From Maternal Preference to Joint Custody: The Impact of Changes in Custody Law on Child Educational Attainment

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Abstract

This paper studies the impact of the regime shift from maternal preference to joint custody, in custody dispute adjudication during the 1980s using the one percent Integrated Public Use Microsample Series (IPUMS) of the decennial Census for the decades from 1970 to 1990. We focused on children between the ages of 15 to 18, who were living with a single divorced or separated parent and children of intact families. Educational attainment was used to quantify child outcomes. Using cross state and year variation in the timing of adoption of those laws, we found strong evidence that the children of these single parent households, living in states which adopted joint custody, had a higher probability of high school graduation by age 18. On the other hand, we found that children from intact families suffered a decrease in probability of high school graduation by age 18. This suggests that the law has important unintended negative effects that had been thus far neglected. The result on children from intact families was replicated using the IPUMS Current Population Survey Sample, and results concur with the findings from the census dataset. The results were also replicated when we relax the distributional assumption using stochastic dominance techniques.

Keywords: joint custody, educational attainment, family structure

JEL Classification: J12, J13, K19

The surge in U.S. divorce rates in the 1970s has drawn attention from fears that it signals an erosion of traditional family values. A vast body of research in economics and sociology have focused their efforts on its implications on children from divorced families. However, the treatment of children in these families is addressed by child custody laws, which has changed over the past two decades. Current research on the impact of custody laws have focused on its dedicated impact on divorced families based on court records (See Brown et al. (1997); Cancian and Myer (1998); Maccoby and Mnookin (1997); Allen and Brinig (2005)). However, economic theory informs us that exogenous events, such as regime shifts in family laws that alter bargaining threat points may affect intra-household allocation. This in turn may have implications on intact families which has not been explored.

From the 1950s upto the 1980s, most states practised the protection of a mother's rights in custody dispute, under the *tender year doctrine*. This practice allocated custody of the children to mothers, commonly referred to as *maternal preference*, if the minors were below the age of seven (Mason (1999)). In 1979[1], California led the way when it amended its custody dispute resolution law to one not based on the gender of the parent, and which deferred to joint custody arrangements. Today, only 7 states do not have this law, namely, Nebraska, New York, North Dakota, Rhode Island, Vermont, West Virginia, and Wyoming (See Table 1).

The impact of the law's adoption is exemplified in California, where joint custody decisions rose from 2.2% of all final decrees in 1979, to 13% in 1981 (Maccoby and Mnookin (1997)). The breadth of influence these laws possess was widened when divorced parents were permitted to reevaluate custodial arrangements made prior to the adoption of joint custody laws, obtaining fresh judgements based on current application of the new laws (Mason (1999)).

This has engendered debate over the impact of the regime shift on divorced parent families. Weiss and Willis (1985), Brinig and Buckley (1998a), and Del Boca and Ribero (1998) argue that it ensures more forthcoming child support payments from the noncustodial parent

thereby softening the impact of divorce, if joint custody is the correct arrangement given the family history. On the other hand, detractors contend that joint custody, because it entails regular transfer of children between two distinct households and regular interaction between divorced parents. This may engender more dispute, preventing swift adjustment by the children to their new environment within a divorced parent household (Mason (1999)). Granted the laws are guidelines in the adjudication of custody disputes, the net effect of the law's adoption on child outcomes among children from divorced families is an empirical question we will address here.

An often overlooked question in studies of the impact of child custody laws is the possible effect on children from intact families. Rasul (2004) argued that the optimal custody arrangement for each family is dependent on the relative parental valuation of child quality. For relationships where one parent's valuation is greater than the other, sole custody to the high valuation spouse would be optimal. On the other hand, joint custody would be optimal for families characterized by similar spousal valuations. The ability to choose different custodial arrangement, free of gender bias could yield several outcomes, depending on the distribution of joint parental valuation in the populace. If the joint distribution is skewed towards higher maternal valuations, we should not see any changes to child quality under the new regime. However, other realizations could yield changes to child outcomes depending on parental investment choices. We will investigate the possibilities in this paper.

This paper studies the impact of the change in child custody laws on children of divorced, separated and intact families. We use the one percent Integrated Public Use Microsample (IPUMS) of the decennial Census for the decades between 1970 and 1990. Attention is focused on children between the ages of 15 to 18. We exploit the cross state and year differential in the timing of adoption to identify the causal effect on children's educational attainment. The use of educational attainment is motivated by its ability to measure a child's ability in relation to her peers across time. Further it is a manifestation of parental investment choice. By focusing on children within this age range, we isolate children that

would have lived through the various legal regime switches, and yet before their emancipation.

The main results are as follows. The probability a child achieves grade 12 or higher by age 18 rose in states which adopted joint custody laws, for children of divorced and separated families. This lends support to the arguments put forth by the proponents of the law. Second, the probability of the same outcome fell among children of intact families, in states which adopted the laws. The latter point is the key finding of the paper. This suggests that there may be indirect effects on parental investment choices which affected the probability of high school graduation, and consequently the overall welfare of their children. Both findings remain true after controlling for effects due to the No-Fault divorce revolution of the 1970s. We also examined the same question using the stochastic dominance test (Anderson (1996)), and obtained the same conclusions.

This paper contributes to the current literature in presenting additional evidence that affirms the direct effects of joint custody law adoption (Brinig and Buckley (1998a); Del Boca and Flinn,1995; Del Boca and Ribero (1998)). But the main thrust of this paper is to redirect attention to the possibility of unintended consequences on intact families.

The paper is organized as follows. We first describe the history of child custody laws, followed by a discussion of theoretical predictions regarding the laws' impact. In section 2, we describe the data, the estimation model and identification strategy. Section 3 presents the estimation results, followed by robustness checks, while section 4 explores the laws' compositional effects. This is followed by a discussion of the results in section 5, and the conclusion.

1. Legal Amendments and Theoretical Implications

1.1. Definitions

There are two facets to Joint Custody, *Joint Physical Custody and Joint Legal Custody.* The former pertains to the division of physical custody of children, determining the amount time each parent spends with them. The latter establishes each parent's rights in shaping

the course of the children's development, in issues such as religion, health and education.

In the following description, we will refer to divorce laws which considers divorce petitions only if it was mutually agreed upon by both spouses as *bilateral divorce*, while *unilateral divorce* does not require any agreement. *Fault divorce* refers to divorce laws which considers divorce petitions only on grounds such as infidelity and physical abuse, while *no-fault divorce* negate the grounds in any petition.

1.2. Child Custody Law

In 1979, when California amended its custody law, it precipitated a regime shift towards preference for joint custody throughout the United States. It has been suggested that this was the culmination of the Feminist Movement of the 1970s. Maternal Preference represented an archaic view of women within a patriachal society, as home makers. The immediacy of the impact is perhaps exemplified in California where the application of these new standards permitted custody orders made prior to 1980 to be reviewed and modified according to the new standards[2] (Mason (1999)).

Although the idea of joint custody has been acknowledged since 1917, and as recent as 1974 (Bratton (1981)), the legislation into state laws represents an instruction by the legislature that this option be considered carefully. Some states have made it a preferential arrangement, such that if not granted, the onus is on the courts to provide the reason why it was not.[3]

Our coding is based on a careful review of custody laws of each state, and tracing through its various amendments to ensure consistency. We distinguish custody laws which consider joint custody an option only if parents are in agreement, from one which gives due consideration on application by a parent[4]. Based on the distinction, the year of adoption (See table 1) and implications are different. For example Wisconsin which had permitted joint custody awards since 1978, required consent by both parties. This position was rescinded only in 1988. Brown et al. (1997) reporting on their study using the Wisconsin Court Record Data-

base (WCRD), noted that between 1986-1987, joint custody judgements constituted 7.3% of final decrees. However, this rose to 14.2% by 1991-1992 following the change.

1.3. No-Fault Revolution of the 1970s & other intervening legal amendments

All this had occurred subsequent to the *No-Fault divorce revolution* of the 1970s, when states permitted the petition for divorce without concurrence between the spouses, *unilateral divorce*, nor the burden of prove of fault. Its effect on both marriage, divorce rates, and consequent child wellbeing has been examined extensively. Brinig and Buckley (1998b), Friedberg (1998), Gruber (2004) and Méchoulan (2005), found that divorce rates were raised in its wake. Consequently, marriage rates, educational attainment and labor market attachment in the cohorts that grew up in its shadow fell (Gruber (2004); Rasul (2003)). However, the merits of unilateral divorce, or divorce in general, were realized in lower domestic violence and suicide rates related to marriage (Stevenson and Wolfers (2000)). This means unilateral divorce might have affected the stock of divorced and separated families we see in our sample. Without considering this fact, we might falsely attribute changes in child outcomes to the adoption of joint custody.

A growing area of research is in the effect changes in child support payment enforcement[5] has had on single mother families. In 1984, the U.S. federal government enacted the *Child Support Enforcement Amendments of 1984*. The significance of this federal initiative lay in the extension of collection services by the state welfare agencies to non-AFDC (Aid to Families with Dependent Children) families. The Act now permitted liens against real property, and the withholding of state and federal tax refunds. The *enmasse* adoption of these amendments by the states were goaded by new incentives which raised the gains retained from efficient collection by state welfare agencies. This resulted in increased participation by non-AFDC families, which now dominate the system (Crowley (2003)). However, this remains a federal initiative, which will not explain cross state variations in the data[6].

1.4. Theoretical Implications of Custody on Child Outcomes

The implications of differing custody arrangements on a non-custodial parent's willingness to make child support payments was examined by Weiss and Willis (1985). They argued that proximity within a marriage overcomes the *free-rider* problem in investments in marital public goods, the children. However, in the divorce state these investments are non-verifiable. This lost of control then induces a lack of willingness in making child support payments. Given each spouse maintains a different household, costs are involved in maintaining contact with the children. Even if the non-custodial parent is willing to gain more custody or visitation in exchange for support payments, these costs may be prohibitive. Nonetheless, if these costs are small, they suggest that conditional transfers in return for visitation or custody would result in pareto improvements. Then the regime shift that aims at encouraging parental involvement in the divorce state should see better child outcomes among adopting states. This is supported by Brinig and Buckley (1998a) who found that child support receipts rose among adopting states. While Del Boca and Ribero (1998) found evidence of greater private transfers among joint custody families. We will add support by showing that educational attainment among children of divorced families are higher on average.

