Child-Custody Reform and the Division of Labor in the Household

John M. Nunley*, Richard Alan Seals Jr.**

University of Wisconsin-La Crosse*, Auburn University**

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John M. Nunley[*]
University of Wisconsin—La Crosse

Richard Alan Seals Jr.[**]
Auburn University

Abstract: We investigate whether a change in the expectation of child custody affects the amount of time that married mothers and fathers devote to market and household work. Data from the Panel Study of Income Dynamics (PSID) coupled with plausibly exogenous variation in the adoption of joint-custody laws across states and time allow us to examine how the prospect of shared child custody affects within-marriage time allocation. We exploit the longitudinal feature of the PSID to adjust our estimates for sample selection based on the reform's potential impact on the composition of the sample of married couples. We find that custody reform induces a reallocation of time within marriage, with mothers working more in the market and fathers working more in the home.

JEL Categories: D13, J22

Key words: market work, household work, child custody, household bargaining

* John M. Nunley, Department of Economics, College of Business Administration, University of Wisconsin—La Crosse, La Crosse, WI 54601, phone: 608-785-5145, fax: 608-785-8549, email: nunley.john@uwlax.edu.

** Richard Alan Seals Jr., Department of Economics, College of Liberal Arts, Auburn University, Auburn, AL 36849-5049, phone: 615-943-3911, email: alan.seals@auburn.edu.

1. Introduction

The nuclear family and the laws which govern its dissolution underwent dramatic change in the United States beginning in the 1960s. While economists have mostly focused on the effects of unilateral and no-fault divorce laws, less attention has been given to changes in child-custody laws. The movement in most states from a maternal-preference regime to a presumption of joint custody during the late-1970s and early-1980s represents a significant change in the legal assignment of children following divorce (Brinig and Buckley 1998). Most divorced parents in the U.S. now rear their children under some form of joint-parenting agreement. Although determination of custody is a derivative of divorce, altering the expected custodial allocation of children has been shown to impact marriage and divorce outcomes (Brinig and Buckley 1998, Brinig and Allen 2000, 2011, Halla 2011) as well as marital investment in child quality (Nunley and Seals 2011).

In this study, we investigate whether the adoption of joint-custody laws affects the amount of time that married mothers and fathers devote to market and household work. Relative to a maternal preference regime, the adoption of joint-custody laws increases (decreases) the expected time that fathers (mothers) spend with their children following divorce. As a result, the adoption of joint-custody laws has the potential to shift bargaining power within marriage. Custody reform likely puts mothers in an inferior bargaining position, as married mothers are more likely to file for divorce when they expect to receive sole custody of their children (Brinig and Allen 2000). A change to a presumption of joint custody implies that mothers might file for divorce at lower rates, which may reduce the credibility of their divorce threat. In fact, there is some evidence that custody reform empowers fathers, potentially leading to intrahousehold

resource allocation decisions that reflect fathers' preferences to a greater extent (Nunley and Seals 2011).

The predicted impact of joint-custody reform on the time that married mothers and fathers devote to market and household work depends on the economic model of family behavior being used. If custody reform affects the balance of power but not preferences or the joint-consumption set, unitary models predict little change in the allocation decisions in response to custody reform (Becker 1991, Browning, Chiappori and Lechene 2006, Samuelson 1956). By contrast, divorce-threat bargaining models (Manser and Brown 1980, McElroy and Horney 1981) and collective models (Chiappori, Fortin and Lacroix 2002) predict that policy changes, such as custody reform, can result in different allocation decisions by changing the bargaining positions of spouses. Theoretical work has yet to consider how a policy change, such as custody reform, might affect time allocated to household production by mothers and fathers within marriage.[1] However, we can generate some hypotheses by assuming that an increase in time allocated to household work decreases one's utility. For example, an improved bargaining position for fathers should make it more likely that they allocate more time to utility-increasing activities (i.e. leisure) and less time to utility-decreasing activities (i.e. household work). The opposite would be true for mothers whose bargaining position is worsened by the policy change.

Custody reform could also alter the within-marriage investment incentives facing mothers and fathers, which could result in patterns of market and household work that are difficult to reconcile with existing models of intrahousehold distribution. For instance, mothers may expect to devote more time to market work following divorce, which may provide them with an incentive to preserve their outside options by investing more in labor-market capital. By contrast,

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[1] One possible exception is Rasul (2006) who models the effect of custodial allocation on investment in child quality, which could be interpreted as a function of household production.

fathers may expect to participate in childrearing at greater rates following divorce in joint-custody states, which may provide an incentive to invest more in household capital.

Variation in the timing of joint-custody reforms across states provides a source of plausibly exogenous variation with which to examine how the prospect of shared child custody affects intrahousehold time allocation.[2] In conjunction with the quasi-experimental data provided by child-custody reform, we use individual-level panel data from the Panel Study of Income Dynamics (PSID). The PSID provides information on how much time each parent allocates to market and household work, two important variables in the household's allocation problem. In addition, the sample period provided by the PSID spans the period in which the vast majority of custody reforms took place, making these data ideal for investigating the reform's impact on within-marriage behavior. We use data from 1968-1992, a period during which time 44 states adopted provisions favoring shared child custody.

When considering the impact of changes in divorce laws, such as custody reform, on within-marriage behavior, it is important to account for potential selection bias. Stevenson (2007) emphasizes how a legal change from mutual consent divorce to unilateral divorce might affect the composition of married couples, which could produce misleading results when examining within-marriage behavior. An important strength of the PSID is that its longitudinal nature allows us to account for the impact of custody reform on selection into and out of marriage. Because the PSID incorporates a progression of age cohorts, the effect of custody laws on the changing composition of the married population can also be accounted for. We adjust our estimates for selection on custody reform by creating inverse probability weights from the predicted probabilities of marriage and divorce decisions (Wooldridge 2002).

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[2] See Halla (2011) and Nunley and Seals (2011) for discussion of the valildity of joint-custody reform as a source of exogenous variation with respect to household-level outcomes.

