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

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**Abstract**

This article studies the effect of the regime shift to joint custody in custody dispute adjudication in the United States during the 1980s using census data. Relying on cross state and year variation in the timing of adoption, I found the probability of attaining grade 12 or higher at age 18 among children of divorced or separated families to be higher in adoption states, but there was a fall in the same probability among intact families. The results are robust to alternate specification, use of alternative data set, and examination of compositional effects.

**JEL Classification:** J12; J13; K36
**Keywords:** Educational Attainment; Family Structure; Custody Law

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# 1 Introduction

From the 1950s to the 1980s, most states in the U.S. practiced the protection of a mother's rights in custody dispute under the tender year doctrine. This practice allocated custody of children to mothers, referred to as *maternal preference*, if the minors were below the age of seven (Mason 1999). However in 1979, California[1] amended its custody law to one with a stated preference for joint custody arrangements, subsequent to which there was a precipitous shift towards permitting joint custody[2][3] throughout the United States. Figure 1 shows the growth in the coverage of joint custody law since 1979 with respect to children under 14 years of age. 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). Further, the breadth of influence these laws possessed were evident in states where divorced parents were permitted to reevaluate custodial arrangements made prior to the regime shift, obtaining fresh judgments based on current application of the new law (Mason 1999).

This paper examines the effect of the changes in custody law during the 1980s on children's educational outcome. Custody adjudication laws directly address how spouses divide the care of their children in the divorce state in terms of both child support and effectual care. There are two possible ways through which it affects parental choices. Firstly, insofar as it deals with the allocation of responsibility for children between parents in the divorce state, it can directly affect the level of parental commitment to their children in terms of time spent with the children, and monetary investments on them. Second,

[1] 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] 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 of 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. I am not able to discern between the two in the analysis.

[3] 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, such as California had made it a preferential arrangement such that if not granted, the onus is on the courts to provide the reason why it was not.

Table 1: Year of Divorce and Custody Law Amendments

| State | Unilateral | Joint Custody | State | Unilateral | Joint Custody |
|---|---|---|---|---|---|
| | 1970-1990 | 1970-2000 | | 1970-1990 | 1970-2000 |
| Alabama | 1971 | 1997 | Montana | 1973 | 1981 |
| Alaska | 1935 | 1982 | Nebraska | 1972 | 0(1983‡) |
| Arizona | 1973 | 1989† | Nevada | 1967 | 1981 |
| Arkansas | 0 | 2003 | New Hampshire | 1971 | 1981 |
| California | 1970 | 1980 | New Jersey | 0 | 1991 |
| Colorado | 1972 | 1987(1983‡) | New Mexico | 1933 | 1982 |
| Connecticut | 1973 | 1980 | New York | 0 | 0 |
| Delaware | 1968 | 1981 | North Carolina | 0 | 1988(1957‡) |
| D.C. | 0 | 1996 | North Dakota | 1971 | 0 |
| Florida | 1971 | 1982 | Ohio | 0 | 1981 |
| Georgia | 1973 | 1990 | Oklahoma | 1953 | 1983 |
| Hawaii | 1972 | 1980 | Oregon | 1971 | 1987(1977‡) |
| Idaho | 1971 | 1982 | Pennsylvania | 0 | 1981 |
| Illinois | 0 | 1986 | Rhode Island | 1975 | 0 |
| Indiana | 1973 | 1983 | South Carolina | 0 | 1996 |
| Iowa | 1970 | 1977 | South Dakota | 1985 | 1989 |
| Kansas | 1969 | 1980 | Tennessee | 0 | 1986 |
| Kentucky | 1972 | 1980 | Texas | 1970 | 1987 |
| Louisiana | 0 | 1981 | Utah | 1987 | 1988 |
| Maine | 1973 | 1981 | Vermont | 0 | 0(1987‡) |
| Maryland | 0 | 1986 | Virginia | 0 | 1987 |
| Massachusetts | 1975 | 1982 | Washington | 1973 | 1987† |
| Michigan | 1972 | 1981 | West Virginia | 0 | 0 |
| Minnesota | 1974 | 1982 | Wisconsin | 1978 | 1988(1977‡) |
| Mississippi | 0 | 1983 | Wyoming | 1977 | 0 |
| Missouri | 0 | 1983 | | | |

Notes:

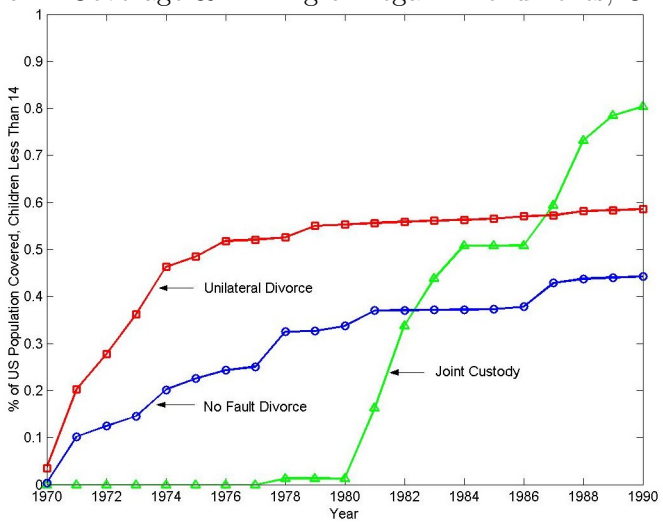
0 Denotes that a stated legislation was never adopted nor acknowledged.

‡Consent of both parents required in joint custody cases.

†Agreement required, but will not have bearing if found to be unreasonable.

Source: Unilateral Divorce Coding: Gruber (2006); Joint Custody: Own Research.

Figure 1: Coverage & Timing of Legal Amendments, Children




Source: U.S. Census Bureau - Population Division, Estimates of the Population of States by Age, Sex, and Race: 1970-1990, various years.

given the redistribution of responsibility, both pecuniary and non-pecuniary, parental expected lifetime welfare is altered which in turn may change the choices of the spouses in both the intact and divorced states, the mechanism of which will be discussed in greater detail subsequently.

