the birth state categories to account for residence in his and her birth state separately. Results for the full sample of married women are consistent – a small, negative effect of living in the birth state of one or both spouses for those without young children, but a strong positive effect of living in the birth state of either or both spouses for those with young children.

The results from the military sample are weaker: the interaction between children and birth state residence is positive and significant only for those residing in the birth state of both spouses. We expect a weaker response in the military sample for two reasons. First, birth state residence is a weaker proxy for family proximity when the husband is in the military because military personnel assigned to their birth states are likely to be further from their mothers and mothers-in-law than civilians who live in their birth states. Second, the strategic motivation for mothers and mothers-in-law to provide childcare in anticipation of reciprocity when they are elderly and disabled is reduced because daughters and daughters-in-law are likely to move when their husbands are transferred to a different location.

3.2. Birth State and Migration

Although the "tied mover" hypothesis described by Mincer (1978), Lichter (1983) and Greenwood (1985) does not explain our results, our results shed some light on how to disentangle proximity effects and tied mover effects. The tied mover hypothesis postulates that the costs of migration are higher if both spouses are attached to the labor

²⁶ Regression results from Tobit and Heckman corrected models on usual weekly hours again suggest that the impact of proximity is on the extensive margin. The results of these regressions are not presented but are consistent with the probit results.

force, and concludes that single-earner couples are more likely to migrate than two-earner couples. The tied mover hypothesis implies that married women who migrate will have less labor force attachment in the short run than married women who do not migrate. Five points deserve attention. First, the tied mover hypothesis, as its name suggests, applies only to those who migrate as couples, but our analysis focuses on the proximity of spouses to his mother or her mother, regardless of whether they moved as unmarried individuals or as a couple.^{28, 29} Second, we find a positive effect of proximity only for married women with young children, while the tied mover effect applies to all secondary earners who migrated as part of a married couple. Third, we include controls for recent migration in all regressions. Although this does not capture long-run effects of migration, a number of studies indicate that the disruptions to wives' labor force participation are typically short-lived (e.g., Clark and Withers (2002), LeClere and McLaughlin (1997), Marr and Millerd (1988) Spitze (1984)). Fourth, for married women with young children, we find a positive effect of close proximity to mothers-in-law as well as to mothers. If women living near their mothers-in-law are more likely to be tied migrants, compared to those living near their mothers, the tied mover hypothesis would predict a negative effect of close proximity to mothers-in-law. Finally, using census data, we find that for married women with young children, the effect of moving back to one's birth state has a less negative effect on labor force participation than moving elsewhere.

In table 9 we show the employment and labor force attachment rates for migrants and non-migrants. We define migrants as those who were living in a different state five years earlier.³⁰ For the married women with young children, non-migrants have higher labor force attachment rates and higher employment rates than migrants, which is consistent with the tied-mover hypothesis. Within the group of migrants, however, the

²⁷ For the labor force and employment participation probits, the coefficients on the interaction term are significant at the 89% and 78% confidence levels, respectively.

²⁸ Much migration is by never married men and women. The 2001 Current Population Survey data show that while never married individuals comprise 28% of the population over the age of 15, 40% of inter-county migrants and 41% of inter-state migrants are never married. (calculations by authors from the 2001 Current Population Survey data found

<http://www.census.gov/population/www/socdemo/migrate/cps2001.html>)

²⁹ The migration of unmarried individuals, especially unmarried women, is driven by both marriage market and labor market considerations. For interesting discussions, see Edlund (2005) and Gautier, Svarer and Teulings (2010).

participation and employment rates of married women with young children who migrate into their birth state (return migrants) are 4.5 percentage points higher than their counterparts who migrate to another state (onward migrants). For the other samples – unmarried women, married women with no children, and married women with only older children – return migrants have lower labor force attachment and employment rates than onward migrants.

In table 10 we use regression analysis to investigate the migration/destination effect. We present the results for probit regressions on labor force participation (regressions on employment and hours yield similar results). The results confirm the patterns observed in the raw data: labor force participation of married women is negatively related to migration, but the destination is also important. For married women with young children, the negative effect of migration on labor force participation is substantially less for those who move into their birth state (i.e., return migrants) than for those who move into another state (i.e., onward migrants). For married women with no children or those with only older children, the tied-mover effect is smaller and there is no discernable difference between the two migration coefficients: the effect of moving back to one's birth state is the same as the effect of moving elsewhere. These results imply that the tied mover hypothesis cannot explain the proximity effects that we have found. They also imply that tied mover effects and proximity effects interact: the effect of migration on labor force attachment is greatly influenced by the presence of children and by the destination of the migrant.