Rasul (2004) extended this analysis by examining parental choice in investment and custody in the event of divorce, within marriage. Principally, there are two opposing mechanisms relating investments in children and custody. As child quality is assumed to be a public good in both divorce and intact states, allocating custody to a high valuation spouse raises that spouse's incentive to invest during marriage, which raises both spouses' expected payoff. However, own returns to investment is raised with more of own custody. Hence, raising custody to a spouse in the divorce state does not trivially mean her investments will be raised. This creates three distinct sets of spouses for whom optimal custodial arrangements would differ. At the extremes are spousal relationships described by sole custodial arrangements. Here the spouse with the higher valuation for child quality obtains custody and the relationship between investment incentives and custody for her is positive (But neg-

ative for the other spouse). Only for spousal relationships where joint custody is optimal, would incremental custody to either raise their investments.

To understand the transition from the status quo of maternal preference, and using the above arguments, the move to joint custody may see several possible outcomes, depending on the joint distribution of spousal valuations. If relationships are characterized by higher relative valuations for children by mothers, the optimal custodial arrangement would still favor mothers, leaving child outcome unaffected. For the group where paternal custody is optimal, the shift in custodial arrangement granting them their rights would raise the child's outcome. However, for families where joint custody is optimal, the withdrawal of a mother's investment and an increase in the father's, leaves child outcome indeterminate compared to the status quo. The outcome depends on whether the withdrawal from the mother dominates the increase in investments from the father. Studies by Brown et al. (1997), and Maccoby and Mnookin (1997) suggest that there are substantial increases in the number of joint custody arrangements. If the majority of households are characterized by higher maternal valuations, we should not see much increase in joint custodial arrangements or changes in child outcomes. The sign of the average impact on children of intact families is an unexplored question we will answer.

2. Empirical Analysis

The data is derived from the one percent Integrated Public Use Microsample (IPUMS) of the decennial Census for the decades from 1970 to 1990. We use the household data, including observations from all 50 states and include the District of Columbia. All the samples used are unweighted. Only observations whose parents are born within the above states are included in the sample. Within this group, we focus our attention on children between the ages of 15 to 18 from single divorced and separated parent, and intact families to reduce bias due to emancipation. Although the data discerns between divorced and separated families, this differentiation does not exist in theoretical discussions. For this section and the following,

we will refer to *single divorced and separated parent families* as *single parent families.* Since our primary focus is on children within wedlock, our sample excludes children of unmarried parents. Further, since the data does not indicate custodial arrangements and children living with a single father constitutes a small proportion, we do not distinguish between children living with a single mother or father. Although this will increase our variance, it also means that should the estimates yield statistical significance, the veracity of the findings would be emphasized.

2.1.   Descriptives

The gradual expansion of joint custody through the states has meant that more households have come under the influence of the law. Figure 1 shows the growing coverage of joint custody law since 1979, with respect to children under 14 years of age[7]. Dropout rates among youths between the ages of 16 to 24 (See figure 2) also fell during this period. The greatest change came among youths from low income families, from about a 28 percent dropout rate in 1975, to 21 percent in 2000.

Examining the mean educational attainment by age 18 for each family type within our sample in figure 3, we see a general upward trend in educational attainment since the 1970s across the different family structures (The attainment of children from widowed families are included for comparison against children from single parent families). This is the result of the widening compulsory school ages and improvement in school quality, which has been studied extensively (See Angrist and Krueger (1991); Angrist and Krueger (1992); Card and Krueger (1992a); Card and Krueger (1992b)). However, this trend was broken by a spike in 1990. As expected, children from intact families have out-performed their peers from other family structures. However, the difference in the mean between children from single parent families, and those from intact families has diminished. In fact, the mean for children of single parent households exceeded the performance of children from widowed parent households in the 1980s. Figure 4a and 4b separates the observations into states which adopted joint custody,

and states which did not. Interestingly, the graph of the former replicates figure 3, with the gap between children of single parent and intact families closing. However, in figure 4b, the rate of improvement of children in both family structures track each other in a parallel path.

The immediacy of the impact of joint custody law adoption, and its timing and coverage suggests a direct correlation. Table 2 examines the difference in children's educational attainment between adopting and non-adopting states. Focusing on children aged 18, both sets of children from single parent households in adopting and non-adopting states improved since 1980. However, the rate of improvement is marginally greater among children living in adopting states, concurring with expectations. Examining children of intact families, we see a similar improvement over time. However, this growth is higher among non-adopting states instead.[8]

As an alternative explanation to the stylized facts, it is possible that the Feminist Movement was stronger in adopting states. If so, women born into the movement, would have a higher educational attainment, and consequently greater income, quite apart from the influence of child custody judgments, and improved child support payment enforcement. In this case, any improvement in child educational attainment among children of single parent households would be a manifestation of higher initial investment in offspring, and perhaps better genetic endowment. Table 3 examines this possibility, making the comparison between single (divorced and separated) women from states which adopted joint custody, and states which did not. Although outcomes in terms of educational attainment, income, and labor participation of these women from adopting states were consistently higher in 1980, the gap had closed by 1990. In fact, the rate of increase for women from non-adopting states were higher, which does not lend credence to the Feminist Movement line of argument. Note that this pattern is also true among mothers from intact marriages.

2.2. Methodology

A state is an adoption state if the law is in place the year before the census year. We have twelve states which had not adopted joint custody by 1989 based on the definition used, to which we include the District of Columbia, which is the control group. The treatment group consists of the remaining thirty eight states[9].

Identification of the impact of joint custody legislation comes from the variation in child educational attainment across the years, and states due to differential timing in adoption. The basic reduced form equation is as follows,

$$y_{ifast} = \Gamma X_i + \alpha Joint_{st} + \theta_1 A_a + \theta_2 Y_t + \theta_3 S_s + \theta_4 F_f + \theta_5 (A_a \times Y_t) + \epsilon_{ifast} \qquad (1)$$

y_{ifast} is the latent child quality variable for child i, in family structure f, of age a, living in state s and year t. X_i is a vector of child i's personal and family characteristics consisting of number of siblings and parental educational attainment indicator variables, and total family income. A_a, Y_t, S_s and F_f ($F_f = 1$, if the child is from a single parent family, and 0 otherwise) are the full set of age, year, state and family structure indicator variables respectively, and $A_a \times Y_t$ is the interaction of the age and year indicator variables. $Joint_{st}$ is the joint custody adoption indicator variables, and its coefficient is interpreted as the reduced form effects on child quality from permitting joint custody, through the law's effect on parental investment.

The model falls short if we wish to distinguish between the possible differential in direction of impact on intact and single parent families. To model that aspect, we interact $Joint_{st}$ with F_f. The regression is then,

$$
\begin{aligned}
y_{ifast} \;=\; & \Gamma X_i + \alpha Joint_{st} + \beta(Joint_{st} \times F_f) \\
& + \theta_1 A_a + \theta_2 Y_t + \theta_3 S_s + \theta_4 F_f + \theta_5 (A_a \times Y_t) + \epsilon_{ifast} \qquad (2)
\end{aligned}
$$

We use the IPUMS coded educational attainment, g_{ifast}, as the realization of the latent

child quality. The coding of the educational attainment are as follows.

$$g = \begin{cases} 1 & \text{if preschool or had no education} \\ 2 & \text{if grade 1 to 4} \\ 3 & \text{if grade 5 to 8} \\ 4 & \text{if grade 9} \\ 5 & \text{if grade 10} \\ 6 & \text{if grade 11} \\ 7 & \text{if grade 12} \\ 8 & \text{if 1 to 3 years of college} \\ 9 & \text{if more than 4 years of college} \end{cases}$$

Since these are just ordered responses, we estimate the above models using ordered probit[10]. If the dependent variable, educational attainment, were for each grade, we could simply perform least squares, and the coefficient of interest would be the usual difference-in-difference estimator, and is interpreted as the change in the average number of years of education. We will however examine if the use of least squares alters our results using the March Current Population Survey data from IPUMS. The likelihood function of the ordered probit is:

$$\begin{aligned} l_i &= 1\,(g_i = 1)\log\left[\Phi\left(\eta_1 - \tilde{X}_i\Theta\right)\right] + \sum_{j=2}^{8} 1\,(g_i = j)\log\left\{ \begin{array}{c} \Phi\left(\eta_{j+1} - \tilde{X}_i\Theta\right) \\ -\Phi\left(\eta_j - \tilde{X}_i\Theta\right) \end{array} \right\} \\ &\quad + 1\,(g_i = 9)\log\left[1 - \Phi\left(\eta_9 - \tilde{X}_i\Theta\right)\right] \end{aligned} \tag{3}$$

where Φ is the standard normal distribution function, $\tilde{X}_i$ is the vector of variables for child i, Θ is the vector of coefficients, and η_j are the threshold parameters. The marginal impact we report is for the probability a child of age 18 attaining grade 12 or higher[11]. That is

$$\sum_{j=7}^{9} \left[\widehat{\Pr}\left(g = j|\overline{\tilde{X}}, joint_{st} = 1\right) - \widehat{\Pr}\left(g = j|\overline{\tilde{X}}, joint_{st} = 0\right)\right]$$

where $\overline{\widetilde{X}}$ is the vector of means of the variables.

3. Impact of Joint Custody on Child Attainment

3.1. Baseline Results

Table 4 presents the baseline results, without controlling for differences in family structure. The first row for each variable of interest is the estimate of the coefficient of interest. The robust standard errors corrected for heteroscedasticity are in brackets. The marginal change in the probability of a child of age 18 attaining a grade greater than or equal to grade 12 are in braces. The probability of attaining the same outcome if joint custody was not adopted is above each column, $\Pr\left(g \geq 7|\overline{X}, Joint_{st} = 0\right)$. Both the predicted probability and marginal impact are calculated at the mean of the covariates, $\overline{\widetilde{X}}$.

Columns 1 and 2 are the regression of child educational attainment on joint custody law using all the aforementioned covariates, with column 2 including state specific trends. The result of column 1 says that the probability a child, from a state which had adopted joint custody, attaining grade 12 or higher by 18 was on average 2.5% lower than another from a state which had not. The inclusion of state specific trends in column 2 yielded a 3% reduction, albeit the estimate is not significant. Although the inclusion of state specific trends did not yield any significant increase in predictive power, likelihood ratio test rejects the restriction that there are no trends.