In states that adopt joint-custody laws, we find that married mothers allocate more time to market work and married fathers allocate more time to household work. Custody reform increases the time that married mothers allocate to the labor market by approximately 90 hours per year, while it increases the time that fathers allocate to household work by approximately 30 hours per year. We find no statistical evidence linking married mothers to less household work in reform states. However, we do find evidence that custody reform negatively affects married fathers' labor market participation by 1.74 percentage points; however, this estimate is only significant at the ten-percent level. Hence, it appears that married mothers and fathers are reallocating their time within the household in response to custody reform, as the total time that mothers and fathers devote to the sum of market and household work is unchanged by custody reform.

2. Brief Institutional Background

In the United States, divorce courts are directed to make custodial decisions on the basis of the child's best interest. The best-interest standard evolved as a concept in family law in the last half of the 20th century, as courts moved away from a maternal-preference regime to a presumption of joint custody (Jacob 1988). In most states, joint-custody arrangements are primarily understood to mean joint legal custody (i.e. divorced parents make joint decisions concerning important matters in the child's upbringing) instead of joint physical custody (i.e. the child shares time between parents). However, recently some states have strengthened their joint custody provisions to reflect an equal physical custody standard (Brinig 2005, Allen and Brinig 2011). The dramatic institutional changes to custody have been anecdotally related to the increase in divorce following the unilateral and no-fault divorce law revolution, which resulted in

large numbers of children living with single parents and the subsequent emergence of fathers'
rights groups who successfully lobbied for a greater share of children's time following divorce
(Allen and Brinig 2011, Jacob 1988). In the following section, we outline how these laws can
affect the allocation of *married* parents' time to market and household work. Hence, we are
interested in activity that occurs in the "shadow" of custody laws.

3. Theoretical Background

The unitary model (Becker 1991, Samuelson 1956), divorce-threat bargaining models
(Manser and Brown 1980, McElroy and Horney 1981), and the collective model (Chiappori
1988, 1992) are commonly used frameworks for examining intrahousehold behavior.[3] In what
follows, we provide a brief discussion of each of these models, with emphasis on predictions
concerning the impact of custody reform on the time allocation of spouses with children.[4] In
addition, we discuss how custody reform might alter the within-marriage investment incentives
facing mothers and fathers, which could result in allocation decisions that are difficult to explain
with existing models of intrahousehold distribution.

The unitary model treats the household as a single decision-maker, in which household
allocation decisions are made by a dominant altruist (Becker 1991) or through consensus among

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[3] Bergstrom (1996, 1997), Browning, Chiappori and Weiss (2011), Lundberg and Pollak (1996) and Vermeulen
(2002) provide excellent surveys on economic models of family behavior. We only provide a basic overview of
these models. The interested reader should refer to Browning, Chiappori and Weiss (2011) and Vermeulen (2002)
for a formal exposition of the unitary, bargaining and collective models.

[4] Empirical tests of the competing models of intrahousehold resource allocation began with Schultz (1990) and
Thomas (1990), who use nonlabor income as a way to investigate the predictions made by the unitary model. But
nonlabor income may be an endogenous variable. In response to this criticism, researchers examine various natural
experiments that target individual household members with additional income or bargaining power as ways to
examine the predictions made by unitary models and models that emphasize spousal bargaining as a key determinant
of intrahousehold resource allocation (Attanasio and Lechene 2002, Bobonis 2009, Chiappori, Fortin and Lacroix
2002, Duflo 2003, Genadek, Stock and Stoddard 2007, Gray 1998, Lundberg, Pollak and Wales 1997, Nunley and
Seals 2011, Stevenson 2007, 2008, Ward-Batts 2008). In each of these studies, the control of income or bargaining
power within households affects allocation decisions, an indication that the balance of power within households may
be an important determinant of intrahousehold resource allocation.

family members (Samuelson 1956). Income controlled by individual household members is pooled to maximize the household's objective function. Schultz (1990) argues that the unitary model has a testable prediction: factors that allow one spouse to exert greater influence over allocation decisions should have no impact on how household resources are allocated. Researchers typically conclude that finding differences in allocation decisions in response to a policy change represents a rejection of the unitary model. However, Browning, Chiappori and Lechene (2006) note the difficulties associated with formally testing the unitary model. From an empirical standpoint, it is difficult to determine whether a policy change influences intrahousehold resource allocation by changing preferences or the balance of power within households. If joint-custody reform affects the bargaining position of spouses but not preferences or the joint-consumption set, the unitary model provides a clear prediction: there should be no change in the time that spouses devote to market and household work in response to custody reform. However, it is possible for a policy change, such as custody reform, to cause a shift in preferences, which could result in different allocation decisions but would not be grounds to reject the unitary model. As such, concluding that the unitary model is rejected when intrahousehold resource allocation decisions are affected by a policy change could be misleading (Browning, Chiappori and Lechene 2006).[5]

Divorce-threat bargaining models assume that husbands and wives have distinct preferences, and that the utilities associated with the Nash bargaining solution depend on an external threat point (Manser and Brown 1980, McElroy and Horney 1981). In this context, changes in policies governing the division of marital property or children following divorce, which are referred to as

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[5] Browning, Chiappori and Lechene (2006) outline the requirements for formally testing the restrictions imposed by unitary models. In particular, the Slutsky conditions (i.e. symmetry and negative semidefiniteness) play a crucial role in determining whether unitary models can be rejected. Our goal is to establish the causal relationship between custody reform and intrahehold time allocation, not to test these restrictions.

extrahousehold environmental parameters by McElroy (1990), have distributional consequences within marriage because the value of divorce changes for mothers and fathers and, hence, their respective bargaining positions. The adoption of joint-custody laws, which likely improves the bargaining positions of fathers, should result in allocation decisions that reflect fathers' preferences to a greater extent.[6] However, it is difficult to make a clear prediction regarding whether mothers' or fathers' time allocated to market or household work should rise or fall in response to custody reform. Nevertheless, divorce-threat bargaining models predict that custody reform should affect the time allocation of mothers and fathers within marriage by altering the value of divorce for each parent.[7]

The collective model of household behavior also emphasizes spousal bargaining, but it makes minimal assumptions and nests the unitary and divorce-threat bargaining models as special cases (Chiappori 1988, 1992).[8] Recent additions to the collective model incorporate distribution factors into the analysis. Distribution factors are variables that affect the intrahousehold distribution process by changing spousal bargaining power without altering individual preferences or the joint consumption set (Browning and Chiappori 1998, Chiappori, Fortin and Lacroix 2002). Custody reform would likely operate as a distribution factor in the collective framework. Because custody reform likely increases the bargaining power of fathers

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[6] Halla (2011) and Nunley and Seals (2011) discuss the likely impact of joint-custody reform on the bargaining power of spouses. Both of these studies argue that fathers are the likely recipients of an improved bargaining position in states that adopt joint-custody laws.