Proponents of the law argue that joint custody could achieve a more equitable division of both enjoyment of and responsibility for the children, thereby encouraging continued care of and commitment to the children. However detractors of the law argue that regular physical transfer of children between two distinct households and regular interaction between divorced parents may engender more dispute, preventing a swift adjustment by the children to their new environment within a divorced parent household (Mason 1999). The two arguments presume a direct route through which the effect on children is transmitted. A third argument suggests that any visible change in child outcomes are derived purely through selection of the marginal families into either the continued intact or divorce state being systematically correlated with the level of pecuniary and non-pecuniary investment in their children.

An extension of the arguments to effects on children of intact families uses the "Exit Threat" model, as used to analyze the effects of the "no-fault revolution". This could operate through changing the relative attractiveness of the divorced spouse in the mar-

riage market on account of the responsibility to children from the former family, and the financial commitment in maintaining those responsibilities. This in turn could alter the inter-temporal incentives for investing in children. Rasul (2006a) argues that variation in relative parental valuation of children rationalizes differences in optimal custody arrangement, and consequently variation in investment within marriage.

I used data from the one percent Integrated Public Use Microsample (IPUMS) of the decennial Census for the decades between 1970 and 1990, and focused on the educational attainment of children between the ages of 15 to 18. The empirical methodology used exploits the cross state and time differential in year of adoption of the new custody laws. The use of educational attainment as a measure of child outcome is predicated on it being a good measure of the degree of parental involvement with their children both financially and emotionally. Although the regime shift occurred between 1980 and 1990, by pooling an additional census year prior, the empirical analysis could account for changes in educational attainment trends. By restricting the age range, all households examined were formed prior to the regime shift, eliminating the possibility of selection into marriage as a result of the new law.

Boca and Ribero (1998) found that fathers awarded joint custody were more likely to make payments beyond the dictated support payments, which supports the argument made by Weiss and Willis (1985). Corroborating with their finding, I find that the probability a child achieves grade 12 or higher at age 18 rose in states which adopted joint custody laws among children of divorced and separated families. However the probability of the same outcome fell among children of intact families in states which adopted the laws. To ascertain that this is not due to selection into the intact and divorced states by parents, I found no significant evidence of joint custody law altering the composition of family structures in the census years examined among children in the age range considered. Further, the latter finding is robust to the use of the Current Population Survey Data from IPUMS. The main finding is thus the effect on children of intact families and it suggests that there may be indirect effects on parental investment choices. These findings are also robust to controlling for effects due to the "no-fault divorce" revolution of the 1970s.

The rest of the paper is organized as follows; the next section discusses the testable theoretical predictions. In section 3, I provide summary statistics of the data, followed

by a discussion of the estimation models and identification strategy. Section 4 presents the estimation results with robustness checks. Section 5 explores the law's compositional effects, which is followed by a discussion and conclusion.

# 2 Joint Custody and Variation in Child Outcome: Some Predictions

The implications of differing custody arrangements on a non-custodial parent's willingness to make child support payment 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, resulting in lost of control thereby reducing willingness to meet child support obligations. Nonetheless, they suggest that if the costs of maintaining contact with their children are small, since each spouse maintains a different household, conditional transfer in return for visitation or custody would result in pareto improvements. This then implies that a 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 (1998) who found that child support receipts rose among adopting states, while Boca and Ribero (1998) found evidence of greater private transfers among joint custody families. I will add support by showing that educational attainment among children of divorced families was higher on average in adoption states.

Rasul (2006a) extended this analysis by examining parental choice in investment and custody in the event of divorce, within a marriage. He argues that 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 negative for the other spouse). Only for spousal relationships where joint custody is optimal (characterized by similar parental valuations for child welfare), would incremental custody to either parent raise their investments. This means that if relationships are characterized by higher relative valuations for children by mothers, the optimal custodial arrangement would still favor mothers, leaving child outcomes 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 the increase in the father's, leaves child outcomes 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 Allen and Brinig (2005), Brown, Melli, and Cancian (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, there should not be significant increase in joint custodial arrangements or changes in child outcomes.

# 3 Empirical Analysis

The coding of the custody law for each state is based on a careful review of respective custody laws, and tracing through its various amendments to ensure consistency. I distinguish custody laws which considers joint custody an option only if parents are in agreement, from one which gives due consideration on application by a parent [4]. The argument for this coding is that if agreement is not necessary, the threat of contesting for joint custody is not credible, and cannot affect intra-household bargaining power.

The data is derived from the IPUMS decennial Census for the decades from 1970 to 1990 including observations from all 50 states and the District of Columbia. The paper focuses on children of parents born within the above states between the ages of 15 to 18 from divorced and separated parent, and intact families. This isolates children that would have lived through the various legal regime switches without any overlap across the decades, and reduces the bias created when children reach the age of majority. I

[4]The appendix reports results using other codes including that by Brinig and Buckley (1998). The results are qualitatively similar.

use educational attainment of children as a measure of the children's outcome. This is motivated firstly by the relationship between parental investment in terms of financial support and other non-pecuniary investment such as time, and variation in a child's educational attainment. Secondly, discord within the family may cause variation in a child's attainment vis-*à*-vis their peers. Lastly, it's a good measure across time of a child's outcome in relation to her peers.