The above regressions assumes that there is no differential in impact by length of exposure to the law. The next question then is if there are differences in impact by exposure. Columns 3 to 6 addresses the exposure differential by grouping states into four and five years exposure intervals. Columns 3 and 5 does not control for trends, while columns 4 and 6 does. From column 3, note that the marginal impact of joint custody adoption increases by duration of exposure, with the estimated decrease in probability of attaining grade 12 or higher by age 18 at 2.6% after a 5 to 8 years of exposure, while the reduction is 6.6% after more than 8 years of exposure. In column 4, although the impact is positive and significant after 1

to 4 years of exposure, the sign switched with the inclusion of trend, and is insignificant. The estimated negative marginal impact remains significant at the 5 to 8 years and more than 8 years ranges. Considering the wider 5 years range, although the observations from column 5 are qualitatively similar to those from column 3, the inclusion of trends induced the coefficient estimate for more than 10 years of exposure to become positive, and statistically insignificant. This is because this range has observations from a single state only, Iowa.[12]

3.2. Differential Impact by Family Structure

To isolate the impact of joint custody by the family structure, we now interact the joint custody variable with the family structure indicator variables. Our expectations, based on the findings of Brinig and Buckley (1998a), and Del Boca and Ribero (1998), are that children of single parent families should be better off. Table 5 presents these results. Columns 1 and 2 include all covariates, while columns 3 to 8 examine the robustness of the findings to other specifications. The marginal impact of joint custody reported above remains the same as before, but the marginal impact on the interaction of joint custody and family structure, interpreted as the impact of joint custody on children of single parent families, is the sum of the impact of joint custody on the probability of attaining grade 12 or higher by 18, and the direct impact of joint custody on children from single parent family. It is the net change in the probability for a child from a single parent family.

Weiss and Willis' argument suggests that the opportunity of exchanging custody or visitation for support payment could raise contribution from a non-custodial parent. Both columns 1 and 2 suggests that this is true. The net impact on a child of a single parent family from a adoption state would on average be 3.7% and 2.7% higher, without and with trend respectively. Columns 3 and 4 excludes all family characteristic variables except for parental education, decided prior to marriage. The measured impact for single parent children are 4.2% and 2.5% respectively. The results are similar in the other remaining columns.

For children of intact families, the effect on educational attainment is negative and sig-

nificant. If the joint distribution of parental valuations for child quality is dominated by families with higher maternal valuation, we should not see any significant impact in joint custody adoption. If instead the proportion of families characterized by equal valuations is significantly large, the result here is not surprising. The adoption of joint custody should imply withdrawal of investment from the mothers and an increase from the fathers for families with similar child valuations. If the impact of the withdrawal dominates, we would see a negative impact, otherwise the outcome should be an improvement. The results in columns 1 and 2 says that a child from an intact family living in a state with joint custody laws would have a decrease in the probability of attaining grade 12 or higher by 3.9% and 4.2% respectively. This is stronger than the positive impact on children of single parent households. Thus rather perversely, joint custody has reduced the attainment gap between children of intact and single parent households through a stronger, more negative influence on children of intact families. Back of envelope calculations, using the mid-point of the intervalled codes, yield the following translation into number of years of formal education. Children from intact families would have on average 0.034 years less years of education, while children from single parent families have 0.022 years more years of education.

Examining the robustness of the results to differing specifications in columns 3 to 8, note the qualitative and quantitative similarity of the results. For instance, from column 3 where we exclude sibling indicator variables and family income, the estimated reduction in the probability is 4.4%, while the inclusion of trend in column 4 yields 5.4%. For a child from a single parent family, the estimated increase in the probability is 4.1%, and 2.5% for columns 3 and 4 respectively.

3.3. Alternative Data Set

A problem with using census data is that observations occur ten years apart, while the changes in the law took place in the interim. To the extent that the census data does not provide transitional information, we cannot say with certainty that the exposure estimates

before represents the transition each state goes through. We augment our analysis now by using the March Current Population Survey (CPS) from IPUMS, between 1977 to 1991. Because there was only a small number of single parent family observations, we focus on children of intact families. The impact examined here pertains to children of intact families, and the family structure indicator was excluded.

Another benefit of using the CPS data set is that the educational attainment code is detailed. This then allows us to examine the robustness of our result to least squares estimation. Panel A in table 6 replicates the regressions performed in table 4 using least squares estimation. This set of regressions are weighted by individual weights. Further, to verify that our results are robust to aggregation, we used the cell mean of grade attained by age, state and year and performed the following regression.

$$\overline{g}_{ast} = \gamma_1 Joint_{st} + \gamma_2 A_a + \gamma_3 Y_t + \gamma_4 S_s + \gamma_5 \left(A_a \times Y_t\right) + e_{ast} \tag{4}$$

Panel B reports the results to this set of regressions, which are weighted by cell population size.

Another concern is that of serial correlation (Bertrand et. al. (2004)). In lieu of this, the standard errors in panel A were corrected for clustering on state by year level. However, as noted in their experiments, the rejection rate of the true null was still high. The standard errors in panel B are corrected for clustering on the state level as suggested by them. If the result stood at this level, it would strengthen our confidence in the findings.

It is not a surprise that neither of the estimates in columns 1 and 2 are statistically significant since they reflect the difference between the year of adoption and the year prior. Columns 3 and 4 reports the impact of joint custody for the 4 years exposure ranges. Column 3 says that the average number of years of formal education for children in adoption states would drop by 0.038 years for 5 to 8 years of exposure, and 0.029 years after more than 8 years of exposure, although the latter is not significant. With the inclusion of trend in Column 4, a child living in a state where joint custody has been adopted for between 1 to 4 years has on average 0.023 years less education, or a 0.2% decrease. Similarly, joint custody

adoption reduced the number of years of education by 0.047 and 0.045 years, for 5 to 8 years and more than 8 years of exposure respectively, all statistically significant. Columns 5 and 6 pertain to the regressions accounting for exposure in 5 years ranges. Although the estimated impact remains negative (with the exception of more than 10 years of exposure in column 5), they are never significant due to the increase in variance from the width of the 5 years range of exposure.

As in panel A, the estimated impact in columns 1 and 2 in panel B are never significant. While the estimated impact in columns 3 and 4 are of the correct sign and are statistically significant (With the exception of exposure between 1 to 4 years). Further, the estimates are qualitatively and quantitatively very similar to those in panel A, for the 1 to 4 years and 5 to 8 years range of exposure.

There is concern that with emancipation, we may have lost some observations which might have biased our results. If the bulk of 18 year old children who move out of their family homes and hence are not recorded in the data are systematically high school dropouts, our estimates would be biased upwards. Since the results thus far are statistically significant and negative, it suggests that such a case should not be a problem to our inference. However, if these 18 year olds who may be missing are systematically better off, our estimates would be biased downward. In examining this possibility, we considered sub-samples excluding children aged 18, and aged 17 and 18, and found the results to be similar[13].

3.4. Stochastic Dominance Test

We now revert back to the census data, where we have more observations of children from differing family structures. The regressions performed thus far assumes that the errors are normally distributed. We relax this assumption here using the Stochastic Dominance test (Anderson (1996)). Our results so far suggest that the attainment of children from adoption states stochastically dominate their peers in non-adoption states. The reverse is true for children from intact families. We use the stochastic dominance test to test the hy-

potheses. Notwithstanding the non-parametric nature of the test, it allows us to understand whether the results are contributed by lower attainment cells. If true, we would see stochastic dominance only at the tail end of the distribution, suggesting outlying observations are contributing to the results. Such an outcome would cast doubt on our finding thus far. If instead the contributing cells are closer to the mean, it would validate our findings.

To elaborate on this, let g be the ordered variable of child attainment, Φ be the standard normal distribution function, and $\bar{g}$ be the conditional mean of grade attained given age. We saw that;

$$1 - \Phi\left(\bar{g}|\text{Intact}, Joint_{st} = 1\right) \leq 1 - \Phi\left(\bar{g}|\text{Intact}, Joint_{st} = 0\right)$$

$$\Rightarrow \Phi\left(\bar{g}|\text{Intact}, Joint_{st} = 1\right) \geq \Phi\left(\bar{g}|\text{Intact}, Joint_{st} = 0\right)$$

Which means that $\Phi\left(\bar{g}|\text{Intact}, Joint_{st} = 0\right)$ stochastically dominates $\Phi\left(\bar{g}|\text{Intact}, Joint_{st} = 1\right)$, for $g \leq \bar{g}$. This implies that a child from an intact family has a higher probability of high educational attainment compared to her peer in a state with joint custody laws. What we would like to know is which cells are contributing to this, and if the normal distribution assumption is reasonable. Without imposing the assumption that the distribution for states which adopted joint custody or not are alike, let F denote the distribution function of joint custody adoption states, and G be the distribution function for nonadopting states. We test whether;

$$F\left(\bar{g}|\text{Intact}\right) \geq G\left(\bar{g}|\text{Intact}\right)$$

$$F\left(\bar{g}|\text{Single Parent}\right) \leq G\left(\bar{g}|\text{Single Parent}\right)$$

are true.

Further, to control for state(s) and year(t) effects, the test was performed on $\tilde{g}_{ist} =$

$g_{ist} - (\overline{g}_{it} + \overline{g}_{is})$. Specifically, the hypothesis is as follows,

$$H_0 \quad : \quad F\left(\overline{\overline{g}}|\text{Intact}\right) \geq G\left(\overline{\overline{g}}|\text{Intact}\right)$$

$$H_1 \quad : \quad F\left(\overline{\overline{g}}|\text{Intact}\right) < G\left(\overline{\overline{g}}|\text{Intact}\right)$$

We conclude "dominance", H_0 is true, if and only if we reject adopting states dominate non-adopting states. On the other hand, "(dominance)" implies child outcomes in adopting states dominate those of non-adopting states. "No dominance" means there is no discernible dominance relationship, and "Equality" means the distributions are the same. The hypothesis for single parent children is similar. The test is performed for each year, and the change in dominance relationship across the years allows us to discern the direction of impact. To discern if the test results are from the tails, or are an artefact of changes to compulsory education duration, we performed the test at up to two educational code below the mean, besides testing at the mean and one educational code above the mean. The tests were performed on children aged 17 and 18. A shortfall of the test is that it cannot account for trends. We attempt to circumvent that by comparing children from single and widowed parent families.