[7] Lundberg and Pollak (1993) develop a noncooperative bargaining model that emphasizes an internal threat point (e.g., sleeping on the couch) in lieu of an external threat point (i.e. divorce). Their model predicts little change in the distribution of household resources in response to custody reform.

[8] The only assumption made in the collective framework is that household allocation decisions are Pareto efficient. Browning and Chiappori (1998) and Donni and Moreau (2007) argue that the Pareto efficiency assumption is reasonable because marriage can be considered a repeated game, making it conceivable that households could develop mechanisms to promote Pareto-efficient allocation decisions. By contrast, Lundberg and Pollak (2003) question the Pareto-efficiency assumption because such outcomes only result when couples are able to make binding commitments in stationary environments.

relative to mothers, the reform generates opposing income effects on mothers and fathers. The policy change could impose a negative income effect on mothers and a positive income effect on fathers. Assuming leisure is a normal good, the negative income effect on mothers triggers an increase in their time allocated to market work, and the positive income effect on fathers tends to reduce their time allocated to market work.

The impact of custody reform on the time that spouses allocate to household production is not clear. Chiappori (1997) introduces household production to the collective framework, but the impact of distribution factors is not explicitly considered. But it is possible to formulate some general hypotheses by assuming that time allocated to household work generates disutility. A shift in bargaining power to fathers likely results in them allocating more time to activities that increase utility and less time to activities that decrease utility. Using this simple framework, fathers (mothers) would likely allocate more (less) time to leisure and less (more) time market and household work in states that adopt joint-custody laws.

An alternative way that custody reform could affect intrahousehold time allocation is through changes in the within-marriage investment incentives facing mothers and fathers, which may depend on the reform's impact on the risk of divorce. It is unclear whether the divorce risk rises or falls in response to custody reform, as the incentives to divorce are potentially different for mothers and fathers (Halla 2011). For instance, mothers (fathers) may have less (more) incentive to purse divorce because they expect to receive relatively less (more) child custody in the event of divorce (e.g, see Brinig and Allen 2000). It could be that mothers and fathers have incentives to preserve their options outside of marriage and, thus, improve their bargaining position within marriage (Stevenson 2008). As a result, custody reform could induce mothers to acquire greater labor market skills by substituting time from other activities toward market work. Alternatively,

fathers may invest in the acquisition of skills specific to household work based on the expectation of a greater share of childrearing responsibilities following divorce. Put differently, custody reform could induce married parents to alter their roles within marriage. For example, mothers may substitute market work for household work, and fathers may substitute household work for market work. Such findings would be difficult to reconcile with the unitary, bargaining and collective models.

4. Data and Econometric Methodology

We estimate the effect of joint-custody reform on the time that married couples with children devote to household and market work with data from the Panel Study of Income Dynamics (PSID). The PSID sampled approximately 5,000 families in the United States beginning in 1968 and conducted follow-up surveys on the original and split-off households annually until the late-1990s. We create a panel of husband-wife observations from the core sample of the PSID for the years 1972-1992, the period in which a large number of states adopted laws favoring joint child custody. We exclude couples who married and/or had children before 1972, which is the year before the first joint-custody reforms.

When analyzing a policy change that has the potential to affect marriage and divorce, it is important to account for selection effects. It is possible that custody reform affects the composition of married couples by altering who marries and who divorces. The ability to account for custody reform's impact on selection into and out of marriage is a key advantage of the PSID, as we observe individuals before marriage and continue to observe them thereafter. We take advantage of the longitudinal design of the PSID and incorporate information on individuals beginning in 1968, in order to account for possible changes in the married population

associated with joint-custody reform. Observations on unmarried individuals are used until 1991, the year before our sample ends. We use the data on these unmarried individuals to account for marriage selection based upon custody reform using inverse probability weights created from probit estimates of marriage probabilities in a given year of the survey (Wooldridge 2002). We should point out that this estimate is a reflection of custody reform's effect on the probability of being married in a given year. That is, we are not attempting to model marriage and divorce as outcomes, only to control for joint custody's impact on household and market labor outcomes through its impact on the marriage market. However, because the PSID is designed to incorporate successive age cohorts, we are able to control for potential differential effects of custody reform on the marriage markets of these cohorts.

Variation in the timing of custody reforms across states provide an exogenous source of information that can be used to investigate how the prospect of shared child custody affects the time that mothers and fathers devote to market and household work within marriage.[9] We examine custody reform's impact on the time allocated to market and household work by married mothers and fathers separately, as well as the relative contributions of married mothers and fathers to market and household work. The units of observation are households, for which we have complete information on both spouses (e.g, age, education, and marriage and fertility history). We compare households in states that adopt joint-custody laws to those in states that have yet to do so or else did not adopt joint-custody laws during our sample period. In our context, the treatment group consists of households who live in states that adopt joint-custody laws at some point during our sample period, and the controls are those who live in states that did not adopt, or have yet to adopt, joint-custody laws by the end of our sample period.

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[9] We use the custody-law coding from Brinig and Buckley (1998).

The empirical model takes the following form:

$$Outcome_{i,s,t} = \beta_0 + \beta_1 \, Joint \; Custody_{s,t} + \beta_2 \, \mathbf{X}_{i,s,t} + \beta_3 \mathbf{S}_{s,t} + \beta_4 \, State_s + \beta_5 \, Year_t$$
$$+ \beta_6 \, State_s \times Time \; Trend + \varepsilon_{i,s,t}.$$

(1)

The terms *i*, *s*, and *t* index households, states, and time, respectively. *Outcome* represents the dependent variables used in our analysis (discussed in the next section); *Joint Custody* equals one when a state has a presumption of joint custody and zero when the state has a maternal preference regime in place; $\mathbf{X}$ is a vector of individual-level controls, including age, age-squared, and educational attainments of both spouses, race of the head of household, and religious affiliation; $\mathbf{S}$ is a vector of time-varying state-level control variables;[10] *State* represents state fixed effects; *Year* represents year-specific fixed effects; *State* × *time trend* represents state-specific linear time trends; ε is the error term; and the β_i are parameters to be estimated. The focus of our analysis is β_1, which measures the difference in the outcome variable between households in joint-custody versus sole-custody states.