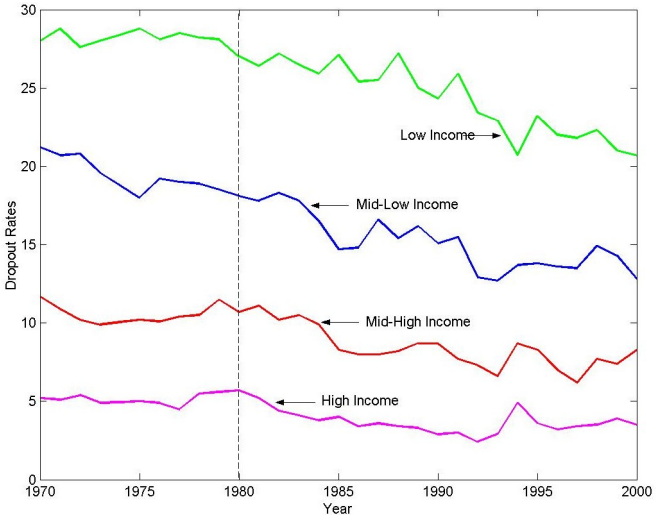
For this section and the following, both divorced and separated parent families will be treated as similar family structures since theoretical exposition does not differentiate between the two. Since the article focuses on children within wedlock, the sample excludes children of unmarried parents. Although they are a growing sub-group whose dynamics may not be the same as children born within wedlock, as an increasingly common phenomenon they are rare in the sample used since children between the ages of 15 to 18 in 1990 would have been born in the early half of the 1970s. The following empirical analysis also does not distinguish between children living with a single mother or father because the latter makes up only a small proportion of the sample. Although this will increase the variance, it also means that should the estimates yield statistical significance, the veracity of the findings would be emphasized.

## 3.1 Description of Dataset

The period in which most states were accepting Joint Custody as a viable custodial arrangement also saw falling dropout rates among youths between the ages of 16 to 24 (See figure 2). The greatest change came among youths from low income families, which consist typically of single parent households, from about a 28% dropout rate in 1975, to 21% in 2000. This is largely a 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)).

Figures 3 and 4 plots the average attainment from 1960 to 2000 among 18 year old children of single parent (divorced and separated), widowed parent and intact families using the IPUMS dataset including 1960 and 2000. I separate the observations into states which adopted joint custody (Figure 3) and states which did not (Figure 4). Both figures show a similar upward trend in average years of education as suggested by the fall in

Figure 2: Dropout Rates among Persons 16-24 Years of Age by Family Income Groups




Source: National Center of Education Statistics: Digest of Education Statistics.

dropout rates, with the gap between children of single parent (divorced and separated) and intact families visibly narrowing.

Although according with expectations, children of intact families continue to outperform children of other family structures, the rate of increase among single parent families were faster than intact families in adopting states (figure 3), while the growth rate of both family structures were parallel in non-adopting states (figure 4). The path of children from widowed families was included to allow for comparison with single parent families (divorced and separated) to highlight their divergence in this period. The immediacy of the impact of joint custody law adoption on custody arrangements, and its timing and coverage suggests a direct link.

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. Examining children of intact families, there was a higher rate of improvement over time among non-adopting states instead. The pattern is similar for children in the other age groups.

Figure 3: Comparison of Educational Attainment of Children Aged 18 from 1960-2000 by Family Type in Adopting States by 1990

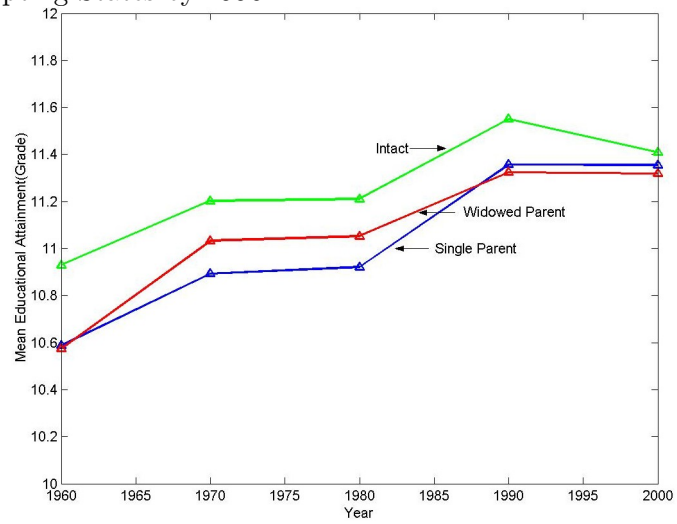



Figure 4: Comparison of Educational Attainment of Children Aged 18 from 1960-2000 by Family Type in Non-Adopting States by 1990

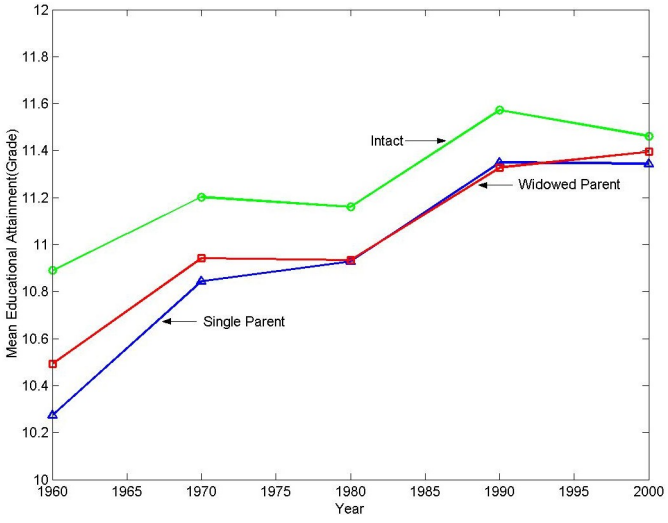


Table 2: Educational Attainment by Family Structure

| 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: Summary Statistic of Parents, by Gender and Family Structure

| | Adopting States | | Non-Adopting States | |
|---|---|---|---|---|
| | Before Joint Custody (1980) | After Joint Custody (1990) | Before Joint Custody (1980) | After Joint Custody (1990) |
| | Mean Income ($ ,000) | | | |
| Mothers of Intact Families | 8.44 | 11.46 | 8.28 | 12.17 |
| | (10.89) | (12.47) | (10.88) | (13.44) |
| Number of Observations | 54268 | 36681 | 13647 | 9650 |
| Divorced & Separated Women | 17.05 | 18.67 | 15.17 | 18.04 |
| | (12.58) | (14.20) | (11.44) | (14.45) |
| Number of Observations | 7421 | 7621 | 2006 | 1921 |
| Fathers of Intact Families | 37.98 | 37.77 | 35.80 | 38.41 |
| | (24.82) | (26.72) | (24.41) | (27.55) |
| Number of Observations | 54268 | 36681 | 13647 | 9650 |
| | Proportion Who Completed Grade 12 or Higher | | | |
| Fathers of Intact Families | 0.72 | 0.86 | 0.69 | 0.85 |
| Mothers of Intact Families | 0.75 | 0.88 | 0.73 | 0.88 |
| Divorced & Separated Women | 0.69 | 0.86 | 0.64 | 0.83 |

Standard Deviations are in parentheses.