The results are in table 7, where we report the conclusions only[14]. For children of intact families, column 1 says that children in non-adopting states were less likely to be in a lower grade than their peers from adopting states in 1990, for all thresholds except for 2 codes below the mean at both ages, and for 1 code below the mean for 18 year old children. Regarding the latter, the dominance relationship was reversed compared to the rest. This meant that the distribution intersected twice. However, because it occurred only for the 18 year olds, it is likely an exception. The equality at the tail end of the distribution, for threshold at 2 codes below the mean, implies that our results are not derived from exceptions.

Column 2 reports the results for children living with a single parent. For 18 year old children in 1980, there were no significant difference in distribution between adoption and non-adoption states. This changed by 1990 to stochastic dominance of children in single

parent families in adoption states over their peers in non-adoption states, for threshold of 1 code above the mean, and at the mean. The result for 17 year olds were ambiguous because dominance of children in adoption over non-adoption states in 1980 changed to equality for all thresholds except when we considered 2 codes below the mean. This implies a fall in outcome. An explanation for this difference is that any disruption occurring in the earlier part of the child's life, would have held her back regardless of any law in existence. However, if the new custody regime had a positive impact in creating a stable new environment, the positive outcome would show only at a later age when she chooses between high school completion and dropping out. This argument is reinforced when we compare the dominance relationship of 17 year olds from single and widowed parent families, the latter of which exhibited the same changes, and dominance relationships in 1990. However, the similarities does not extend to the 18 year olds. Thus we conclude that the findings here agrees with our results thus far.

3.5. *Impact of Unilateral Divorce*

The above analyses has not controlled for preceding changes in other laws. As noted previously, the regime change to unilateral divorce reduced the cost of divorce. This precipitated a surge in divorce rate over the 1970s. The Nash bargaining model predicts that in reducing the cost of divorce, unilateral and no-fault divorce laws changed the threat points for spouses within a marriage, hence affecting within marriage investments in children and consequently child outcomes (Friedberg (1998); Brinig and Buckley (1998b); Stevenson and Wolfers (2000); Gruber (2004); Rasul (2003)). It is possible that our joint custody indicator is picking up the effects of the increased ease in divorce. We account for this preceding change here.

The regressions controlling for unilateral divorce are presented in table 8. The form of

the regression is as follows

$$
\begin{aligned}
y_{ifast} \quad = \quad & \Gamma X_i + \alpha Joint_{st} + \beta(Joint_{st} \times F_f) + \gamma Divorce_{st} \\
& + \theta_1 A_a + \theta_2 Y_t + \theta_3 S_s + \theta_4 F_f + \theta_5 (A_a \times Y_t) + \epsilon_{ifast}
\end{aligned}
\tag{5}
$$

Where $Divorce_{st}$ is the unilateral divorce indicator variable. We use the coding by Gruber (2004), and focus on unilateral divorce without separation requirement[15]. The interpretation for γ is the average impact on all children as a result of lowering the cost of divorce to their parents. We also interact $Divorce_{st}$ with the family structure indicator, F_f, to discern between differential in impact by family structure. The effects of the individual laws are identified, with 14% of the observations residing in states with neither laws, 6% with only unilateral divorce, 30.8% with only joint custody, and 49.2% with both laws.

Columns 1 and 2 introduce unilateral divorce to the regression equation, but exclude joint custody. The estimated impact is not significant, and the estimate changes sign with the inclusion of trend. One possibility for this differential from previous findings in the literature, is the narrow age group of children considered. Columns 3 and 4 report the impact of joint custody and unilateral divorce, and columns 5 to 8 accounts for the differential in impact by family structure. Columns 7 and 8 includes the interaction between joint custody and unilateral divorce. From columns 3 and 4, we see that the inclusion of unilateral divorce dampens the estimated average impact of joint custody. However, the coefficient without trend remains statistically significant. When we control for differential in impact by family structure, columns 5 and 6 suggest that the probability of attaining grade 12 and higher by 18 years age for a child from an intact family was reduced by 3.6% and 3.9% with the adoption of joint custody respectively, and they are both statistically significant. While the increase in the probability of the same outcome for a child from a single parent household are 2.7% and 1.8% respectively. Although the average impact of unilateral divorce adoption remains statistically insignificant, note that the *net* impact on children of single parent households is statistically significant and positive. Note the qualitative similarity between the results with

and without the inclusion of the interaction term, with the exception that average impact of joint custody without controlling for state trends is statistically not significant.

We have shown that the results are robust to the inclusion of unilateral divorce laws. However, if the adoption of joint custody had compositional effects, the above regressions cannot discern between the channel through which joint custody law operates (Allen and Brinig (2005)). Further, previous research (Friedberg (1998); Gruber (2004)) found that the adoption of unilateral divorce raised the divorce rate when most of the children in our 1990 sample were born. If there were compositional changes, our results regarding the impact of the regime shift cannot separate between the impact on parental investments and marital decisions.

4.   Changes in the Composition of Family Structures

We address the previously mentioned concerns by examining if the introduction of joint custody altered the likelihood a child lives with a single parent. We obtain the proportion of children living with a single parent by state, year and age for all children from ages 0 to 18, derived from the same sample from which we culled our subsample for our analysis thus far. In addition to our original sample of 1970 to 1990, we included 1960 into these regressions here to adequately capture any preexisting trends in divorce. The regression performed is as follows

$$
\begin{aligned}
f_{ast} \;=\; & \alpha_0 + \alpha_1 Joint_{st} + \alpha_2 Divorce_{st} + \alpha_3 R_{ast} + \\
& \alpha_4 A_a + \alpha_5 S_s + \alpha_6 Y_t + \alpha_7 \left(A_a \times Y_t\right) + \epsilon_{ast}
\end{aligned}
\tag{6}
$$

Where f_{ast} is the proportion of children living with a single parent, for children of age a, in state s, and year t. R_{ast} is the set of indicator variables for proportion of African Americans in the cell, A_a, S_s, and Y_t are the set of age, state of residence and year indicator variables. This is similar to the regression performed by Gruber (2004), with the exception

that we do not include children born outside of wedlock. The results are presented in table 9, panel A. For each regression, we perform one with and the other without state specific trend, and to account for serial correlation, we corrected the standard errors for clustering on state (Bertrand et. al. (2004)). Columns 1 to 6 are for the proportion of children living with a single parent, while columns 7 to 12 are for the proportion of children living with a divorced parent given that they are living in a single parent family structure. This is a nested analysis, where we first examine changes in the rate of parental divorce and separation, followed by considerations of the choice between separation and divorce.

Note that in none of the regressions in columns 3 to 6 was the joint custody coefficient statistically significant, and they were never estimated with accuracy. Not surprisingly, the impact of unilateral divorce law on entry into divorce or separation were statistically significant, and very consistent from column 1 to 6. For instance, column 1 says the adoption of unilateral divorce raised the proportion of children living with a single parent by 0.0052 percentage points or 6%, which are very close to the estimates of column 3 and 5. The same is true between columns 2, 4, and 6, albeit the estimated increase in proportion of children living with a single parent is larger. Taken together, the results suggest that the reason for the change in the proportion of children living in single parent versus intact families over the sample period operated through the adoption of unilateral divorce laws. However, the results from the choice between separation and divorce is unclear. Column 9, with the inclusion of joint custody says the adoption of unilateral divorce reduced the proportion of single parent children living with a divorced parent, while the inclusion of trend in column 10 yielded the opposite conclusion.

The regressions in panel A assume that the odds of a new born child living in one particular family structure is the same as that of a child at age 18. That is, the sampled age group straddles 2 decades. However, each family at the opposing extremes are at differing spans of a family's "life-cycle". To focus on our desired age group, we performed the regressions again, but for children between the ages of 15 to 18. They are reported in panel B. For the

choice between remaining in an intact or single parent family, the estimated change in the proportion of children living with a single parent with the adoption of unilateral divorce and joint custody laws are all statistically insignificant and never estimated with accuracy. In fact the sign of the impact of unilateral divorce changed from those in panel A. This is likely a result of timing of entry into marriage being earlier than when unilateral divorce law was adopted.

For the choice between separation and divorce, column 9 says that the adoption of joint custody significantly reduced the proportion of children living with a divorced parent by 0.082 percentage points or 12.5%. The inclusion of trend yielded the same sign, however the estimate is no longer significant. Note that the sign remains negative even when we account for differential in exposure. Columns 9 and 11 suggest that children of single parent families living in a state with joint custody are more likely to live with a separated parent as opposed to a divorced one. Although the inclusion of trend yielded no change in sign, they are all not significant. As in panel A, the estimated impact of unilateral divorce on the proportion of children living with a divorced parent is significant when trend is not included, and the sign switches with its inclusion. On the aggregate, there does not seem to be any significant change in the proportion of children living with a single parent for the sample we have examined. Although the evidence regarding movements between separated and divorced families is ambiguous, it does not affect our analysis since bargaining in both family structures take place "in the shadow of the law" (Mnookin and Kornhauser (1979)). This section thus implies that our results are from changes in parental investment behavior, and not because of marital choices.

5.   Discussion

We have established that children of single parent families are better off in terms of higher number of years of education and increased probability of graduation by age 18. This finding reinforces previous findings by Brinig and Buckley (1998a) and Del Boca and Ribero

(1998). However, children of intact families had suffered on average, lower number of years of education or lowered probability of graduation by age 18. This is a finding that has not been previously established. The results are robust to specification, use of alternative data set, non-parametric test, and controls for effects of preceding laws. Together, they suggest that differences in educational attainment between children of intact and single parent families had fallen with the adoption of joint custody, albeit in a perverse fashion. The fall in number of years of education and probability of graduation are greater for children of intact families than the improvement among children of single parent families.