We assume that the variation in custody reform across states and time is plausibly exogenous with respect to households' work time decisions, an assumption which is supported by historical accounts (Jacob 1988) and the uniformity of the reforms across states and time (Halla 2011). The primary source of potential omitted variable bias in our analysis enters at the state level (Angrist and Pischke 2009). The inclusion of state fixed effects, time-varying state-level controls, and the state-specific linear trends accounts for factors that are correlated with custody reform and related to the outcome variable. Second, we examine whether the trends in market and household work for married mothers and fathers in late-adopting states (between 1980 and 1992)

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[10] The time-varying state-level control variables include per-capita income, the female labor force participation rate, whether a universal child-support withholding law is in place, the dollar value of the maximum food-stamp benefit, whether a no-fault divorce law is in place, and whether a unilateral divorce law is in place. The coding for the no-fault divorce laws is from Ellman and Lohr (1998), and the coding for the unilateral divorce laws is from Gruber (2004).

converge to the trends in the outcome variables for married mothers and fathers in early-adopting states (during the 1970s). In Panel A, Figure 1 shows married mothers' average time allocated to market work prior to and after the first custody reform in 1973. Prior to the first custody reform, the trends between married mothers' time allocated to market work in early- and late-adopting states are similar, with both declining sharply prior to the start of the reforms. After reforms begin taking place in the 1970s, the trends diverge, with married women in early-adopting states working more relative to those in late-adopting states. However, in the latter part of our sample period, the trends between married mothers in early- and late-adopting states begin closing in the mid- to late-1980s, and they eventually converge to similar trend lines by the sample's end. In Panel B, Figure 1 shows the time that married mothers allocate to household work prior to and after the passage of the first custody reform. Similar to Panel A, it appears that married mothers' time allocated to household work followed similar trend lines in early- and late-adopting states prior to the first custody reform. Furthermore, the trends in household work between married mothers in early- and late-adopting states diverge in the 1980s, but they return to similar trend lines by the end of the sample period. If custody reform has a causal impact on time allocated to market and household work, one would expect the trends shown in Figure 1: similarities between early- and late-adopting states before reforms begin taking place, divergence in the middle part of the sample, and convergence toward the end of the sample.

5.   Results

In Table 1, we begin our analysis of custody reform's impact on the average time that married mothers and fathers devote to market and household work. In the first two columns, it is apparent that mothers and fathers take on different roles within the household, with fathers

devoting more time to market work and mothers devoting more time to household work. The same is true when the sample is partitioned by the prevailing child-custody laws in place across states. However, the relative time that mothers and fathers devote to market and household work differ across the two legal regimes. Relative to mothers in sole-custody states, mothers in joint-custody states devote more time to market work and less time to household work. The opposite is true for men: they work less in the market and more in the household in joint-custody states relative to sole-custody states. Overall, the total time that mothers and fathers allocate to the sum of market and household work is higher in joint-custody states relative to sole-custody states.

In Table 2, we present estimates for the impact of custody reform on married mothers' labor-force participation (columns 1 and 2), time allocated to market work (columns 3 and 4), time allocated to household work (columns 5 and 6), and total time devoted to the sum of household and market work (columns 7 and 8). We present two estimates for each outcome variable. The first estimate uses the PSID family weights, and the second estimate uses the inverse probability weights based on the estimated probability of being married. In columns 1 and 2, custody reform has a positive impact on the probability that married mothers participate in the labor market, but the estimated effects are not statistically different from zero.[11] In columns 3-8, we examine the intensive margin. In column 3, married mothers increase their time allocated to market work by 131 hours per year in reform states. The estimated impact of custody reform on annual hours worked remains positive and statistically significant in column 4, but the magnitude of the estimated effect is smaller when selection into and out of marriage based on the law change is

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[11] Nunley and Seals (2011) find statistically significant, positive effects of joint-custody reform on labor-force participation of married mothers. We also find positive, statistically significant effects of custody reform on married mothers' labor-force participation, albeit at the ten-percent level (results available upon request), when we include observations from married households who have missing information on one spouse. However, the results included in the paper omit husband-wife observations that do not contain information on the characteristics of both spouses. Our goal is to maintain the same covariates for all of the main results in the paper. The results are similar regardless of whether the sample of households has complete or incomplete information provided by the PSID.

taken into account for. In particular, married mothers in reform states allocate approximately 91 hours more to market work per year. The estimates in columns 5 and 6 suggest that custody reform does not affect the amount of time that married mothers allocated to household work. In terms of total hours supplied to market and household work, the estimate shown in column 7, which uses the PSID weights, indicates a statistically significant increase in total time allocated by married mothers in reform states. But when the inverse probability weights are used in column 8, no difference in total time spent on market and household work can be detected between married mothers in joint- versus sole-custody states.

In Table 3, we examine how custody reform affects married fathers' time allocated to market and household work. From column 2, custody reform tends to reduce the time that married fathers allocate to market work at the participation margin by about 1.7 percent. Additionally, the estimates shown in columns 6 indicate that annual hours allocated to household work by married fathers increase in states that adopt joint-custody laws. The estimates suggest that married fathers increase the amount of time allocated to household work by approximately 31 hours per year (column 3); 36 hours per year (column 4); 0.6 hours per week (column 5); and 0.8 hours per week (column 6). From columns 7 and 8, the total amount of time that married fathers devote to the sum of market and household work is unaffected by changes in child-custody laws.