4. Conclusion

Using two large U.S. datasets, the NSFH and the Census, we find that living close to a mother or mother-in-law has a strong positive effect on the labor force attachment of married women with young children. More specifically, we find that family proximity increases the labor force attachment of married women with young children by 4-10 percentage points.

³⁰ We cannot identify individuals who moved between states within the five year window and then returned, nor can we identify those who moved within state.

We argue that childcare is the mechanism through which proximity affects labor supply, but we focus on proximity itself rather than childcare *per se* for two reasons. First, the availability of mothers or mothers-in law to provide unanticipated or irregular childcare may affect women's labor force decisions even if the need for such childcare does not arise. Thus, studies that focus on observed childcare may underestimate the effect of proximity on labor supply. Second, childcare arrangements and labor force decisions are often made simultaneously, so that using actual childcare hours to explain labor force attachment suffers from an endogeneity problem. If childcare hours were the mechanism through which proximity affected labor force attachment, then using close proximity as an instrument would avoid or at least mitigate the endogeneity problem. The resulting instrumental variable estimates, however, imply that childcare hours have very little effect on labor force attachment. We find that close proximity itself has a substantial, robust, and statistically significant effect on labor force attachment, a finding consistent with our irregular or unanticipated childcare hypothesis.

In the raw data, women living in close proximity to their mothers or mothers-in-law are more likely to be working and work more hours. Yet the demographic factors correlated with close proximity are typically correlated with lower rather than higher labor force attachment. Compared with women who do not live within 25 miles of either mother or mother-in-law, those that live close to both mothers live in areas of higher unemployment, are younger, are more likely to have young children, are less educated, have less educated mothers and spouses, are more likely to be black or Hispanic, and are less likely to live in an MSA. Nevertheless, women with young children living close to mothers and mothers-in-law have stronger labor force attachment than those who live far away.

Turning to regression results from the NSFH, we find large and statistically significant effects of close proximity to mother-in-law or to both mother and mother-in-law increases the predicted probability of employment by 10 percentage points. The coefficient on close proximity to only her mother, although positive, is not statistically significant. Apart from this anomalous result, the results support our irregular or unanticipated childcare interpretation hypothesis. More specifically,

- We find proximity effects for married women with young children.

- We find no proximity effect for married women whose mothers or mothers-in-law are in poor health.
- We find no proximity effect for married women with older children or for married women without children.
- We find no proximity effect for unmarried women with children, a result we attribute to the inelastic labor supply of unmarried women with children which makes them unresponsive to the availability of childcare.
- We find no proximity effect for unmarried women with older children or for unmarried women with no children.
- We find no proximity effect for married or unmarried men with young children.

All of these findings are consistent with the hypothesis that the availability of mothers and mothers-in-law to provide childcare at irregular times or when unanticipated needs arise is the mechanism behind the substantial effect of family proximity on the labor supply of married women with young children.

Turning to the census data and using living in one's birth state as a proxy for proximity to mother,

- We find that for married women with young children, birth state residence increases the probability of labor force participation and employment by 2.6 - 6.1 percentage points. For married women without children, we find a small, negative effect of living in the birth state of one or both spouses.
- We find that for never-married women with young children, birth state residence has a small negative effect on labor force participation; we also find a small, negative effect for never-married women without young children.
- We find that for military wives with young children, living in the birth state of both spouses has a positive effect on labor force attachment; we find no effect of birth state residence on military wives with young children living only in his birth state or only in his birth state, and we find no effect of birth state residence on military wives without young children.
- We find that for married women with young children, the negative effect of migration on labor force participation is substantially less for those who

move into their birth state (i.e., return migrants) than for those who move into another state (i.e., onward migrants). For married women with no children or only older children, we find no discernable difference between the effects of moving into their birth state and the effects of moving elsewhere.