If we had found compositional changes with the adoption of joint custody, this would have meant that we would not be able to separate between effects due to parental marital choice, and effects generated by behavioral changes within the family. If the decision to enter into divorce or separation are systematically correlated with child educational attainment, our results could be simply due to an increase in the number of parents, say of high educational attainment, choosing to divorce or separate, hence increasing the average of the outcome among children living with single parents. However, this was not played out in our analysis of composition, which strengthens the possibility of our hypothesis that the differential in educational attainment is a result of behavioral changes generated by the adoption of joint custody.

Considering the model by Rasul (2004), it seems that such a result could be generated only by families where parental valuations are relatively similar. Anecdotal evidence regarding increase incidences of joint custody suggests that the proportion of families where parental valuations are similar, is quite large. The negative outcome among children of intact families suggest that the withdrawal of investment among mothers have overshadowed the increase in investment among fathers in these families. This could be manifested in terms of proportion of income invested in children or time spent with them. With regards to the former, there is some evidence that mothers allocate more of their income to their children relative to fathers (Lundberg et al. (1997)). On the latter, if the regime shift did affect time spent within the

family, then labor participation rates and labor supply itself may have been affected[16]. These are subjects of future research.

A final caveat is in order. The results here highlight a pertinent issue regarding the welfare of the family as a unit. Despite the results that suggest differing and converging child educational outcomes among children in differing family structures, we cannot say with certainty the family unit is better off or otherwise. It is possible that the status quo confined the family to operate sub-optimally. Further, the lifetime welfare of the family unit may be better or worse off as well. We have been able to abstract from the laws' impact on marriage decisions, but based on our findings here and Allen and Brinig (2005), the law may have changed the gains to marriage. Then to understand the full extent of the impact, we should also examine changes to marriage rates, and types of matches that occurred subsequent to the regime change amongst cohorts that grew up with these laws.

6. Conclusion

There has been considerable dispute over the wisdom of implementing joint custody law in adjudicating custody dispute. From the vantage of proponents, incremental custody rights raise support payments and continued contact with both parents. While detractors argued on the grounds that the best remedy for these children is to create as swiftly as possible, a new stable environment from where she could rebuild a new foundation.

We study child outcomes, as measured by a child's educational attainment given her custodial parent's marital status using the IPUMS census data. We found using both analysis of conditional means and the distribution of these children's outcomes, that there is strong evidence suggesting that outcomes of children from single parent families have improved for states which adopted joint custody provisions. This finding is consistent with results from Brinig and Buckley (1998a) and Del Boca and Ribero (1998). It should be clear that none of these findings say joint custody is for every family in every circumstance. Rather, the evidence we provide here is suggestive that the guidelines as set out by the laws are achieving

their goal of softening the impact of divorce for children of these families.

The key finding is that the adoption of joint custody provisions significantly reduced the child outcome of children from intact families. Further, the result that joint custody did not change the proportion of children living with a single parent, strongly suggests there may have been some behavioral changes among intact families. Insufficient attention has been placed on this possibility, and our findings suggest it should be examined further.

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Notes

[1]In truth, 4 states preceded California in adopting joint custody laws, namely Iowa (1977), North Carolina (1957), Oregon (1977) and Wisconsin (1977), albeit without relinquishing the tender age doctrine.

[2]Most states adopted the Uniform Marriage and Divorce Act (UMDA). Mason (1999) had argued that the gravity of the impact of the judgements on the children's welfare demands a more rigorous and precise definition to guide custody judgements.

[3]Allen and Brinig (2005) in studying divorce cases in Oregon between 1995 and 2002 found significant decreases in maternal custody, and increases in paternal and joint custody arrangements subsequent to a change in custody law which made a presumption for joint custody in 1997.

[4]However we have checked for robustness of our results when we relax this distinction, as well as when we used the coding by Brinig and Buckley (1998a), and have found that the results are qualitatively and quantitatively similar.

[5]We were not able to control for differential in relative effectiveness of child support enforcement because data on child support receipts does not extend back to 1970.

[6]There have been suggestions that cross state migration may be endogenous in view of changes in family law. However, "child snatching" is a criminal offense in all but two states by 1982 (Freed and Foster (1983); Freed and Foster (1984)), and outlawed by the federal law, *Parental Kidnapping Prevention Act of 1980.* In addition, *The Federal Fugitive Felon Act* can be invoked by Federal Bureau of Investigation (FBI), acting as a further deterrence.

[7]The coverage trend for the populace in general mirrors this, with 80 percent of all individuals living in a state with joint custody provisions by 1990.

[8]The same can be said of children in the other ages.

[9]This means that identification will come from 80.04% of the total number of observations.

[10]Another way to estimate this without altering the data is to use interval regression Wooldridge (2002). In results not reported here, we found that this produced similar results.

[11]We have chosen to use children at age 18 as the illustrative benchmark. The results are similar if we considered the other ages.

[12]The above regressions included all the covariates: number of siblings, parental educational attainment and family structure indicator variables and total family income. With the exception of parental educational attainment, the other covariates may be correlated with the treatment variable, joint custody. We explored the robustness of our findings by varying the covariates used and the results are in appendix table A.1. Although this is not a test of collinearity, it does give us an impression of possible problems with our estimates as a result. The results were qualitatively and quantitatively similar to those reported in columns 1 and 2 of table 4.

[13]The results are reported in appendix table A.2. Qualitatively the results are similar, with the exception that estimates for children with more than 8 years of exposure are no longer statistically significant. Note that the strongest impact were in the 5 to 8 year range of exposure, as well as the similarity in the estimated drop in the number of years of education with those reported in table 6.

[14]The test statistics and p-values are available on request from the author.

[15]There is debate over the correct unilateral divorce coding. We consider the robustness of our results to alternative unilateral divorce coding in appendix A.1. Our findings are not affected by the choice.

[16]In attempting to understand the mechanism at work, we examined the laws' impact

on parental labor supply decisions. Our examinations of the former involves examining changes in labor supply decisions among parents of intact families with our CPS data set. In results unreported here, there seems to be some evidence that father's labor supply has fallen among children living in a state with joint custody laws. Interestingly, Hanson et al. (1996) in examining child support trends, noted that the fall in fathers' incomes could explain declines in award rates. However, joint custody adoption's impact on maternal labor supply and labor participation decisions are never significant.

Appendix A.1: Alternative Codings for Joint Custody and Unilateral Divorce

The coding we used for Joint Custody laws are from our examination of the state laws, and verifying our readings against other secondary sources. We have separate codings for if a state permits joint custody without agreement and coding excluding this requirement. The analysis has been performed using the former. We checked our results for sensitivity to these joint custody codings and found them to be robust to all definitions including Brinig and Buckley (1998a) code. The results are reported in columns 1, and 2 respectively, in table A.3.

The coding we have used is from Gruber (2004). There are other codings as well. Friedberg (1998) codes a state as a unilateral divorce adoption state if it does not require consent, and is granted on grounds of irretrievable breakdown, irreconcilable differences and incompatibility. Johnson and Mazingo (2000) cites Friedberg and Brinig as sources. On the other hand, Brinig and Buckley (1998b) and Méchoulan (2005) have emphasized the role of the no-fault element in divorce laws. We checked the sensitivity of our results to these alternative coding in table A.3, columns 3, 4 and 5, using our first definition of joint custody law. The regressions were performed without distinguishing between children from divorced or separated families, and do not include trend. All the coefficients of the laws remains identified. All results remain qualitatively similar.

Appendix A.2: Description of Data Used

The data is derived from the one percent Integrated Public Use Microsample (IPUMS) of the decennial Census for the decades between 1960 and 1990. All the samples used are unweighted. We include all 50 states and the District of Columbia. The sample is restricted to households with children born in contiguous U.S., Hawaii, and Alaska. We also restrict attention to families as a single household unit and eliminated extended households. We also excluded from our sample, all household made up of never married individuals, but who do have children of their own. This is a fast increasing sub-group whose dynamics may not be

the same as children born into a traditional family environment. However, unwed mothers as a increasingly common phenomenon may be rare for our sample since children between the ages of 15 to 18 in 1990 would have been born in the early half of the 1970s.

Families who have single parents due to exogenous reasons, i.e. widowhood, were retained in the sample because they are not subject to the custody laws, and hence can act as a control group against children of families with single parents due to separation or divorce. We excluded children living with stepparents, that is families where parents have remarried, since the census questions identifying them were changed for the 1990 sample. In addition, remarriage adds confounding effects which may not allow us to fully comprehend the impact of joint custody.

We retain only children between the compulsory schooling ages of 15 to 18. Since compulsory schooling ages end for all states by 18, considering children after 18 may confound the results, due to emancipation.

Figure 1: Coverage and Timing of Legal Amendments, Children

Figure 2: Dropout Rates Among Persons 16 to 24 Years of Age by Income Level
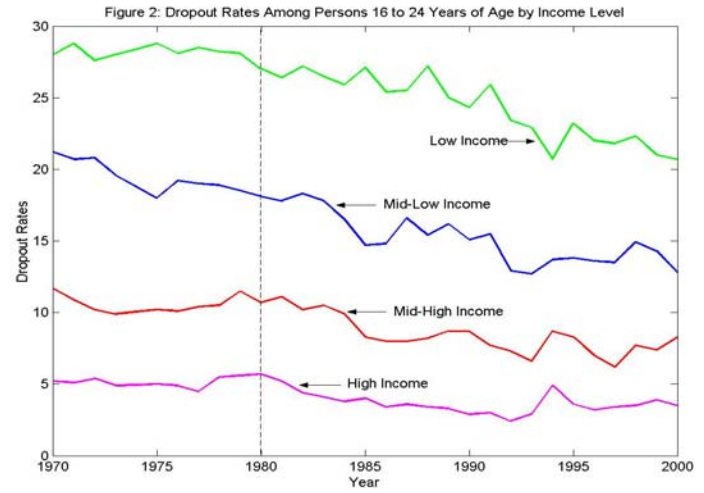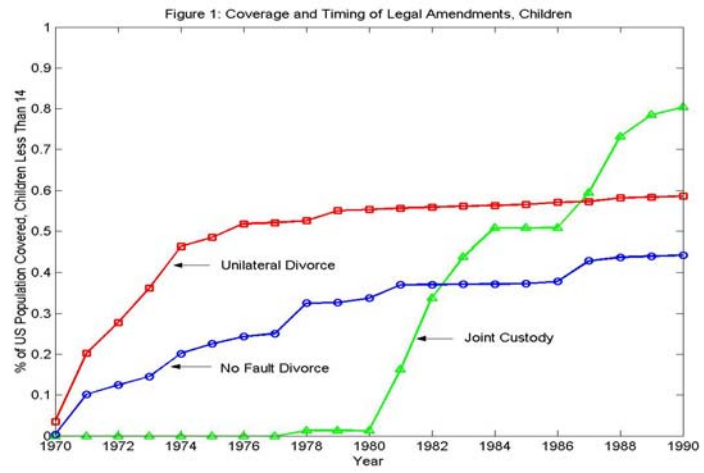
Source: National Center of Education Statistics: Digest of Education Statistics.