In Table 4, we examine the time that mothers and fathers collectively devote to market and household work and the relative contributions of mothers and fathers to market and household work. The outcome variable in column 1 is the total amount of time that mothers and fathers devote to household work, while the outcome variable in column 2 is the total amount of time that mothers and fathers devote to market work. For both of these outcomes, we find no statistical significance regarding the impact of custody reform. In columns 3 and 4, we

investigate the relative contributions of mothers and fathers to household work. In column 3, custody reform increases the time that fathers devote to household work relative to mothers, but the effect is imprecisely estimated and is not statistically different from zero. In column 4, the share of household work completed by married mothers is examined and these figures indicate a reduction in their share of household work, but the estimated effect is not statistically significant. In column 5, we find that the ratio of fathers-to-mothers time allocated to market work declines by 10 percent in states that adopt joint-custody laws. In addition, the estimate shown in column 6 indicates that the share of market work completed by married mothers rises by 10 percent in states that reform their custody laws. In column 7, the ratio of fathers-to-mothers time allocated to the sum of market and household work is negative, indicating that fathers are devoting less time to total work in joint-custody states. In fact, the ratio falls by approximately 5 percent in reform states. In column 8, custody reform has a positive effect on the share of total work completed by mothers, but the estimated effect is not statistically different from zero.

6. Robustness Checks

In addition to examining only married couples, we have also restricted the sample to include only households with children. As a result, the estimates of custody reform's effect on labor-market and household-production outcomes could be biased if custody reform affects fertility or the timing of marriage with respect to fertility. To address this potential problem, we begin with a falsification exercise in which we restrict our sample to married couples *without* children to determine if joint-custody reform affects the time allocated to household and/or market work. In Table 5, the regression results from this sub-sample indicate that joint-custody reform has no statistically significant impact on the same set of outcomes shown in Table 4.

While it is reassuring that custody reform has no statistically significant effect on the market and household work decisions of spouses without children, it is important to establish what effects, if any, custody reform may have on fertility. The vast majority of couples with children, even in Denmark with the world's highest cohabitation rate, are married (Browning, Chiappori and Weiss 2011). Approximately 79 percent of individuals in our sample were married by at least the year before they had their first child, and 92 percent were married during or before the birth year of their first child. Hence, it is likely that correcting for sample selection bias along the marriage dimension would mitigate any selection effects associated with fertility.

To investigate the possibility that selection bias arises through the reform's impact on fertility, in Table 6 we report estimates for the impact of custody reform on the probability that a couple is married in a given year and various fertility outcomes. Columns 1, 2 and 3 present results for the full sample of individuals (i.e. those who were 18-45 years old in a given survey year and unmarried and childless before 1972), and columns 4, 5 and 6 show the results for husband-wife observations. The estimate in column 1, which is from the model used to generate the inverse probability weights for Tables 2, 3 and 4, indicates that custody reform reduces the likelihood that a couple is married in a given survey year, and this estimated effect is statistically different from zero.[12] However, custody reform is statistically unrelated to the probability of having a child (column 2) or multiple children (column 3). For the sample of husband-wife observations, we find no statistical link between custody reform and the probability of having a child (column 4), having multiple children (column 5), or being married before the birth of the first child (column 6).

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[12] In this paper, we do not explicitly model "marriage" or "divorce"—an analysis that would incorporate family dynamics such as marriage duration in the case of divorce. The negative result on the probability of being married is at odds with Halla (2011), who finds that marriage rates increase and that no change in divorce rates occurs in states that adopt joint-custody laws. However, we are only concerned with the reform's impact on the probability an individual is a part of a married household in a given survey year.

The falsification exercises and the inverse probability weighting procedure support the notion that the effect of custody reform is captured by our empirical analysis. Although we find that custody reform affects the probability of being married, we are able to account for such selection effects by using the inverse probability weighting procedure. Likewise, we find no evidence that custody reform is related to fertility outcomes or the time allocation decisions of couples without children. Taken together, the findings from our robustness checks mitigate concerns that our primary results on household behavior are influenced by selection bias.

7. Conclusions

With a panel of husband-wife observations from the PSID, we estimated the effect of joint-custody reform on the market- and household-labor decisions of married mothers and fathers. We exploit the longitudinal feature of the PSID to control for potential bias associated with selecting the sample on the basis of marriage. In addition, we use the variation in the timing of custody reforms across states as a source of exogenous variation with which to identify how the prospect of shared child custody affects within-marriage behavior.

We find that married mothers increase their labor market hours by approximately ten percent (about 90 hours annually) in response to custody reform. By contrast, custody reform increases the time that married fathers allocate to home production by approximately nine percent (about 30 hours annually). Married mothers' time allocated to household work and married fathers' time allocated to market work are unaffected by custody reform. However, we find no statistically significant effect of joint-custody reform on the collective time devoted to the sum of market and household work or the relative contributions of mothers and fathers to the sum of market and household work. These findings support the notion that custody reform induces a reallocation of

time within marriage, with mothers working more in the market and fathers working more in the home.

Previous work has shown that joint-custody reform altered the allocation of family resources (i.e. decreased investment in child quality and increased mothers' labor supply) to reflect the preferences of fathers to a greater extent—the beneficiaries of increased bargaining power as a result of the law change (Nunley and Seals 2011). Because our results suggest that joint-custody reform may simply have altered the division of labor in the household, we challenge this bargaining-power interpretation, as it is difficult to reconcile our findings with existing models of intrahousehold distribution. Within a bargaining framework, one would expect custody reform, which gives fathers more power over intrahousehold allocation decisions, to reduce the time that fathers allocate to market and household work. By contrast, the shift in bargaining power away from mothers should lead to an increase in the time that they allocate to market and household work.

Our findings are more easily reconciled with a simple examination of how custody reform changes the within-marriage investment incentives facing mothers and fathers. The move to a presumption of joint child custody from a maternal-preference regime implies a reduction in the expected time that mothers would allocate to household work (e.g., childrearing) following divorce. Such a legal change may have the opposite effect on fathers' time allocation: they may invest more time in the development of household-specific skills based on the anticipation of allocating more time to childrearing and other types of household work in the event of divorce.

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Table1: Summary Statistics for Annual Hours of Market and Household Work for Married Mothers and Fathers

	Full Sample		Joint Custody		Sole Custody	
	Mothers	Fathers	Mothers	Fathers	Mothers	Fathers
Annual Hours of Market Work	962.1 (863.5)	2075.4 (742.1)	988.8 (863.8)	2063.8 (757.0)	900.9 (860.1)	2101.9 (706.0)
Annual Hours of Housework	1362.6 (846.1)	414.7 (439.6)	1353.8 (858.2)	429.6 (443.6)	1384.2 (815.5)	378.2 (427.7)
Total Hours of Work	2330.7 (925.3)	2493.0 (805.3)	2347.5 (931.3)	2495.7 (811.6)	2289.6 (909.5)	2486.2 (789.9)
Obs.	14,158	14,128	10,001	9977	4157	4151

Notes: Sample means and standard deviations (in parentheses) are weighted by the inverse probability of being married and in the sample for a given year.