Table 3 presents some summary statistics among parents in both adopting and non-adopting states in terms of income and educational attainment. For educational attainment, there is no differential between single (divorced and separated) mothers in adopting versus non-adopting states. This observation does not extend to income since single mothers in adopting states were marginally wealthier than their peers in non-adopting states. However, comparing intact couples in both adopting and non-adopting states, the difference in income was reversed with intact couples in non-adopting states being wealthier than they are in adopting states, highlighting the possibility of selection into divorce and separation states among parents.

## 3.2 Methodology

A state is an adoption state if the law is in place the year before the census year. There were twelve states which had not adopted joint custody by 1989 based on the definition used, to which was included the District of Columbia, which together makes up the control group. The treatment group consists of the remaining thirty eight states. Identification of the effect 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,

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

$y_{ifast}$ 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 the number of siblings, 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 divorced or separated 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 variable and its coefficient is interpreted as the reduced form effects on child quality from permitting joint custody, possibly through the law's effect on parental investment. For each of the models tabulated below, estimation was performed with and without state specific time trends ($t \times S_s$), where $t$ takes on the values 1 to 3 for each census year respectively from 1970 to 1990. Although the year, state, state specific time trends and interaction effects would capture any differential in educational standard across states and the growth in

educational attainment, it does not account for selection. That is unless the effect of selection into different family structures can be shown to be insignificant, the coefficient for $joint_{st}$ would capture a gross effect of joint custody. I will use model (1) as the baseline model against which the other models would be compared.

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

$$y_{ifast} = \Gamma X_i + \alpha joint_{st} + \beta \left(joint_{st} \times F_f\right) + \theta_1 A_a + \theta_2 Y_t + \theta_3 S_s + \theta_4 F_f + \theta_5 \left(A_a \times F_f\right) + \epsilon_{ifast} \tag{2}$$

This formulation discerns between the regime shift's effect on both intact and single parents (divorced and separated), using the families in the same family structures in the non-adoption states as the control group. I use the IPUMS educational attainment codes as the realization of the latent child quality. Since these are just ordered responses, I estimate the above models using Ordered Probit[5]. I will also examine if the use of least squares alters the results using the March Current Population Survey data from IPUMS among intact families.

For regressions using equation (1), the marginal effect of joint custody reported is for the *marginal change in probability of a child of age 18 attaining grade 12 or higher due to the adoption of joint custody.* That is

$$\sum_{j=7}^{9} \left[\widehat{\phi}\left(g = j|\overline{\widetilde{X}}, joint_{st} = 1\right) - \widehat{\phi}\left(g = j|\overline{\widetilde{X}}, joint_{st} = 0\right)\right] \tag{3}$$

where $\widehat{\phi}$ is the estimated normal density and $\overline{\widetilde{X}}$ is the vector of means of the variables. When I do not discern between the effects of custodial law by family structure, this marginal effect is for all children. That is it should be interpreted as the average effect of joint custody adoption on the probability of attaining grade 12 or higher across all children of age 18 regardless of family structure. However where there is interaction between $joint_{st}$ and $F_f$, the marginal effects differ for children of differing family structures, and what is reported is the following: for children of intact families, the average effect of the regime

[5]Another way to estimate this without altering the data is to use interval regression. In results not reported here, I found that this produced similar results.

shift on them is as expression (3) since $F_f$ is 0. For children of single parent families, the marginal effect is

$$\sum_{j=7}^{9} \widehat{\phi}\left(g = j|\overline{\widetilde{X}}, joint_{st} = 1, joint_{st} \times F_f = 1, F_f = 1\right)$$
$$- \sum_{j=7}^{9} \widehat{\phi}\left(g = j|\overline{\widetilde{X}}, joint_{st} = 0, joint_{st} \times F_f = 0, F_f = 1\right) \quad (4)$$

computed at the characteristic means of a child in that family structure.

These computations were performed separately for each regression and are reported on the third row of each triplet for the joint custody impact variables, and framed in braces. The first row of each triplet reports the estimated coefficient, while the second row reports the standard errors framed in brackets. The standard errors reported were corrected for heteroscedasticity. Although the article reports the result in terms of children at age 18 as the illustrative benchmark, parallel results for children of age 15 to 17 attaining grades 9 to 11 respectively were similarly calculated. The fall in probability for the other age groups are similar with the exception of children of age 15. This is because the lower tail of educational attainment realization is bunched up due to census coding and consequently reduces variation.

# 4 Effect of Joint Custody on Child Attainment

## 4.1 Baseline Results

Column 1 of Table 4 presents the baseline result of model (1), while column 2 reports the results for model (1) with state specific time trend. The probability of attaining the same outcome if joint custody was not adopted is above each column, $\widehat{\phi}\left(g \geq 7|\overline{\widehat{X}}, joint_{st} = 0\right)$. Both the predicted probability and marginal impact are calculated at the mean of the covariates, $X$.