Figure 3: Comparison of Educational Attainment
of Children Aged 18 from 1960 to 2000 by Family Type
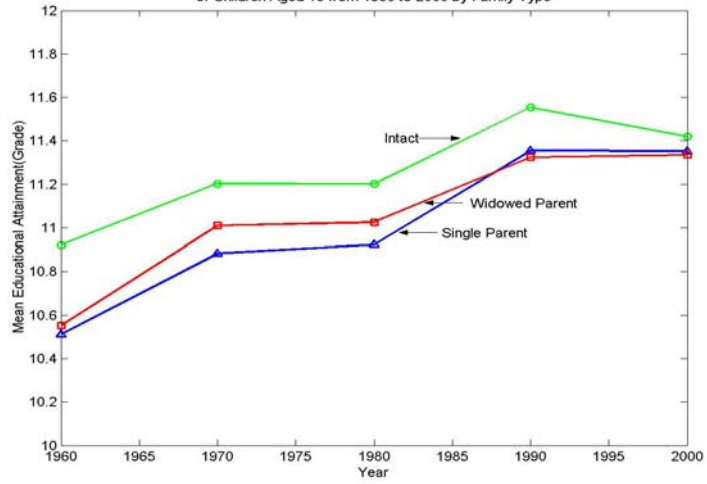
Figure 4a: Comparison of Educational Attainment of Children Aged 18 from 1960 to 2000
by Family Type in Adopting States by 1990
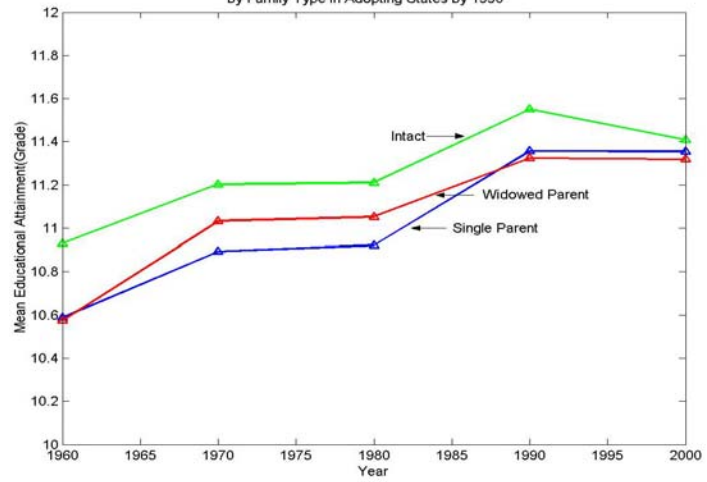
Figure 4b: Comparison of Educational Attainment of Children Aged 18 from 1960 to 2000
by Family Type in Non-Adopting States by 1990
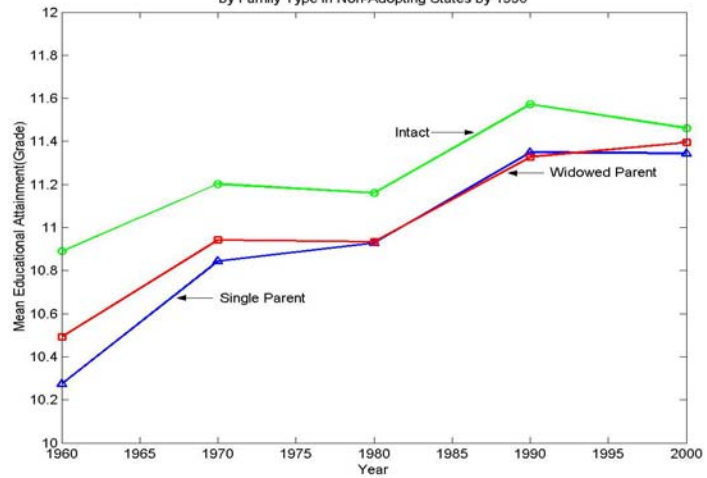
Table 1: Year of divorce and custody law amendments

State	Region	Unilateral 1970-1990	Joint Custody 1970-2000 No Agreement	State	Region	Unilateral 1970-1990	Joint Custody 1970-2000 No Agreement
Alabama	South	1971	1997	Montana	West	1973	1981
Alaska	West	1935	1982	Nebraska	Midwest	1972	0(1983‡)
Arizona	West	1973	1989†	Nevada	West	1967	1981
Arkansas	South	0	2003	New Hampshire	Northeast	1971	1981
California	West	1970	1980	New Jersey	Northeast	0	1991
Colorado	West	1972	1987(1983‡)	New Mexico	West	1933	1982
Connecticut	Northeast	1973	1980	New York	Northeast	0	0
Delaware	South	1968	1981	North Carolina	South	0	1988(1957‡)
D.C.	South	0	1996	North Dakota	Midwest	1971	0
Florida	South	1971	1982	Ohio	Midwest	0	1981
Georgia	South	1973	1990	Oklahoma	South	1953	1983
Hawaii	West	1972	1980	Oregon	West	1971	1987(1977‡)
Idaho	West	1971	1982	Pennsylvania	Northeast	0	1981
Illinois	Midwest	0	1986	Rhode Island	Northeast	1975	0
Indiana	Midwest	1973	1983	South Carolina	South	0	1996
Iowa	Midwest	1970	1977	South Dakota	Midwest	1985	1989
Kansas	Midwest	1969	1980	Tennessee	South	0	1986
Kentucky	South	1972	1980	Texas	South	1970	1987
Louisiana	South	0	1981	Utah	West	1987	1988
Maine	Northeast	1973	1981	Vermont	Northeast	0	0(1987‡)
Maryland	South	0	1986	Virginia	South	0	1987
Massachusetts	Northeast	1975	1982	Washington	West	1973	1987†
Michigan	Midwest	1972	1981	West Virginia	South	0	0
Minnesota	Midwest	1974	1982	Wisconsin	Midwest	1978	1988(1977‡)
Mississippi	South	0	1983	Wyoming	West	1977	0
Missouri	Midwest	0	1983				

Source: Unilateral Divorce Coding: Gruber(2004); Joint Custody: Own Research. 0 to denote the fact that a stated legislation was never adopted nor acknowledged. ‡ Consent of both parents required in joint custody cases. † Agreement required, but will not have bearing if found to be unreasonable.

Table 2: Educational Attainment by Family Structure

Children Aged 18	1980	1990	Difference	Diff-in-Diff
Mean of Coded Educational Attainment of children of single parent families				
Adopting States	5.92	6.36	0.44	0.02
	(1.12)	(1.07)	7.45%	0.37%
Non-Adopting States	5.93	6.35	0.42	
	(1.14)	(1.17)	7.07%	
Cross Sectional Difference		0.01		
		0.15%		
Mean of Coded Educational Attainment of children of intact parent families				
Adopting States	6.21	6.55	0.34	-0.07
	(0.89)	(0.96)	5.46%	-1.17%
Non-Adopting States	6.16	6.57	0.41	
	(1.00)	(1.01)	6.67%	
Cross Sectional Difference		-0.02		
		-0.33%		

Standard Deviations are in parentheses.

Table 3: Are Mothers More Capable in Adopting States?

	1980	1990	Difference	Diff-in-Diff
Panel A				
Mean Income of Single Mothers ($000)				
Adopting States	17.05	18.67	1.63	-1.24
	(12.58)	(14.20)	9.55%	-8.16%
Non-Adopting States	15.17	18.04	2.87	
	(11.44)	(14.45)	18.89%	
Proportion of Single Mothers who worked more than 30 hours a week.				
Adopting States	0.66	0.71	0.05	-0.06
			7.58%	-10.00%
Non-Adopting States	0.6	0.71	0.11	
			18.33%	
Proportion of Single Mothers who completed grade 12 or higher.				
Adopting States	0.69	0.86	0.17	-0.02
			24.64%	-3.12%
Non-Adopting States	0.64	0.83	0.19	
			29.69%	
Panel B				
Mean Income of Intact Mothers ($000)				
Adopting States	8.44	11.46	3.02	-0.87
	(10.89)	(12.47)	35.78%	-10.52%
Non-Adopting States	8.28	12.17	3.89	
	(10.88)	(13.44)	46.99%	
Proportion of Intact Mothers who worked more than 30 hours a week.				
Adopting States	0.41	0.53	0.12	-0.02
			29.27%	-5.00%
Non-Adopting States	0.4	0.54	0.14	
			35.00%	
Proportion of Intact Mothers who completed grade 12 or higher.				
Adopting States	0.75	0.88	0.13	-0.02
			17.33%	-2.74%
Non-Adopting States	0.73	0.88	0.15	
			20.55%	

Standard Deviations are in parentheses.