This constellation of findings cannot be explained by either the network job search hypothesis or by the tied mover hypothesis -- the proximity effects are too tightly concentrated in a single demographic group -- married women with young children.

We find that the effects of close proximity on the labor supply of married women with young children are robust. Although we are unable to fully control for potential endogeneity, we find clear and convincing circumstantial evidence that proximity affects the labor force attachment of married women with young children, and that the underlying mechanism is the availability of childcare to meet unanticipated needs.

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TABLE 1: CHILDCARE RECEIVED BY PROXIMITY

	Work related childcare	Not work related childcare	Sample size
Married women			
From her mother			
Near neither mother	4.2	8.6	924
Near only hers	23.7	31.1	506
Near only his	7.0	13.4	497
Near both	26.8	36.8	1125
Married women			
From his mother			
Near neither mother	2.7	7.4	924
Near only hers	2.9	5.7	506
Near only his	19.4	25.4	497
Near both	18.4	25.0	1125
Unmarried women			
From her mother			
Not near mother	13.5	14.7	144
Near mother	28.6	47.7	274

NSFH Wave II. Weighted percentages. Sample includes all women over the age of 24, with children 12 years and under, not coresiding with their mothers, with mother and mother-in-law alive and living in the United States (ALUS). Respondents are asked whether they received work-related and/or non-work-related childcare in the past 12 months, and if yes, from whom. Work status is current. "Near" is 25 miles or less.

TABLE 2: WOMEN'S LABOR FORCE ATTACHMENT BY PROXIMITY

	Does not live near mother	Lives near mother	Coresides with mother	
Unmarried women				
No children 12 and under				
Does not work	19.9	24.2	19.1	
Works part-time	16.8	15.6	21.6	
Works full-time	63.3	60.3	59.3	
Sample size	303	348	92	
Children 12 and under				
Does not work	33.5	41.8	30.4	
Works part-time	16.0	9.6	23.4	
Works full-time	50.5	48.5	35.2	
Sample size	144	274	46	
	Lives near neither mother	Lives near his mother only	Lives near her mother only	Lives near both mothers
Married women				
No children 12 and under				
Does not work	23.3	28.6	22.0	20.8
Works part-time	17.4	17.1	16.4	16.0
Works full-time	59.4	54.3	61.6	63.3
Sample size	351	216	221	376
Children 12 and under				
Does not Work	43.9	33.7	41.1	35.9
Works Part-time	23.2	20.7	18.5	22.4
Works Full-Time	32.9	45.7	40.4	41.8
Sample Size	498	314	317	759

NSFH Wave II. Weighted percentages. Sample includes all women aged 25-60 whose mother is ALUS. The sample of married women includes only those for whom both mothers are ALUS. "Near" is 25 miles or less.

**TABLE 3: CHILDCARE AND LABOR FORCE ATTACHMENT:
BIVARIATE PROBIT REGRESSIONS**

	Unmarried women			Married women		
	Work-related childcare	Non-work related childcare	Either type of childcare	Work-related childcare	Non-work related childcare	Either type of childcare
Probability of working:						
Childcare received	0.936 (1.067)	0.124 (0.774)	0.165 (0.556)	0.158 (0.223)	0.135 (0.197)	0.105 (0.138)
Probability of receiving childcare:						
Live near mother	1.084** (0.447)	1.598*** (0.394)	1.578*** (0.402)	1.387*** (0.153)	1.303*** (0.151)	1.540*** (0.166)
Her siblings within 25 miles	0.405 (0.440)	0.563 (0.394)	0.481 (0.341)	0.272* (0.163)	0.120 (0.127)	0.190 (0.140)
Her siblings X live near mother	-0.292 (0.489)	-0.899** (0.434)	-0.631 (0.443)	-0.489** (0.220)	-0.282 (0.201)	-0.424** (0.212)
Sample	395	395	395	1538	1538	1538