Table 2: The Effects of Joint-Custody Reform on Married Mothers' Time Allocated to Market and Household Work

	Participation		ln(annual hours market work)		ln(annual hours housework)		ln(total annual hours work)	
	PSID Weights	Inverse Prob.	PSID Weights	Inverse Prob.	PSID Weights	Inverse Prob.	PSID Weights	Inverse Prob.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Joint Custody	0.0295	0.0134	0.1370**	0.0950**	0.0179	0.00662	0.0552***	0.0302
	(0.0253)	(0.0211)	(0.0595)	(0.0470)	(0.0242)	(0.0270)	(0.0180)	(0.0248)
Obs.	13,204	13,967	9553	10,040	12,299	13,058	12,307	13,065
R^2	0.0479	0.0612	0.0731	0.0710	0.0672	0.0815	0.0446	0.0455

Notes: Inverse probability weighting procedure (Wooldridge 2002) is used to calculate OLS coefficients. Standard errors (in parentheses) are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 3: The Effects of Joint-Custody Reform on Married Fathers' Time Allocated to Market and Household Work

	Participation		ln(annual hours market work)		ln(annual hours housework)		ln(total annual hours work)	
	PSID Weights	Inverse Prob.	PSID Weights	Inverse Prob.	PSID Weights	Inverse Prob.	PSID Weights	Inverse Prob.
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Joint Custody	-0.00534	-0.0174[*]	0.0117	-0.0214	0.0428	0.0739[**]	0.00863	-0.0168
	(0.00448)	(0.00988)	(0.0148)	(0.0264)	(0.0318)	(0.0357)	(0.0157)	(0.0275)
Obs.	13941	13967	13635	13652	11224	11234	12976	12999
R^2	0.0393	0.0608	0.0586	0.0839	0.0298	0.0199	0.0647	0.0928

Notes: Inverse probability weighting procedure (Wooldridge 2002) is used to calculate OLS coefficients. Standard errors (in parentheses) are clustered at the state level. [*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$

Table 4: The Effect of Joint Custody on the Distribution of Work Hours of Married Parents

	Total Housework	Total Market Work	Father-to-Mother Housework Ratio	Mothers' Share of Housework	Father-to-Mother Market Work Ratio	Mothers' Share of Market Work	Father-to-Mother Total Work Ratio	Mothers' Share of Total Work
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Joint Custody	0.0250	-0.0140	0.0609	-0.0160	-0.0998*	0.102**	-0.0460*	0.0210
	(0.0251)	(0.0222)	(0.0475)	(0.0129)	(0.0542)	(0.0407)	(0.0270)	(0.0140)
Obs.	13,058	13,797	11,206	13,030	9872	10,022	12,977	13,030
R^2	0.0678	0.104	0.0392	0.0358	0.0699	0.0685	0.0383	0.0356

Notes: Inverse probability weighting procedure (Wooldridge 2002) is used to calculate OLS coefficients. Standard errors (in parentheses) are clustered at the state level. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: The Effect of Joint Custody on the Distribution of Work Hours of Married Households without Children

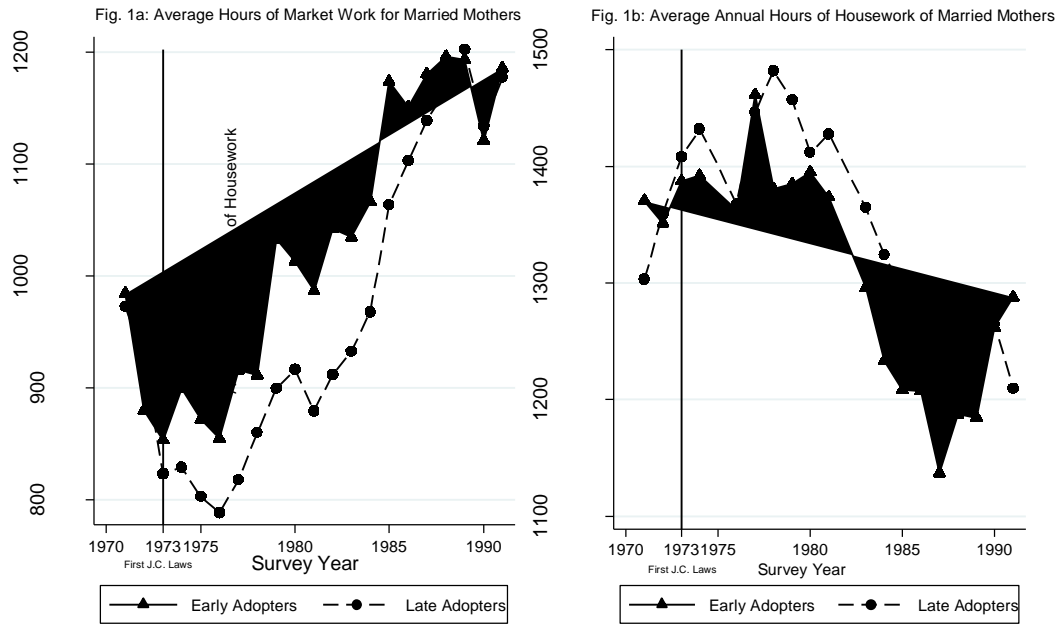|	Total Housework	Total Market Work	Father-to-Mother Housework Ratio	Mothers' Share of Housework	Father-to-Mother Market Work Ratio	Mothers' Share of Market Work	Father-to-Mother Total Work Ratio	Mothers' Share of Total Work
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Joint Custody	0.00549	0.00472	0.0427	-0.00464	0.0687	-0.0464	0.00310	-0.00391
	(0.0644)	(0.0422)	(0.116)	(0.0329)	(0.0789)	(0.0504)	(0.0528)	(0.0297)
Obs.	1938	2147	1789	1933	1983	2004	1932	1934
R^2	0.101	0.160	0.0835	0.0937	0.0944	0.0992	0.0608	0.0734