Table 4: The Impact of Joint Custody Adoption on Child Outcome, Baseline

Dependent Variable: Grade Attained						
	1	2	3	4	5	6
Predicted Probability	0.37738	0.37767	0.37736	0.3782	0.37802	0.37729
Joint Custody	-0.025**	-0.03				
	[0.012]	[0.019]				
	{-0.0096}	{-0.0113}				
1 to 4 Years			0.038***	-0.007		
			[0.013]	[0.019]		
			{0.015}	{-0.003}		
5 to 8 Years			-0.027*	-0.063***		
			[0.014]	[0.023]		
			{-0.01}	{-0.024}		
> 8 Years			-0.068***	-0.041**		
			[0.012]	[0.021]		
			{-0.025}	{-0.016}		
1 to 5 Years					0.031**	0.006
					[0.014]	[0.025]
					{0.012}	{0.002}
6 to 10 Years					-0.073***	-0.050**
					[0.013]	[0.023]
					{-0.028}	{-0.019}
> 10 Years					-0.127***	0.048
					[0.040]	[0.091]
					{-0.048}	{0.018}
State and Year Effects	X	X	X	X	X	X
Age and Cohort Effects	X	X	X	X	X	X
State Trends		X		X		X
Parental Ed.	X	X	X	X	X	X
Family Type	X	X	X	X	X	X
No. Siblings	X	X	X	X	X	X
Family Inc.	X	X	X	X	X	X
Observations	272127	272127	272127	272127	272127	272127
Log Likelihood	-316990	-316623	-316938	-316618	-316939	-316619
Pct. Correctly Predicted	0.47	0.48	0.48	0.48	0.48	0.48

Robust standard errors adjusted for heteroscedasticity are in brackets. Marginal change in probability, for probability of attaining grade 12 or higher at age 18, are in braces. The predicted probability for attaining grade 12 or higher at 18 if Joint Custody was not adopted are reported above each column. Both the predicted probabilities and marginal change in probability for Joint Custody coefficient are calculated at the mean of all variables for children at age 18.. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Decomposition of Impact of Joint Custody by Family Type

Dependent Variable: Grade Attained	1	2	3	4	5	6	7	8
Predicted Probability	0.37729	0.37752	0.38076	0.38157	0.37951	0.38001	0.37823	0.3786
Joint Custody	-0.039***	-0.042**	-0.044***	-0.054***	-0.038***	-0.045**	-0.045***	-0.050***
	[0.012]	[0.019]	[0.012]	[0.019]	[0.012]	[0.019]	[0.012]	[0.019]
	{-0.0149}	{-0.0158}	{-0.0168}	{-0.0206}	{-0.0144}	{-0.017}	{-0.0171}	{-0.0189}
Joint Custody * Single Parent	0.076***	0.069***	0.086***	0.079***	0.079***	0.072***	0.082***	0.075***
	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]
	{0.0139}	{0.0103}	{0.0159}	{0.0095}	{0.0157}	{0.0104}	{0.0139}	{0.0095}
State and Year Effects	X	X	X	X	X	X	X	X
Age and Cohort Effects	X	X	X	X	X	X	X	X
State Trends		X		X		X		X
Parental Ed.	X	X	X	X	X	X	X	X
No. Siblings	X	X					X	X
Family Inc.	X	X			X	X		
Observations	272127	272127	272127	272127	272127	272127	272127	272127
Log Likelihood	-316974.59	-316609.99	-318076.52	-317713.49	-317471.83	-317112.36	-317473.32	-317104.98
Pct. Correctly Predicted	0.48	0.48	0.48	0.48	0.48	0.48	0.47	0.48

Robust standard errors adjusted for heteroscedasticity are in brackets. Marginal change in probability, for probability of attaining grade 12 or higher at age 18, are in braces. The predicted probability for attaining grade 12 or higher at 18 if Joint Custody was not adopted are reported above each column. Both the predicted probabilities and marginal change in probability for Joint Custody coefficient are calculated at the mean of all variables for children at age 18.. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 6: The Impact of Joint Custody Adoption, using IPUMS-CPS (1977-1991)

Mean Number of Years of Schooling Among 18 Year Olds: 11.29048

Dependent Variable:	Grade Attained						Mean Grade Attained by State, Year, Age Cells					
	Panel A						Panel B					
	1	2	3	4	5	6	1	2	3	4	5	6
Joint Custody	-0.009 [0.012]	-0.004 [0.013]					-0.013 [0.016]	-0.001 [0.018]				
Joint Custody, 1 to 4 Years			-0.017 [0.011]	-0.023** [0.011]					-0.016 [0.014]	-0.02 [0.015]		
Joint Custody, 5 to 8 Years			-0.038*** [0.015]	-0.047*** [0.016]					-0.043*** [0.015]	-0.050*** [0.014]		
Joint Custody, more than 8 Years			-0.029 [0.019]	-0.045** [0.022]					-0.056*** [0.020]	-0.055* [0.029]		
Joint Custody, 1 to 5 Years					-0.008 [0.012]	-0.008 [0.014]					-0.012 [0.015]	-0.007 [0.020]
Joint Custody, 6 to 10 Years					-0.03 [0.018]	-0.027 [0.028]					-0.053** [0.021]	-0.033 [0.032]
Joint Custody, more than 10 Years					0.027 [0.028]	-0.013 [0.048]					-0.035 [0.041]	-0.018 [0.053]
State & Year Effects	X	X	X	X	X	X	X	X	X	X	X	X
State Trends		X		X		X		X		X		X
Parental Education	X	X	X	X	X	X						
Number of Siblings	X	X	X	X	X	X						
Observations	105390	105390	105390	105390	105390	105390	3058	3058	3058	3058	3058	3058
R-squared	0.57	0.57	0.57	0.57	0.57	0.57	0.98	0.98	0.98	0.98	0.98	0.98

Regressions for individual observations are weighted by individual weights, while regression on the mean grade attainment are weighted by cell population size. Robust standard errors for regressions in Panel A adjusted for **clustering by state * year** are in brackets. Robust standard errors for regressions in Panel B adjusted for **clustering by state** are in brackets. Cohorts are calculated based on date of birth, using year of interview - age. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 7: Test of Stochastic Dominance of Child Outcomes of Non-Adopting over Adopting States

Dependent Variable: Demeaned Grade Attained

	Intact 1		Single Parent 2		Widowed 3	
Age	**17**	**18**	**17**	**18**	**17**	**18**
Threshold	At One Code Above Mean Attainment					
1970	Dominance	Dominance	(Dominance)*	Dominance	No Dominance	Dominance*
1980	No Dominance	(Dominance)	(Dominance)*	Equality	(Dominance)	(Dominance)
1990	Dominance	Dominance*	Equality	(Dominance)	Equality	Equality
Threshold	At Mean Attainment					
1970	Dominance	Dominance	Equality	Equality	Dominance	(Dominance)
1980	(Dominance)	(Dominance)	(Dominance)	Equality	Equality	Equality
1990	Dominance*	Dominance	Equality	(Dominance)	Equality	Equality
Threshold	At One Code Below Mean Attainment					
1970	Dominance	Equality	Equality	Equality	(Dominance)*	(Dominance)*
1980	(Dominance)	(Dominance)	(Dominance)	Equality	Equality	Equality
1990	Dominance*	(Dominance)	Equality	Equality	Equality	Equality
Threshold	At Two Codes Below Mean Attainment					
1970	Equality	Equality	Equality	Equality	(Dominance)	Equality
1980	Equality	(Dominance)	Equality	Equality	Equality	Equality
1990	Equality	Equality	Equality	Equality	Equality	Equality

Equality implies the distribution functions are statistically the same in the tested range. **(Dominance)** implies stochastic dominance of distribution of Joint Custody Adoption states over Non-adoption states. While **Dominance** implies stochastic dominance of Joint Custody Non-adoption states over Adoption states. All tests were performed at the 5% level of significance unless otherwise stated. * 10% level of significance.

Table 8: The Impact of Joint Custody and Unilateral Divorce Law

Dependent Variable: Grade Attained								
	1	2	3	4	5	6	7	8
Predicted Probability:	0.3768	0.37415	0.37847	0.37689	0.37842	0.37613	0.37745	0.37375
Joint Custody			-0.024**	-0.029	-0.036***	-0.039**	-0.021	-0.055**
			[0.012]	[0.019]	[0.012]	[0.019]	[0.014]	[0.025]
			{-0.0091}	{-0.0111}	{-0.0136}	{-0.0145}	{-0.008}	{-0.0206}
Joint Custody * Single Parent					0.063***	0.056***	0.063***	0.056***
					[0.016]	[0.016]	[0.016]	[0.016]
					{0.0104}	{0.0066}	{0.016}	{0.0005}
Unilateral Divorce	-0.011	0.007	-0.009	0.005	-0.016*	0.002	-0.009	0.018
	[0.009]	[0.016]	[0.009]	[0.016]	[0.009]	[0.016]	[0.009]	[0.022]
	{-0.0041}	{0.0027}	{-0.0033}	{0.0018}	{-0.006}	{0.0006}	{-0.0033}	{0.007}
Unilateral Divorce * Single Parent					0.046***	0.047***	0.048***	0.047***
					[0.014]	[0.014]	[0.014]	[0.014]
					{0.0115}	{0.0187}	{0.015}	{0.025}
Joint Custody * Unilateral Divorce							X	X
State & Year Effects	X	X	X	X	X	X	X	X
Age & Cohort Effects	X	X	X	X	X	X	X	X
State Trends		X		X		X		X
Parental Education	X	X	X	X	X	X	X	X
Family Type	X	X	X	X	X	X	X	X
No. Siblings	X	X	X	X	X	X	X	X
Family Inc.	X	X	X	X	X	X	X	X
Observations	272127	272127	272127	272127	272127	272127	272127	272127
Log Likelihood	-316991.84	-316623.89	-316989.61	-316622.71	-316967.75	-316603.21	-316965.42	-316602.72
% Correctly Predicted	0.47	0.48	0.47	0.48	0.47	0.48	0.48	0.48

Robust standard errors adjusted for heteroscedasticity are in brackets. Marginal change in probability, for probability of attaining grade 12 or higher at age 18, are in braces. The predicted probability for attaining grade 12 or higher at 18 if Joint Custody was not adopted are reported above each column. Both the predicted probabilities and marginal change in probability for Joint Custody coefficient are calculated at the mean of all variables for children at age 18.. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 9: Compositional Effects of Joint Custody and Unilateral Divorce Laws, 1960-1990

Panel A

Sample: Children between the ages of 0 to 18, including children from intact and single parent households only.