NSFH Wave II. Coefficients are presented, with bootstrapped standard errors in parentheses. The sample includes all women in the marriage category, aged 25-60 inclusive, with children 12 and under, for whom both mother (and mother-in-law if applicable) are ALUS. The unmarried sample includes all individuals who are currently divorced, separated, widowed or never married. Control variables included in both regressions, but not presented here for space considerations include age, age squared, whether spouse works and his/her hours of work, whether self (and/or spouse if applicable) currently has medical problems, race (Black, Hispanic, White (omitted)), education categories (both spouses have college degrees, only she has a college degree, only he has a college degree, neither has a college degree (omitted)), whether mother has a college degree, region (Midwest, South, West, Northeast (omitted)), average commuting time in the county, whether residing in an MSA, 1990 county level unemployment rate, whether coresides with mother or mother-in-law. Included in the childcare regression only are proximity indicators, age categories of mother(s) (less than 60, 60-69, 70 and over (omitted)), whether mother(s) are in poor health, whether siblings live within 25 miles, and an interaction between siblings and proximity.

**TABLE 4: LABOR FORCE ATTACHMENT AND HOURS OF WORK:
PROBIT AND TOBIT REGRESSIONS**

	Married women				Unmarried women	
	Probit: positive hours of work		Tobit: usual weekly hours of work		Probit: positive hours of work	Tobit: usual weekly hours of work
	(1)	(2)	(3)	(4)	(5)	(6)
Coreside with mother	---	---	---	---	-0.228* (0.120) <i>-0.073</i>	-4.103* (2.203)
Lives near own mother	0.070 (0.070) ---		0.724 (1.585)		-0.096 (0.106) ---	-2.013 (1.321)
Lives near own mother only		0.036 (0.093) ---		0.531 (2.005)		
Lives near spouse's mother only		0.154 (0.095) <i>0.053</i>		3.778* (1.994)		
Lives near both mothers		0.231*** (0.086) <i>0.081</i>		4.006** (1.954)		
Pr(Y=1 X)	0.683	0.683			0.770	
Y (fitted values)			19.32	19.32		28.14
Observations	2524	2524	2524	2524	1637	1637
LRchi2 (DF)	422.0 (29)	724.0 (37)	653.8 (29)	741.8 (37)	190.8 (24)	243.0 (24)
Pseudo R2	0.070	0.075	0.014	0.015	0.081	0.013

NSFH Wave II. Coefficients are presented, with bootstrapped standard errors in parentheses. Marginal effects are in italics, presented if the coefficient is significant at the 80 percent confidence level. The sample includes all individuals in the marriage category, aged 25-60 inclusive, for whom both mother (and mother-in-law if applicable) are ALUS. The unmarried sample includes all individuals who are currently divorced, separated, widowed or never married. Control variables included in the regressions, but not presented here for space considerations include age, age squared, whether spouse works and his/her hours of work, whether self and/or spouse currently has medical problems, race (Black, Hispanic, White (omitted)), education categories (both spouses have college degrees, only she has a college degree, only he has a college degree, neither has a college degree (omitted)), children 12 and under present in the household, only children over 12 present in the household, children outside the household, whether mother has a college degree, region (Midwest, South, West, Northeast (omitted)), average commuting time in the county, whether residing in an MSA, 1990 county level unemployment rate, whether coresides with mother or mother-in-law, age categories of mother(s) (less than 60, 60-69, 70 and over (omitted)), whether mother (or mother-in-law) is in poor health, whether siblings live within 25 miles.

Table 5: LABOR FORCE ATTACHMENT: PROBIT REGRESSIONS

	All	Women with young children in household	Women with only older children in household	Women with no children in household	Her mother in poor health	His mother in poor health
	(1)	(2)	(3)	(4)	(5)	(6)
Lives near her mother only	0.036 (0.090) <i>---</i>	0.121 (0.112) <i>---</i>	-0.040 (0.231) <i>---</i>	-0.076 (0.321) <i>---</i>	-0.342 (0.297) <i>---</i>	0.081 (0.309) <i>---</i>
Lives near his mother only	0.154 (0.109) <i>0.053</i>	0.292*** (0.106) <i>0.109</i>	-0.219 (0.206) <i>---</i>	0.310 (0.348) <i>---</i>	-0.145 (0.387) <i>---</i>	0.004 (0.316) <i>---</i>
Lives near both mothers	0.231*** (0.086) <i>0.081</i>	0.282** (0.113) <i>0.107</i>	0.118 (0.234) <i>---</i>	0.142 (0.346) <i>---</i>	0.106 (0.344) <i>---</i>	0.077 (0.372) <i>---</i>
Children 12 and under	-0.552*** (0.080) <i>-0.188</i>				-0.570** (0.277) <i>-0.184</i>	-0.590*** (0.221) <i>-0.192</i>
Her siblings within 25 miles	0.045 (0.071) <i>---</i>	-0.030 (0.088) <i>---</i>	0.055 (0.165) <i>---</i>	0.570** (0.255) <i>0.137</i>	0.092 (0.307) <i>---</i>	-0.006 (0.240) <i>---</i>
His siblings within 25 miles	-0.135** (0.066) <i>-0.048</i>	-0.120 (0.094) <i>-0.046</i>	-0.057 (0.150) <i>---</i>	-0.321 (0.216) <i>-0.082</i>	-0.138 (0.252) <i>---</i>	0.207 (0.316) <i>---</i>
Pr(Y=1 X)	0.684	0.606	0.755	0.833	0.717	0.709
Observations	2,524	1,571	592	359	319	287
Pseudo R2	0.075	0.053	0.133	0.157	0.155	0.182