The result of column 1 says that the probability a child from a state which had adopted joint custody attaining grade 12 or higher at 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

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

| Dependent Variable: Grade Attained | | | | |
|---|---|---|---|---|
| | Baseline | 2 | 3 | 4 |
| Predicted Probability | 0.37738 | 0.37767 | 0.37736 | 0.3782 |
| Joint Custody | -0.025‡ | -0.03 | | |
| | [0.012] | [0.019] | | |
| | {-0.0096} | {-0.0113} | | |
| Joint Custody Adopted | | | 0.038† | -0.007 |
| for 1-4 Years | | | [0.013] | [0.019] |
| | | | {0.015} | {-0.003} |
| Joint Custody Adopted | | | -0.027* | -0.063† |
| for 5-8 Years | | | [0.014] | [0.023] |
| | | | {-0.01} | {-0.024} |
| Joint Custody Adopted | | | -0.068† | -0.041‡ |
| $>$ 8 Years | | | [0.012] | [0.021] |
| | | | {-0.025} | {-0.016} |
| State & Year Effects | ✓ | ✓ | ✓ | ✓ |
| Age & Cohort Effects | ✓ | ✓ | ✓ | ✓ |
| State Trends | | ✓ | | ✓ |
| Parental Education | ✓ | ✓ | ✓ | ✓ |
| Family Type | ✓ | ✓ | ✓ | ✓ |
| Number of Siblings | ✓ | ✓ | ✓ | ✓ |
| Family Income | ✓ | ✓ | ✓ | ✓ |
| Observations | 272127 | 272127 | 272127 | 272127 |
| log Likelihood | -316990.12 | -316622.75 | -316938.04 | -316617.5 |
| % Correctly Predicted | 0.47 | 0.48 | 0.48 | 0.48 |

Notes:

*significant at 10%; ‡significant at 5%; †significant at 1%

Robust standard errors adjusted for heteroscedasticity are in brackets. Marginal change in probability, for probability of attaining grade 12 or higher at age 18, is in braces. The predicted probability for attaining grade 12 or higher at 18, if Joint Custody was not adopted, is 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.

specific trends did not yield any significant increase in predictive power, likelihood ratio test rejects the restriction that there are no trends.

Columns 3 and 4 accounts for the possibility that there may be differential in effect due to length of exposure to the law by dividing the adoption states into 4 year adoption intervals after the regime shift, where column 4 controls for state specific trends. From column 3, note that the marginal effect of joint custody adoption increases by duration of exposure, with the estimated decrease in probability of attaining grade 12 or higher at 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. Although the effect is positive and significant after 1 to 4 years of exposure, the sign switched with the inclusion of trend in column 4 and is insignificant, while the other exposures remain of the correct sign and statistically significant.

## 4.2 Differential Effect by Family Structure

The lack of consistency in the results of the previous section could be due to differential in impact on children of the various family structures. To isolate the effect of joint custody by the family structure, I interact the joint custody variable with the family structure indicator variable and report the results in table 5 together with other variations of equation (2). A priori, based on the findings of Boca and Ribero (1998), children of single parent families should be better off. Columns 1 and 2 include all covariates, while columns 3 to 6 examine the robustness of the findings to other specifications. As noted in section 3, the marginal effect of joint custody reported is interpreted as the marginal effect on children of intact families, but the marginal effect on the interaction of joint custody and family structure is interpreted as the effect of joint custody on children of single parent families and is the sum of the effect of joint custody on the probability of attaining grade 12 or higher at 18, and the direct effect of joint custody on children from divorced and separated parent families, as noted in expression (4). Put another way, it is the net change in the probability for a child from a single parent family.

Results reported in columns 1 and 2 accords with the arguments made by Weiss and Willis (1985), suggesting that the opportunity of exchanging custody or visitation for support payment or other transfers could raise contribution from a non-custodial parent. The net effect on a child of a single parent family from an adoption state was on average be 3.7% and 2.7% higher, without and with trend respectively for columns 1 and 2.

Table 5: Decomposition of Impact Joint Custody by Family Type

| Dependent Variable: Grade Attained | | | | | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| Predicted Probability | 0.37729 | 0.37752 | 0.38076 | 0.38157 | 0.37823 | 0.3786 |
| Joint Custody | -0.039† | -0.042‡ | -0.044† | -0.054† | -0.045† | -0.050† |
| | [0.012] | [0.019] | [0.012] | [0.019] | [0.012] | [0.019] |
| | {-0.0149} | {-0.0158} | {-0.0168} | {-0.0206} | {-0.0171} | {-0.0189} |
| Joint Custody × Single Parent | 0.076† | 0.069† | 0.086† | 0.079† | 0.082† | 0.075† |
| | [0.015] | [0.015] | [0.015] | [0.015] | [0.015] | [0.015] |
| | {0.0139} | {0.0103} | {0.0159} | {0.0095} | {0.0139} | {0.0095} |
| State & Year Effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Age & Cohort Effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| State Trends | | ✓ | | ✓ | | ✓ |
| Parental Education | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Number of Siblings | ✓ | ✓ | | | ✓ | ✓ |
| Family Income | ✓ | ✓ | | | | |
| Observations | 272127 | 272127 | 272127 | 272127 | 272127 | 272127 |
| log Likelihood | -316975 | -316610 | -318077 | -317713 | -317473 | -317105 |
| % Correctly Predicted | 0.48 | 0.48 | 0.48 | 0.48 | 0.47 | 0.48 |

Notes:

Robust standard errors adjusted for heteroscedasticity are in brackets.

‡significant at 5%; †significant at 1%

Marginal change in probability, for probability of attaining grade 12 or higher at age 18, is in braces. The predicted probability for attaining grade 12 or higher at 18, if Joint Custody was not adopted, is 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.

For children of intact families the effect on educational attainment is negative and significant. If the joint distribution of parental valuations for child quality is dominated by families with higher maternal valuation, there should not be any significant effect due to joint custody adoption. If instead the proportion of families characterized by similar valuations is significantly large, the results here are 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 effect of the withdrawal dominates, there would be a negative effect; 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 at age 18 by 3.9% and 4.2% respectively. It is note worthy that the magnitude of this change is stronger than the positive effect on children of single parent households. Thus rather perversely, this suggests that joint custody has reduced the attainment gap between children of intact and single parent households through a stronger negative effect on children of intact families. Back of envelope calculations using the mid-point of the educational attainment 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. We will compare the former result with the CPS dataset in the following section.