Notes: Inverse probability weighting procedure (Wooldridge 2002) is used to calculate OLS coefficients. Standard errors (in parentheses) are clustered at the state level. [*] $p < 0.10$, [**] $p < 0.05$, [***] $p < 0.01$

Table 6: The Effect of Joint Custody on Marriage and Fertility

	Full Sample			Husband-Wife Sample		
	PSID Weights	Inv. Prob.	Inv. Prob.	Inv. Prob.	Inv. Prob.	Inv. Prob
	Pr(Married=1)	Pr(Births>0)	Number of Children	Pr(Births>0)	Number of Children	Married before First Birth
	(1)	(2)	(3)	(4)	(5)	(6)
Joint Custody	-0.0243**	-0.0029	-0.0018	-0.0061	-0.0040	0.0066
	(0.0108)	(0.0073)	(0.0047)	(0.0087)	(0.0060)	(0.0144)
Obs.	58,447	41,319	41,351	16,052	16,119	13,659

Notes: Marriage and single birth outcomes are estimated by probit. Multiple births are estimated with ordered logit. Coefficients are reported as marginal effects. Inverse probability weighting procedure (Wooldridge 2002) is used to calculate OLS coefficients. Standard errors (in parentheses) are clustered at the state level. $^{*}p < 0.10$, $^{**}p < 0.05$, $^{***}p < 0.01$

Hours Worked by Married Mothers

Fig. 1a: Average Hours of Market Work for Married Mothers

Fig. 1b: Average Annual Hours of Housework of Married Mothers

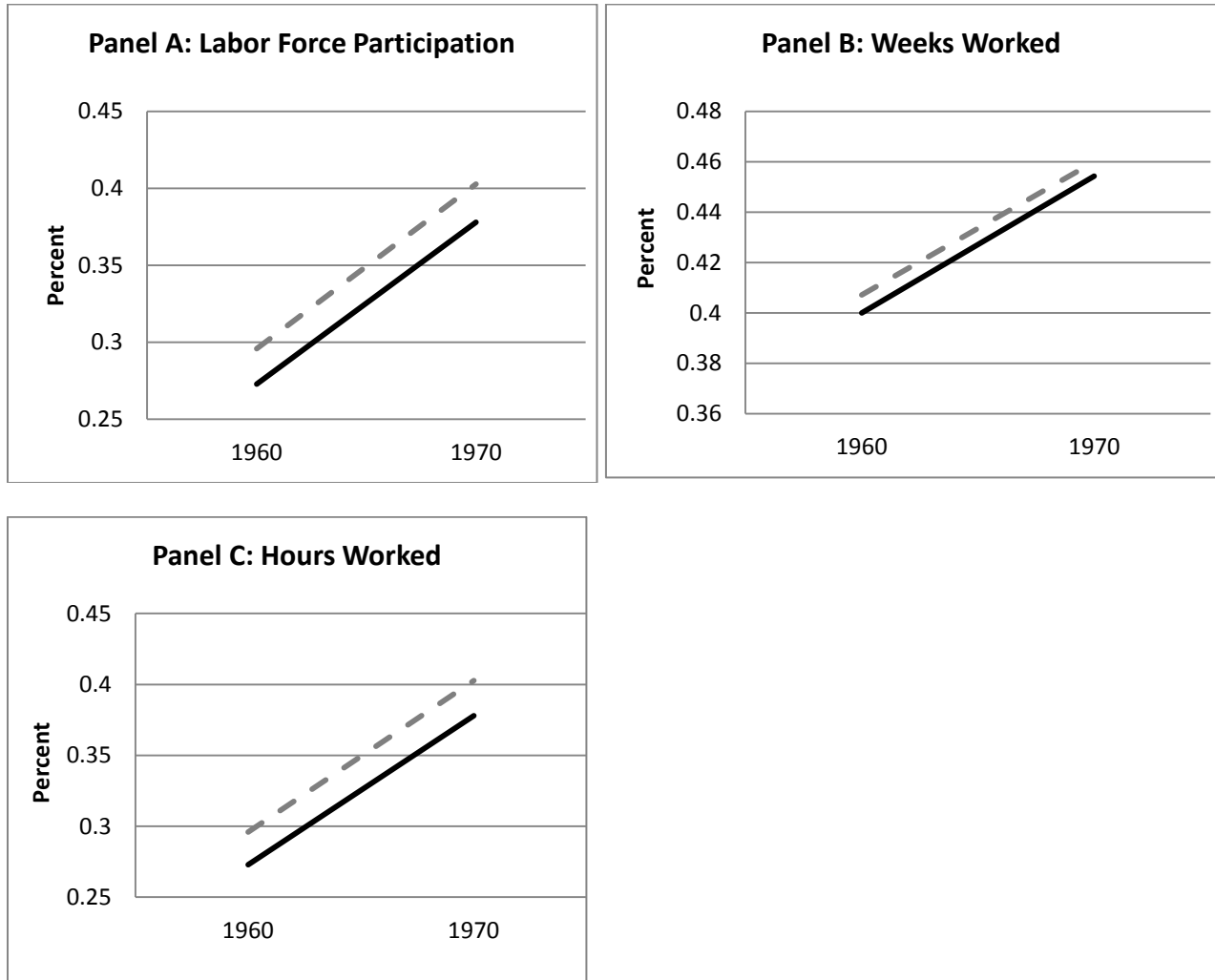Notes: Early Adopters--Joint Custody prior to 1980. Late Adopters--Joint Custody 1980-1992.