NSFH Wave II. Coefficients are presented, with standard errors in parentheses. Marginal effects on the predicted probability are italicized and listed for those coefficients that are statistically significant at the 80 percent confidence level. The sample includes all individuals in the marriage category, aged 25-60 inclusive, for whom both mother are ALUS. Full control variables are included in all regressions, see footnote from table 4 for the list of controls.

TABLE 6: BIRTH STATE RESIDENCE AND LABOR FORCE ATTACHMENT: SUMMARY STATISTICS

	Married women			Military wives			Never married women		
	With children 12 and under	With only older children	No children in the household	With children 12 and under	With only older children	No children in the household	With children 12 and under	With only older children	No children in the household
Sample size	675,850	172,114	204,058	10,578	1,120	3,135	73,813	16,336	226,000
In birth state	63.84%	66.96%	59.94%	18.95%	20.54%	19.40%	75.61%	74.54%	71.49%
In only her birth state	15.44%	14.11%	15.69%	10.24%	9.29%	10.85%			
In only his birth state	12.86%	12.61%	13.29%	5.08%	5.71%	5.39%			
In both birth states	48.40%	52.85%	44.25%	8.71%	11.25%	8.55%			
In the labor force									
Not residing in birth state	0.64	0.79	0.85	0.533	0.753	0.787	0.779	0.766	0.866
Residing in his birth state	0.70	0.80	0.85	0.574	0.797	0.852			
Residing in her birth state	0.69	0.80	0.85	0.597	0.808	0.836	0.744	0.720	0.807
Residing in both birth state	0.71	0.80	0.83	0.621	0.825	0.787			
Employed									
Not residing in birth state	0.62	0.76	0.82	0.492	0.714	0.716	0.698	0.700	0.830
Residing in his birth state	0.68	0.78	0.82	0.541	0.781	0.775			
Residing in her birth state	0.66	0.77	0.83	0.560	0.788	0.762	0.652	0.651	0.764
Residing in both birth state	0.68	0.78	0.81	0.590	0.810	0.750			
Usual weekly hours									
Not residing in birth state	25.13	31.6	37.2	22.50	30.34	34.59	32.44	32.89	37.76
Residing in his birth state	27.08	32.0	36.3	24.11	30.25	34.96			
Residing in her birth state	26.73	31.9	36.5	25.36	29.32	33.81	30.45	29.90	33.82
Residing in both birth state	26.91	31.4	35.1	25.55	31.93	34.28			

U.S. Census 2000. The samples includes all married and never married women aged 25-45, born in the U.S., non-students. The military wives sample includes all women aged 18-45, non-students, born in the U.S. whose husbands are employed in the U.S. military.