Columns 3 to 6 examine the robustness of the results to differing specifications. If endogeneity is strong, there should be substantial variation in the results across the columns, but note the qualitative and quantitative similarity of the results. For instance from column 3 and 4 where all family characteristic variables were excluded, with the exception of parental education which is determined prior to marriage, the estimated reduction in the probability is 4.4% for children of intact families, 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.

## 4.3 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, it cannot be said with certainty that the exposure estimates of table 4 represents the transition each state goes through. The above analysis is now augmented by using the March Current Population Survey (CPS) from IPUMS between 1977 and 1991. Since there were only a small number of single parent family observations, I focus on children of intact families and exclude the family structure indicator. The control group here then is children of intact families of non-adoption states. That is this section verifies the effect of joint custody on the intact family.

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

$$\overline{g}_{ast} = \gamma_1 joint_{st} + \gamma_2 A_a + \gamma_3 Y_t + \gamma_4 S_s + \gamma_5 \left(A_a \times Y_t\right) + \eta_{ast} \tag{5}$$

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

False inferences due to serial correlation is of particular concern in performing the analysis of equation (5) (Bertrand, Duflo, and Mullainathan 2004). In lieu of this, the standard errors in panel A were corrected for clustering on state by year, while those in panel B are corrected for clustering on the state level as suggested by Bertrand, Duflo, and Mullainathan (2004). If the result stood at this level, it would strengthen confidence in the findings.

It is not surprising that neither of the estimates in columns 1 and 2 were statistically significant since they reflect the difference between the year of adoption and the year prior. Columns 3 and 4 reports the effect of joint custody for 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

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

| Mean Number of Years of Schooling Among 18 Year Olds: 1.29048 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dependent Variable: | Panel A Grade Attained | | | | Panel B Mean Grade Attained by State, Year, Age Cells | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Joint Custody | -0.009 | -0.004 | | | -0.013 | -0.001 | | |
| | [0.012] | [0.013] | | | [0.016] | [0.018] | | |
| Joint Custody | | | -0.017 | -0.023‡ | | | -0.016 | -0.02 |
| 1-4 Years | | | [0.011] | [0.011] | | | [0.014] | [0.015] |
| Joint Custody | | | -0.038† | -0.047† | | | -0.043† | -0.050† |
| 5-8 Years | | | [0.015] | [0.016] | | | [0.015] | [0.014] |
| Joint Custody | | | -0.029 | -0.045‡ | | | -0.056† | -0.055* |
| $>$ 8 Years | | | [0.019] | [0.022] | | | [0.020] | [0.029] |
| State & Year Effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| State Trends | | ✓ | | ✓ | | ✓ | | ✓ |
| Parental Education | ✓ | ✓ | ✓ | ✓ | | | | |
| Number of Siblings | ✓ | ✓ | ✓ | ✓ | | | | |
| Observations | 105390 | 105390 | 105390 | 105390 | 3058 | 3058 | 3058 | 3058 |
| $R^2$ | 0.57 | 0.57 | 0.57 | 0.57 | 0.98 | 0.98 | 0.98 | 0.98 |

Notes:

*significant at 10%; ‡significant at 5%; †significant at 1%

Cohorts are calculated based on date of birth, using year of interview - age.

Regressions for individual observations are weighted by individual weights, while regressions 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.

5 to 8 years and more than 8 years of exposure respectively, all of which are statistically significant. What is interesting is that the estimates are very similar to that generated by the prior analysis using census data based on back of envelope calculations.

As in panel A, the estimated effect in columns 5 and 6 in panel B are never significant when exposure duration is ignored. While the estimated effect in columns 7 and 8 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 missing observations due to children reaching the age of majority might create a bias in the 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, the estimates would be biased upwards. Since the results thus far are statistically significant and negative, it suggests that such a case is not a problem. However, if these 18 year olds who may be missing are systematically better off, the estimates would be biased downward. In examining this possibility, I considered sub-samples excluding children aged 18, and aged 17 and 18, and found the results to be similar [6].

## 4.4 Impact of Unilateral Divorce

The discussion in this section reverts back to the census data. The regime shift in custody law 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. The effects of this regime shift has been studied by Friedberg (1998), Gruber (2004), Mchoulan (2006), Rasul (2006b), Stevenson (2007) and Wolfers (2006). I have not controlled for the preceding change in this divorce law that took place in the 1970s, which essentially reduced the cost of divorce. The result of the "no-fault divorce" revolution partially led to a surge in divorce rate over the 1970s. The Bargaining Threat 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 (Gruber 2004). It is possible that the joint custody indicator is picking up the effects of the increased ease in divorce. I 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:

$$\begin{aligned} y_{ifast} &= \Gamma X_i + \alpha joint_{st} + \beta\left(joint_{st} \times F_f\right) + \gamma divorce_{st} \\ &\quad + \theta_1 A_a + \theta_2 Y_t + \theta_3 S_s + \theta_4 F_f + \theta_5\left(A_a \times Y_t\right) + \epsilon_{ifast} \end{aligned} \tag{6}$$

[6] Qualitatively the results are similar, with the exception that estimates for children with more than 8 years of exposure are no longer statistically significant. The strongest effect was in the 5 to 8 year range of exposure which was similar to those reported in table 6. Results are available from the author upon request.

where $divorce_{st}$ is the unilateral divorce indicator variable. I use the coding by (Gruber 2004), and focus on unilateral divorce without separation requirement [7]. The interpretation for $\gamma$ is the average effect on all children due to the regime shift in divorce law. I also interact $divorce_{st}$ with the family structure indicator, $F_f$, to discern between effects by family structure. The effects of the individual laws are identified, with 14% of the observations residing in states with neither law, 6% with only unilateral divorce, 30.8% with only joint custody and 49.2% with both laws.