Appendix

To further assess the validity of the exogeneity of custody reform, we begin by investigating whether preexisting differences between the treatment and controls groups exist. For this purpose, we rely on data from the decennial Censuses, which allows us to examine the labor-force participation, weeks worked and hours worked of married mothers and fathers prior to the custody reforms taking place. In particular, we compare labor-market outcomes for married mothers who will be exposed to joint-custody reform and those who will not be exposed to joint-custody reform in the next decade. Appendix Figure A1 shows the preexisting trends in labor-market outcomes for married mothers in states that will adopt joint-custody laws between 1970 and 1980 and those that will not adopt joint-custody laws between 1970 and 1980. Between 1960 and 1970, the "to-be-treated" (black line) and the "not-to-be-treated" (dashed grey line) groups follow similar trend lines in terms of labor-force participation (Panel A), weeks worked (Panel B), and hours worked (Panel C). Preexisting trends in the outcome variables for married mothers in states that will and will not adopt joint-custody laws between 1980 and 1990 are shown in Appendix Figure A2. From 1960 until 1980, the "to-be-treated" (black line) and "not-to-be-treated" (dashed grey line) groups follow similar trend lines for each labor-market outcome. Taken together, the evidence presented in Figures A1 and A2 support the notion that married mothers in treatment and comparison states supply their labor at similar rates prior to the custody reforms taking place.[13]

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[13] We examined analogous trends in these labor-market outcomes for married fathers, and there is no evidence of preexisting trends between married fathers who will be exposed to joint-custody laws and those who will not be exposed to joint-custody laws. In the interest of brevity, we omit these figures from the manuscript, but they are available upon request.
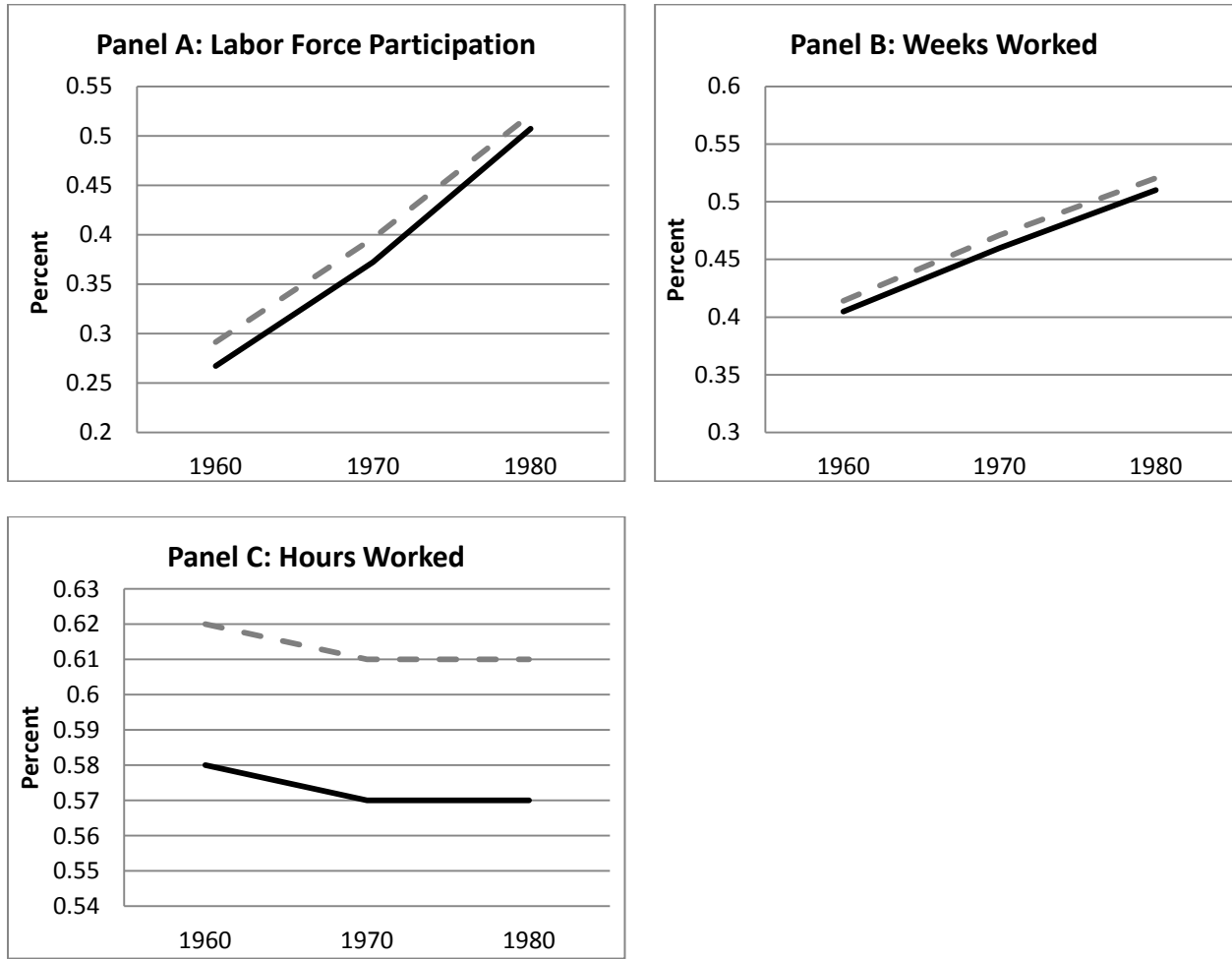
Figure A1: Preexisting Trends in Labor Market Outcomes for "To-be-Treated" Married Mothers and "Not-to-be-Treated" Married Mothers

Panel A: Labor Force Participation

Panel B: Weeks Worked

Panel C: Hours Worked

Notes: Panel A shows the labor force participation rates of married mothers, which is an indicator variable that equals one when the married mother participates in the labor market and zero otherwise; Panel B shows the percentage of married mothers who work 52 weeks per year; and Panel C shows the percentage of married mothers who work 35 or more hours per week. The black line represents married mothers who live in states that will be treated between 1970 and 1980, while the dashed grey line represents married mothers who live in states that will not adopt joint-custody laws between 1970 and 1980.

Figure A2: Preexisting Trends in Labor Market Outcomes for To-be-Treated Married Mothers and Not-to-be-Treated Married Mothers

Notes: Panel A shows the labor force participation rates of married mothers, which is an indicator variable that equals one when the married mother participates in the labor market and zero otherwise; Panel B shows the percentage of married mothers who work 52 weeks per year; and Panel C shows the percentage of married mothers who work 35 or more hours per week. The black line represents married mothers who live in states that will be treated between 1980 and 1990, while the dashed grey line represents married mothers who live in states that will not adopt joint-custody laws between 1980 and 1990. Note that observations on married mothers who lived in states that adopted between 1970 and 1980 are not included in these statistics.