**TABLE 7: BIRTH STATE RESIDENCE AND LABOR FORCE ATTACHMENT:
PROBIT REGRESSIONS**

	Married women		Military wives		Never married women	
	In labor force	Employed	In labor force	Employed	In labor force	Employed
	(1)	(2)	(3)	(4)	(5)	(6)
Living in birth state	-0.058*** (0.012) <i>-0.008</i>	-0.052*** (0.012) <i>-0.009</i>	-0.058 (0.059) ---	-0.026 (0.026) ---	-0.039** (0.017) <i>-0.008</i>	-0.041** (0.016) <i>-0.014</i>
Children 12 and under	-0.615*** (0.012) <i>-0.159</i>	-0.570*** (0.012) <i>-0.155</i>	-0.827*** (0.033) <i>-0.277</i>	-0.739*** (0.032) <i>-0.266</i>	0.012 (0.028) <i>-0.008**</i>	-0.056** (0.027) <i>-0.011</i>
Birth state X children 12 and under	0.128*** (0.014) <i>0.039</i>	0.122*** (0.014) <i>0.039</i>	0.990 (0.066) <i>0.032</i>	0.070 (0.064) <i>0.026</i>	0.030 (0.032) ---	0.013 (0.030) ---
Prob(Y=1 X)	0.751	0.728	0.633	0.582	0.841	
Observations	210004	210004	14833	14833	63182	63182
LRchi2 (DF)	17887.84 (33)	18428.96 (33)	1955.10 (33)	1968.20 (33)	9035.17 (28)	10939.58 (28)
Pseudo R2	0.074	0.073	0.099	0.097	0.146	0.155

U.S. Census 2000. Coefficients presented with standard error in parentheses and marginal effect on the predicted probability in parentheses. The sample includes all married and never married women aged 25-45, born in the U.S., non-students. The regressions use a random 10 percent sample. The military wives sample includes all women aged 18-45, non-students, born in the U.S. whose husbands are employed in the U.S. military. The full set of controls are included in each regression. These include age, age squared, children (children 12 and under, only children over 12 in the household, no children in the household (omitted)), education (less than high school, high school diploma (omitted), more than high school, bachelor's degree, more than bachelor's degree), spouse education (groups same), disability, spouse disability, race (Black, Hispanic, white (omitted)), rented accommodations, whether in a metropolitan area, total income of spouse, whether in different state five years prior, size of current state (square miles), U.S. region.

TABLE 8: BIRTH STATE RESIDENCE OF BOTH SPOUSES AND LABOR FORCE ATTACHMENT: PROBIT REGRESSIONS

	Married women		Military wives	
	In labor force	Employed	In labor force	Employed
	(1)	(2)	(3)	(4)
Living in only her birth state	-0.045** (0.019) <i>-0.012</i>	-0.050*** (0.018) <i>-0.011</i>	0.023 (0.077) ---	0.020 (0.783) ---
Living in only his birth state	-0.067*** (0.019) <i>-0.011</i>	-0.048** (0.019) <i>-0.014</i>	0.080 (0.104) ---	0.036 (0.709) ---
Living in birth state of both	-0.088*** (0.015) <i>-0.013</i>	-0.069*** (0.014) <i>-0.016</i>	-0.140 (0.080) ---	-0.075 (0.078) ---
Children 12 and under	-0.668*** (0.015) <i>-0.158</i>	-0.131*** (0.021) <i>-0.155</i>	-0.821*** (0.034) <i>-0.277</i>	-0.735*** (0.033) <i>-0.266</i>
Her birth state X children 12 and under	0.128*** (0.022) <i>0.040</i>	0.131*** (0.021) <i>0.042</i>	0.018 (0.087) ---	0.018 (0.083) ---
His birth state X children 12 and under	0.160*** (0.023) <i>0.049</i>	0.141*** (0.022) <i>0.046</i>	-0.102 (0.119) ---	-0.056 (0.113) ---
Both birth state X children 12 and under	0.202*** (0.017) <i>0.061</i>	0.184*** (0.016) <i>0.060</i>	0.176** (0.091) <i>0.053</i>	0.122 (0.088) <i>0.042</i>
Prob(Y=1 X)	0.751	0.728	0.633	0.582
Observations	210004	210004	14833	14833
LRchi2 (DF)	17967.33 (37)	18499.93 (37)	1958.33 (37)	1969.41 (37)
Pseudo R2	0.074	0.074	0.099	0.097

U.S. Census 2000. Coefficients presented with standard error in parentheses and marginal effect on the predicted probability in parentheses. Sample and control variables are as described in table 7.