Proportion of Children:	Living with a Single Parent						Living with a Single Divorced Parent Given Single Parent Household					
	1	2	3	4	5	6	7	8	9	10	11	12
Mean:	0.086566						0.56805					
Unilateral Divorce	0.005175*	0.018471***	0.004903*	0.018404***	0.005123*	0.018712***	-0.057442**	0.035529**	-0.051692**	0.035676**	-0.051467**	0.033794**
	[0.002783]	[0.003428]	[0.002797]	[0.003510]	[0.002852]	[0.003464]	[0.023249]	[0.013813]	[0.023408]	[0.014017]	[0.023660]	[0.014910]
Joint Custody			0.002927	0.006876					-0.061890***	-0.01504		
			[0.005152]	[0.007880]					[0.019158]	[0.018327]		
1 to 4 Years					0.003534	0.001236					-0.063787***	-0.020721
					[0.005350]	[0.007920]					[0.023735]	[0.015590]
5 to 8 Years					0.001877	0.00258					-0.028453	-0.048750**
					[0.004185]	[0.006951]					[0.026931]	[0.019812]
> 8 Years					-0.001006	0.005892					-0.036624	0.007941
					[0.005272]	[0.007400]					[0.023305]	[0.021527]
State & Year Effects	X	X	X	X	X	X	X	X	X	X	X	X
State Trends		X		X		X		X		X		X
Observations	3876	3876	3876	3876	3876	3876	3876	3876	3876	3876	3876	3876
R-squared	0.9	0.91	0.9	0.91	0.9	0.91	0.75	0.8	0.76	0.8	0.76	0.8
Adj. R Squared	0.89	0.9	0.89	0.91	0.89	0.91	0.75	0.79	0.75	0.79	0.75	0.79

Panel B

Sample: Children between the ages of 15 to 18, including children from intact and single parent households only.

Proportion of Children:	Children Living with a Single Parent						Living with a Single Divorced Parent Given Single Parent Household					
	1	2	3	4	5	6	7	8	9	10	11	12
Mean:	0.11308						0.65474					
Unilateral Divorce	-0.000631	-0.00798	-0.000937	-0.007742	-0.001151	-0.006804	-0.069645**	0.015708	-0.062508**	0.014964	-0.061960**	0.016299
	[0.002434]	[0.005511]	[0.002552]	[0.005346]	[0.002616]	[0.005528]	[0.026381]	[0.030012]	[0.026419]	[0.030082]	[0.026935]	[0.029604]
Joint Custody			0.003522	0.006604					-0.081958***	-0.020704		
			[0.007457]	[0.007912]					[0.022403]	[0.032599]		
1 to 4 Years					0.003097	0.002049					-0.079898***	-0.024564
					[0.006454]	[0.006737]					[0.023663]	[0.035319]
5 to 8 Years					0.005022	0.009097					-0.056858*	-0.027801
					[0.005338]	[0.007702]					[0.032113]	[0.028575]
> 8 Years					0.00326	0.006021					-0.043719	-0.00254
					[0.006759]	[0.009009]					[0.029621]	[0.032760]
State & Year Effects	X	X	X	X	X	X	X	X	X	X	X	X
State Trends		X		X		X		X		X		X
Observations	816	816	816	816	816	816	816	816	816	816	816	816
R-squared	0.91	0.93	0.91	0.93	0.91	0.93	0.76	0.82	0.76	0.82	0.76	0.82
Adj. R Squared	0.91	0.91	0.91	0.91	0.91	0.91	0.74	0.79	0.74	0.79	0.74	0.79

Robust standard errors adjusted for **clustering on state** are in brackets. Dependent variables are at the cell means at the state by year by age level. * significant at 10%; ** significant at 5%; *** significant at 1%

Table A.1: The Impact of Joint Custody Adoption on Child Outcome, by Specification

Dependent Variable: Grade Attained

	1	2	3	4	5	6	7	8
Predicted Probability:	**0.3811**	**0.38204**	**0.37867**	**0.37919**	**0.37965**	**0.38041**	**0.38088**	**0.38176**
Joint Custody	-0.029**	-0.042**	-0.029**	-0.041**	-0.031**	-0.038**	-0.023*	-0.033*
	[0.012]	[0.019]	[0.012]	[0.019]	[0.012]	[0.019]	[0.012]	[0.019]
	{-0.0111}	{-0.0159}	{-0.0117}	{-0.0145}	{-0.0087}	{-0.0124}	{-0.0108}	{-0.0155}
State and Year Effects	X	X	X	X	X	X	X	X
Age and Cohort Effects	X	X	X	X	X	X	X	X
State Trends		X		X		X		X
Parental Ed.	X	X	X	X	X	X	X	X
Family Type			X	X				
No. Siblings					X	X		
Family Inc.							X	X
Observations	272127	272127	272127	272127	272127	272127	272127	272127
Log Likelihood	-318238.7	-317877.47	-318096.69	-317730.6	-317657.99	-317291.91	-317509.68	-317149.39
Pct. Correctly Predicted	0.48	0.48	0.48	0.48	0.47	0.48	0.48	0.48

Robust standard errors adjusted for heteroscedasticity are in brackets. Marginal change in probability, for probability of attaining grade 12 or higher at age 18, are in braces. The predicted probability for attaining grade 12 or higher at 18 if Joint Custody was not adopted are reported above each column. Both the predicted probabilities and marginal change in probability for Joint Custody coefficient are calculated at the mean of all variables. * significant at 10%; ** significant at 5%; *** significant at 1%

Table A.2: Robustness to Excluding Children

Dependent Variable: Grade Attained

Sample: March CPS	1	2	3	4	5	6	7	8	9	10	11	12
	Excluding 18 Year Olds						Excluding 17 & 18 Year Olds					
Joint Custody	-0.01 [0.012]	-0.001 [0.013]					0.013 [0.013]	0.031** [0.015]				
Joint Custody, 1 to 4 Years			-0.012 [0.012]	-0.014 [0.012]					0.005 [0.013]	0.005 [0.014]		
Joint Custody, 5 to 8 Years			-0.038*** [0.014]	-0.036** [0.015]					-0.033** [0.017]	-0.039** [0.019]		
Joint Custody, more than 8 Years			-0.025 [0.019]	-0.027 [0.023]					-0.027 [0.022]	-0.048* [0.028]		
Joint Custody, 1 to 5 Years					-0.008 [0.012]	-0.005 [0.015]					0.015 [0.014]	0.022 [0.017]
Joint Custody, 6 to 10 Years					-0.033* [0.019]	-0.018 [0.029]					-0.02 [0.021]	-0.007 [0.035]
Joint Custody, more than 10 Years					0.005 [0.026]	-0.035 [0.050]					0.017 [0.029]	-0.028 [0.058]
State & Year Effects	X	X	X	X	X	X	X	X	X	X	X	X
State Trends		X		X		X		X		X		X
Parental Education	X	X	X	X	X	X	X	X	X	X	X	X
Number of Siblings	X	X	X	X	X	X	X	X	X	X	X	X
Observations	81593	81593	81593	81593	81593	81593	54528	54528	54528	54528	54528	54528
R-squared	0.46	0.46	0.46	0.46	0.46	0.46	0.27	0.27	0.27	0.27	0.27	0.27

Regressions for individual observations are weighted by individual weights,. Robust standard errors for regressions adjusted for **clustering by state * year** are in brackets. Cohorts are calculated based on date of birth, using year of interview - age. * significant at 10%; ** significant at 5%; *** significant at 1%

Table A.3: Alternative Coding for Joint Custody Law and Unilateral Divorce Law

Dependent Variable: Educational Attainment

	1	2	3	4	5	6	7	8	9	10
	Joint Custody with Agreement		Joint Custody (Brinig)		Unilateral Divorce (Friedberg)		Unilateral Divorce (Johnson & Mazingo)		Méchoulan (No-Fault in Alimony)	
Predicted Probability	0.37924	0.37556	0.37813	0.37299	0.3758	0.37066	0.37693	0.37422	0.38143	0.38383
Joint Custody	-0.044***	-0.084***	-0.028**	-0.051**	-0.025*	-0.056**	-0.029**	-0.045*	-0.033**	-0.049**
	[0.014]	[0.024]	[0.012]	[0.021]	[0.014]	[0.026]	[0.014]	[0.024]	[0.014]	[0.022]
	{-0.0166}	{-0.0312}	{-0.0106}	{-0.0191}	{-0.0096}	{-0.0209}	{-0.0109}	{-0.017}	{-0.013}	{-0.0188}
Joint Custody * Single Parent	0.054***	0.047***	0.071***	0.065***	0.066***	0.059***	0.064***	0.058***	0.062***	0.055***
	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]	[0.015]	[0.016]	[0.016]	[0.016]	[0.016]
	{0.004}	{-0.0139}	{0.0164}	{0.0054}	{0.0154}	{0.0012}	{0.0134}	{0.0048}	{0.0112}	{0.0022}
Unilateral Divorce	-0.005	0.024	0.001	0.032	0.006	0.043	-0.003	0.018	-0.061***	-0.070***
	[0.009]	[0.021]	[0.010]	[0.021]	[0.009]	[0.027]	[0.009]	[0.018]	[0.009]	[0.017]
	{-0.0018}	{0.0092}	{0.0003}	{0.012}	{0.0024}	{0.0165}	{-0.0012}	{0.0067}	{-0.0232}	{-0.0265}
Unilateral Divorce * Single Parent	0.049***	0.049***	0.038***	0.039***	0.040***	0.040***	0.039***	0.037***	0.057***	0.054***
	[0.014]	[0.014]	[0.014]	[0.015]	[0.014]	[0.014]	[0.014]	[0.014]	[0.015]	[0.015]
	{0.0168}	{0.0281}	{0.0148}	{0.0271}	{0.0178}	{0.0321}	{0.0138}	{0.0207}	{-0.0018}	{-0.0061}
State & Year Effects	X	X	X	X	X	X	X	X	X	X
State Trends		X		X		X		X		X
Age Effects	X	X	X	X	X	X	X	X	X	X
Cohort Effects	X	X	X	X	X	X	X	X	X	X
Observations	272127	272127	272127	272127	272127	272127	272127	272127	272127	272127
Log Likelihood	-316960.45	-316600.41	-316957.57	-316597.36	-316967.82	-316603.57	-316969.53	-316605.29	-316947.94	-316594.01
Pct. Correctly Predicted	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48

Robust standard errors adjusted for heteroscedasticity are in brackets. Marginal change in probability, for probability of attaining grade 12 or higher at age 18, are in braces. The predicted probability for attaining grade 12 or higher at 18 if Joint Custody was not adopted are reported above each column. Both the predicted probabilities and marginal change in probability for Joint Custody coefficient are calculated at the mean of all variables for children at age 18. * significant at 10%; ** significant at 5%; *** significant at 1%