Columns 1 and 2 report the effect of joint custody and unilateral divorce without interaction with family structure dummies, which is included in columns 3 to 4. From columns 1 and 2, the inclusion of unilateral divorce dampens the estimated average effect of joint custody compared to the results of before. However, the coefficient without trend remains statistically significant.

When I control for differential in effect by family structure in columns 3 and 4, the probability of attaining grade 12 and higher at 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 of a single parent household is 2.7% and 1.8% respectively. Although the average effect of unilateral divorce adoption remains statistically insignificant, note that the net effect on children of single parent households is statistically significant and positive.

# 5 Changes in the Composition of Family Structures

Although the results are robust to the inclusion of unilateral divorce laws, if the adoption of joint custody had compositional effects, the above regressions cannot discern between the channels through which joint custody law operates. Further, previous research (Friedberg (1998); Gruber (2004); Wolfers (2006)) found that the adoption of unilateral divorce was partially responsible for raising the divorce rate when most of the children in the 1990 sample were born. Should there be compositional changes, the results regarding the

[7] There is debate over the correct unilateral divorce coding. I examined the robustness of the results to alternative unilateral divorce coding in appendix A.2. The findings are not affected by the choice.

Table 7: The Effect of Joint Custody and Unilateral Divorce Law

| Dependent Variable: Grade Attained | | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| Predicted Probability: | 0.37847 | 0.37689 | 0.37842 | 0.37613 |
| Joint Custody | -0.024‡ | -0.029 | -0.036† | -0.039‡ |
| | [0.012] | [0.019] | [0.012] | [0.019] |
| | {-0.0091} | {-0.0111} | {-0.0136} | {-0.0145} |
| Joint Custody × | | | 0.063† | 0.056† |
| Single Parent | | | [0.016] | [0.016] |
| | | | {0.0104} | {0.0066} |
| Unilateral Divorce | -0.009 | 0.005 | -0.016* | 0.002 |
| | [0.009] | [0.016] | [0.009] | [0.016] |
| | {-0.0033} | {0.0018} | {-0.006} | {0.0006} |
| Unilateral Divorce × | | | 0.046† | 0.047† |
| Single Parent | | | [0.014] | [0.014] |
| | | | {0.0115} | {0.0187} |
| State & Year Effects | ✓ | ✓ | ✓ | ✓ |
| Age & Cohort Effects | ✓ | ✓ | ✓ | ✓ |
| State Trends | | ✓ | | ✓ |
| Parental Education | ✓ | ✓ | ✓ | ✓ |
| Family Type | ✓ | ✓ | ✓ | ✓ |
| Number of Siblings | ✓ | ✓ | ✓ | ✓ |
| Family Income | ✓ | ✓ | ✓ | ✓ |
| Observations | 272127 | 272127 | 272127 | 272127 |
| log Likelihood | -316990 | -316623 | -316968 | -316603 |
| % Correctly Predicted | 0.47 | 0.48 | 0.47 | 0.48 |

Notes:

*significant at 10%; ‡significant at 5%; †significant at 1%

Robust standard errors adjusted for heteroskedasticity are in brackets. Marginal change in probability, for probability of attaining grade 12 or higher at age 18, is in braces. The predicted probability for attaining grade 12 or higher at 18, if Joint Custody was not adopted, is 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.

effect of the regime shift in custody law cannot discern between the effect on parental investments (both pecuniary and non-pecuniary) and marital decisions.

I address the above concern by examining whether the introduction of joint custody changed the likelihood a child lives with a single parent. The proportion of children living with a single parent by state, year and age for all children from ages 15 to 18 was calculated using the same census sample [8]. In addition to the sample of 1970 to 1990, I included 1960 into these regressions here to adequately capture any preexisting trends in divorce. The regression performed is as follows

$$f_{ast} = \alpha_0 + \alpha_1 joint_{st} + \alpha_2 divorce_{st} + \alpha_3 R_{ast} + \alpha_4 A_a + \alpha_5 S_s + \alpha_6 Y_t + \alpha_7 (A_a \times Y_t) + \epsilon_{ast} \quad (7)$$

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 children born outside of wedlock were excluded and the particular age range of children used here. The results are presented in table 8. For each regression, I perform one with and the other without state specific trend, and to account for serial correlation, I corrected the standard errors for clustering on state (Bertrand, Duflo, and Mullainathan 2004). The analysis is nested, where the rate of parental divorce and separation are first examined in columns 1 to 4, followed by considerations of the choice between separation and divorce given that the children are living in a single parent family structure reported in columns 5 to 8.

For the choice between remaining in an intact family or becoming a single parent family reported in columns 1 to 4, 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 not statistically significant and were never estimated with accuracy. This is not particularly surprising considering that the youngest families in the sample, families of the 1990 and 2000 sample, would have been formed at the apex of the divorce revolution of the 1970s, which considering the fall in marital rates (Rasul 2006b), these marriages

[8]The same exercise was performed for all children from age 0 to 18, the results of which were similar to Gruber (2004). I have not included it in the study here principally because by extending the ages to 0, the sampled age group then straddles 2 decades. However, each family at the opposing extremes is at differing spans of a family's "life-cycle". The results can be obtained from the author.

would have occurred due to high marital valuation (been strong matches), implying that marital dissolution would have been random. The same argument could be applied to understanding the effect of joint custody legislation.

Column 5 which examines the choice between separation and divorce shows 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 differential in exposure is accounted for. Column 7 suggests 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. The estimated effect of unilateral divorce on the proportion of children living with a divorced parent is significant without trend, but the sign switches with its inclusion. Intuitively, it is plausible that joint custody may reduce the value of obtaining a divorce judgement particularly if it means that a spouse may have to share the custody of the child. On the other hand, the no fault divorce revolution should favor obtaining a divorce judgement, suggesting that the insignificant effect here is a result of the random incidence of divorce.