TABLE 9: MIGRATION, EMPLOYMENT, AND LABOR FORCE ATTACHMENT

	Non-Migrants			Migrants		
	(A) In birth state	(B) Not in birth state	(C) Difference for non- migrants (A) – (B)	(D) In birth state	(E) Not in birth state	(F) Difference for migrants (D) – (E)
Married with children 12 and under						
Employed	0.683	0.671	0.013***	0.581	0.535	0.456***
In labor force	0.704	0.689	0.016***	0.608	0.562	0.456***
Married with children over 12 only						
Employed	0.780	0.778	0.002	0.688	0.712	-0.024**
In labor force	0.801	0.799	0.001	0.723	0.750	-0.026**
Married with no children in household						
Employed	0.815	0.825	-0.010***	0.803	0.818	-0.015**
In labor force	0.838	0.847	-0.009***	0.837	0.851	-0.143**
Never married with children 12 and under						
Employed	0.652	0.696	-0.044***	0.666	0.703	-0.036***
In labor force	0.743	0.775	-0.032***	0.776	0.794	-0.018
Never married with children over 12 only						
Employed	0.652	0.697	-0.045***	0.622	0.728	-0.106***
In labor force	0.721	0.761	-0.040***	0.703	0.806	-0.103***
Never married with no children in household						
Employed	0.762	0.815	-0.053***	0.807	0.863	-0.562***
In labor force	0.804	0.851	-0.046***	0.858	0.899	-0.041***

U.S. Census 2000 unweighted IPUMS sample. Includes all women aged 25-45 and born in the U.S.

TABLE 10: MIGRATION AND LABOR FORCE ATTACHMENT: PROBIT REGRESSIONS

	Married women				Never married women			
	All	Children 12 and under	Only children over 12	No children in the household	All	Children 12 and under	Only children over 12	No children in the household
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Omitted Case: (A) Non-migrant, birth state</i>								
(B) Non-migrant, not in birth state	-0.034*** (0.007) <i>-0.011</i>	-0.041*** (0.009) <i>-0.014</i>	-0.039** (0.018) <i>-0.01</i>	0.005 (0.019) ---	0.021 (0.016) <i>0.005</i>	0.028 (0.030) ---	0.033 (0.060) ---	0.021 (0.019) ---
(C) Migrant, birth state	-0.242*** (0.021) <i>-0.077</i>	-0.242*** (0.024) <i>-0.085</i>	-0.233*** (0.070) <i>-0.063</i>	-0.201*** (0.053) <i>-0.043</i>	-0.031 (0.038) ---	0.012 (0.077) ---	-0.139 (0.190) ---	-0.046 (0.046) ---
(D) Migrant, not in birth state	-0.256*** (0.012) <i>-0.081</i>	-0.303*** (0.014) <i>-0.106</i>	-0.158*** (0.039) <i>-0.042</i>	-0.194*** (0.027) <i>-0.041</i>	0.061** (0.025) <i>0.015</i>	0.065 (0.055) ---	0.226 (0.153) <i>0.073</i>	0.043 (0.029) <i>0.009</i>
Children 12 and under	-0.540*** (0.009) <i>-0.171</i>				0.042*** (0.015) <i>0.010</i>			
Only children over 12 in the household	-0.138*** (0.012) <i>-0.044</i>				0.061** (0.027) <i>0.015</i>			
Chi2 : Test (C) = (D)	0.36	5.17	0.93	0.02	4.30	0.33	2.31	2.96
Prob>chi2	0.547	0.023	0.336	0.892	0.038	0.565	0.128	0.086
Pr(Y=1 X)	0.752	0.696	0.812	0.870	0.840	0.772	0.743	0.866
Observations	210054	135110	34245	40699	63469	14894	3291	45284
Pseudo R2	0.074	0.058	0.061	0.109	0.142	0.0545	0.082	0.179

U.S. Census 2000. Coefficients are presented with standard errors in parentheses, marginal effects in italics if p-value is less than 0.2. Sample: A ten percent random sample of all women aged 25-45, born in the U.S. The full set of controls, as described in table 8, is included in each regression.

**APPENDIX 1: MEANS AND STANDARD DEVIATIONS:
NSFH MARRIED WOMEN SAMPLE**

	Live near neither mother	Live near his mother only	Live near her mother only	Live near both mothers
Sample size				
Currently working	0.648 (0.478)	0.627 (0.484)	0.689 (0.463)	0.693 (0.461)
Usual weekly hours (incl. 0)	23.893 (20.402)	22.993 (19.693)	26.577 (20.946)	25.261 (19.484)
Usual weekly hours (excl. 0)	36.906 (12.755)	36.690 (10.783)	38.642 (13.104)	36.166 (7.746)
Coreside with her mother			0.017 (0.130)	0.022 (0.145)
Coreside with his mother		0.041 (0.198)		0.029 (0.168)
Different city prior wave	0.420 (0.494)	0.283 (0.450)	0.308 (0.462)	0.211 (0.408)
Her siblings within 25 miles	0.145 (0.352)	0.709 (0.454)	0.333 (0.471)	0.820 (0.385)
His siblings within 25 miles	0.165 (0.371)	0.319 (0.466)	0.725 (0.447)	0.824 (0.381)
Children 12 and under	0.546 (0.498)	0.562 (0.496)	0.559 (0.496)	0.635 (0.481)
Age	38.706 (8.124)	37.451 (7.297)	37.027 (7.586)	36.166 (7.746)
Medical problems	0.205 (0.404)	0.246 (0.431)	0.245 (0.430)	0.197 (0.398)
Black	0.037 (0.188)	0.061 (0.240)	0.043 (0.203)	0.080 (0.272)
Hispanic	0.053 (0.223)	0.061 (0.239)	0.055 (0.229)	0.083 (0.276)
Mother has college degree	0.331 (0.471)	0.260 (0.439)	0.280 (0.449)	0.180 (0.384)
Half power - he has college	0.202 (0.402)	0.115 (0.319)	0.111 (0.314)	0.103 (0.303)
Half power - she has college	0.081 (0.273)	0.080 (0.271)	0.089 (0.284)	0.071 (0.257)
Power - both have college	0.358 (0.480)	0.206 (0.405)	0.247 (0.431)	0.095 (0.294)
He is not working	0.089 (0.285)	0.120 (0.325)	0.119 (0.323)	0.111 (0.314)
His usual weekly hours (incl. 0)	42.522 (16.577)	41.571 (18.765)	41.148 (18.372)	41.706 (18.214)
He has medical problems	0.246 (0.431)	0.262 (0.440)	0.217 (0.412)	0.289 (0.453)

...

	Live near neither mother	Live near his mother only	Live near her mother only	Live near both mothers
Midwest	0.264 (0.441)	0.221 (0.415)	0.352 (0.478)	0.275 (0.447)
South	0.361 (0.480)	0.337 (0.473)	0.302 (0.459)	0.359 (0.480)
West	0.249 (0.433)	0.249 (0.433)	0.197 (0.398)	0.145 (0.352)
Average commuting time	22.101 (4.040)	22.266 (3.812)	21.928 (4.554)	21.780 (4.100)
Resides in MSA	0.856 (0.351)	0.824 (0.381)	0.819 (0.385)	0.766 (0.423)
MSA unemployment rate	5.970 (1.678)	6.353 (1.742)	6.145 (1.866)	6.637 (2.248)
Her mother aged less than 60	0.291 (0.454)	0.305 (0.460)	0.344 (0.475)	0.377 (0.485)
Her mother aged 60-69	0.332 (0.471)	0.345 (0.475)	0.354 (0.478)	0.342 (0.474)
Her mother widowed/divorced	0.266 (0.442)	0.305 (0.460)	0.218 (0.413)	0.257 (0.437)
Her mother in poor health	0.142 (0.349)	0.132 (0.338)	0.122 (0.328)	0.134 (0.340)
his mother aged less than 60	0.206 (0.404)	0.229 (0.420)	0.319 (0.466)	0.320 (0.466)
His mother aged 60-69	0.349 (0.477)	0.350 (0.477)	0.336 (0.472)	0.340 (0.474)
His mother widowed/divorced	0.291 (0.454)	0.311 (0.463)	0.273 (0.446)	0.298 (0.457)
His mother in poor health	0.102 (0.303)	0.168 (0.373)	0.093 (0.291)	0.120 (0.325)

NSFH Wave II. Weighted percentages. Sample includes all married women aged 25-60, non-students, whose mother and mother-in-law is ALUS. "Near" is 25 miles or less.