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. Although the evidence regarding movements between separated and divorced families is ambiguous, it does not affect the analysis since bargaining in both family structures take place "in the shadow of the law" (Mnookin and Kornhauser 1979). This section thus suggests that the results are from changes in parental investment behavior, and not due to marital choices.

Table 8: Compositional Effects of Joint Custody & Unilateral Divorce, 1960-1990

| Sample: | Children 15-18, including children from intact & single parent households only. | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Dependent Variable: | Proportion of Children living with a Single Parent | | | | Proportion of Children living with a Single Divorced Parent Given Single Parent Household | | | |
| Mean: | 0.11308 | | | | 0.65474 | | | |
| | 1 | 2 | 3 | 4 | | | | |
| Joint Custody | 0.00352 | 0.00660 | | | -0.08196† | -0.02070 | | |
| | [0.00746] | [0.00791] | | | [0.02240] | [0.03260] | | |
| 1-4 Years | | | 0.003010 | 0.00205 | | | -0.07990† | -0.02456 |
| | | | [0.00645] | [0.00674] | | | [0.02366] | [0.03532] |
| 5-8 Years | | | 0.00502 | 0.00910 | | | -0.05686* | -0.02780 |
| | | | [0.00534] | [0.00770] | | | [0.03211] | [0.02858] |
| $>$ 8 Years | | | 0.00326 | 0.00602 | | | -0.04372 | -0.00254 |
| | | | [0.00676] | [0.00901] | | | [0.02962] | [0.03276] |
| Unilateral Divorce | -0.00094 | -0.00774 | -0.00115 | -0.00680 | -0.06251‡ | 0.01496 | -0.06196‡ | 0.0163 |
| | [0.00260] | [0.00535] | [0.00262] | [0.00553] | [0.02642] | [0.03008] | [0.02694] | [0.0296] |
| State & Year Effects | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| State Trends | | ✓ | | ✓ | | ✓ | | ✓ |
| Observations | 816 | 816 | 816 | 816 | 816 | 816 | 816 | 816 |
| $R^2$ | 0.91 | 0.93 | 0.91 | 0.93 | 0.76 | 0.82 | 0.76 | 0.82 |

*significant at 10%; ‡significant at 5%; †significant at 1%

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.

# 6 Discussion and Conclusion

This article has established suggestive evidence that children of single parent families, through divorce or separation, seem to be better off in terms of a higher number of years of education and increased probability of high school graduation. This finding reinforces previous findings by Brinig and Buckley (1998) and Boca and Ribero (1998). However, the results suggest that children of intact families had lower number of years of education or lowered probability of graduation, which is a new unexpected finding. The results are robust to specification, use of alternative data set, 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.

Perhaps it is inconceivable that altruistic parents might wager their child's wellbeing on account of a change in law that would only affect them in an event that may never arrive. If the suggested proportion of marginal families required to bring about this result is large, there might be justification for serious concern with regards to the results and its veracity. As noted, back of envelope calculations yielded 0.034 years less education for children of intact families. How many children would there need to be for a change of such a magnitude? Suppose there are only two realizations, children either move on to grade 12 or quit after the $11^{th}$ year and besides $x$ number of children in intact families that will be affected by the law in the adoption states, everyone else in both adoption and non-adoption states are completely the same (Those not affected by the law would continue on to the grade 12). This would mean that out of every one hundred children, approximately 3 children would be from families that are affected by joint custody adoption. However, it is an exaggeration to presume that the deviation in outcome be so minimal between the marginal and average intact family. As the deviation increases (the difference in the eventual number of years of education between the marginal and typical intact family), the number of children who may be affected decreases; for example an increase of an additional year of differential in educational attainment reduces the number of children affected by the law to approximately 2 per 100 (or approximately one child in each classroom), and it falls even further as variation increases.

Further the lack of significant evidence suggesting compositional changes or movement between different family structures subsequent to the regime shift strengthens the possibility that the results are due to behavioral changes generated by the adoption of joint custody. Based on the model by Rasul (2006a), the result here would be generated 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 significant among divorced families. If that distribution of valuation among divorced couples holds true among intact families, the negative outcome among children of intact families suggests that the withdrawal of investment among mothers have overshadowed the increase in investment among fathers in intact families. This could be manifested in terms of the 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, Pollak, and Wales 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 [9], which are subjects of future research.

Nonetheless, the lack of evidence for changes in composition does not negate the possibility that the results are partially a result of selection. Consider the following argument; if all that occurs is the "trading of places", where good fathers who otherwise would not have divorced choose to divorce, while relatively inadequate fathers choose not to divorce because of the additional commitment in the divorce state, and if those proportions are similar, then there will not be any change in the likelihood of children living with a divorced parent as a result of custody law amendments, and yet the changes in outcome is purely a result of selection.

Another possible explanation is causality; what if parents of the early 1970s were more predisposed to advancing personal careers, particularly mothers. Then it is not joint custody that is causing the change in child investments, but that the implementation of

[9]In attempting to understand the mechanism at work, I examined the laws' effect on parental labor supply decisions, particularly the changes in labor supply decisions among parents of intact families with the 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, Garfinkel, Mclanahan, and Miller (1996) in examining child support trends, noted that the fall in fathers' incomes could explain declines in award rates. However, joint custody adoption's effect on maternal labor supply and labor participation decision was never significant.

the law is a translation of the trend toward equal parenting expectations among parents. The reduced form analysis would not be able to account for this.

A final caveat is in order. Firstly, 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 attainment among children in differing family structures, it is incorrect to claim that the family unit is better off or otherwise since it is possible that the status quo had confined the family to functioning sub-optimally. Second, I have been able to abstract from the law's effect on marriage decisions, but based on the findings here, the law may have changed the gains to marriage. Then to understand the full extent of the effect, the empirical analysis could be extended to marriage rates and the types of matches that occurred subsequent to the regime change, an idea that warrants future examination.

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