How Do the Impacts of Parental Divorce on Children's Educational and Labor Market Outcomes Change Based on Parents' Socioeconomic Backgrounds?

by

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A thesis submitted in partial fulfillment
of the requirements for the
Degree of Bachelor of Arts with Honors
in Economics

WILLIAMS COLLEGE

Williamstown, Massachusetts

May 11, 2010

Abstract

One in two marriages in the United States ends in divorce. Close to 30% of children under 18 live in single-parent households. Disruption of many traditional households raises the question of how divorce affects children's later outcomes. This paper investigates the impacts of parental divorce on children's educational and labor market outcomes, and studies the mitigating effects associated with parents' socioeconomic backgrounds. Using NLSY79-Child data, I find that divorce reduces children's educational achievements, and that mother's education and annual earnings mitigate this impact. Little evidence is found for any significant impact of divorce on children's labor market outcomes. In general, divorce affects girls more, and parental resources also benefit girls more than boys.

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Acknowledgments

I would like to thank a number of people who have made this thesis possible.

To start with, I am obliged to Professor Sara LaLumia for her guidance throughout the year and her patient readings of every draft. Her optimism and passion for economics have continued to inspire me. I have learned from her much more than economics theories alone.

I am indebted to Professor Lucie Schmidt, Professor David Zimmerman and Professor Tara Watson for their excellent suggestions on how to revise my thesis.

I thank the Economics Department at Williams College for the great 1960s seminar series, which has given me many ideas for my own work. Thanks to the Department, I also had the wonderful opportunity to present my preliminary results at the annual conference of the Midwest Economic Association in Evanston.

I am also grateful to Professor Nicholas Wilson and the Office of Information Technology at Williams for their assistance on obtaining the NLSY79 geocode data.

Last but not least, I would like to thank my parents and my friends for their moral support throughout the process. Special thanks go to Aom Kitichaiwat for her excellent cooking which has kept me from starving.

I welcome any comment on the paper. All errors are my own.

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I Introduction

Ten days after taking office, President Barack Obama established a White House Task Force on Middle Class Working Families. One of the guiding principles of the Task Force is to strengthen families. He believes that a strong nation is made up of strong families and every family deserves the chance to make a better future for themselves and their children.[1] However, compared to households headed by married couples, single-parent families with children are often at a disadvantage. In 2008, 4.1 million or 33%[2] of all single-parent households with children under 18 fell below the poverty level. Among children under 18 living in female-headed households in 2008, 56.2% lived below poverty. Although this number is the lowest in the past decade, it is still substantially higher than the 19.0% poverty rate among all children under 18 nationwide.

These statistics point to the hardships faced by children of single-parent and especially single-mother families. As single-parenthood becomes more common, this problem has become more prevalent. In 1960 only 9% of children under 18 lived with a single parent. But starting in 1970, the number of single-parent families began to grow rapidly. Figure 1, which maps this growth for the past four decades, shows that by 1998 about 28% of all children lived in single-parent households, more than triple the level in 1960. After that, the number leveled off and stayed roughly between 27% and 28% for the past decade. Among children living with one parent, the majority live with a single mother. Figure 2 shows the percent of these children among all children of single-parent families. Even though the number seems to have declined steadily since the 1970s, the trend picked up in recent years. In 2008, 86.6% of children living in single-parent households lived with mother. The rest of these children lived with father. This, accompanied by the high poverty rate among female-headed single-parent families, should raise concern among policymakers.

[1] The White House web site. http://www.whitehouse.gov/issues/Family [Accessed on 12/3/2009].
[2] Author's own calculation using data from the March Current Population Survey.

In order to better design social policies targeted at these children, it is necessary to understand how living in a single-parent and especially single-mother household affects a child's development and future outcomes. McLanahan and Sandefur (1994) argue that children growing up with a single parent are deprived of "important economic, parental, and community resources, and that these deprivations ultimately undermine their chance of future success." However, correlation does not imply causality. Growing up with a single parent is highly correlated with many socioeconomic factors that are associated with poorer outcomes. For example, Charles and Stephens (2004) find evidence that negative income shocks, in particular father's layoff, are associated with an increased probability of divorce. Children who live with a single parent because of divorce induced by negative income shocks may grow up with reduced economic resources. Fertig (2004) establishes a causal relation between low birth weight and parental divorce. Because low birth weight is associated with health issues later on, this may impede children's later success. Hence, children from single-parent households might fare worse not because they grew up with a single parent but because they are raised in disadvantaged environments.

Among factors influencing children's later outcomes are parental inputs during childhood and adolescence. In Becker's theoretical framework of household production (Becker, 1981) parents maximize utility through maximizing own consumption and the future utility of their children as adults. In this model, the well-being of a child depends on the expenditures on him, the reputation and contacts of his family, his genetic inheritance, and the values and skills obtained from a particular family culture. Becker argues that "children from successful families are more likely to be successful themselves by virtue of the additional time spent on them and also their superior endowments of culture and genes." From this perspective, children of single-parent families might lack the first element because of the absence of one parent. In addition, the drop in economic resources due to the absence of one parent may also diminish the expenditures on him.

However, based on Becker's model the disadvantages of living with a single parent are less if either (1) the custodial parent (most often the mother) earns enough income to maintain a certain standard of expenditure on the child; or (2) the custodial parent has higher levels of human capital and can make up for the absence of a parent through quality time spent with the child; or (3) the noncustodial parent (the absent parent) is wealthy and makes monetary transfers or gifts that benefit the child; or (4) the noncustodial parent has higher levels of human capital and is more willing to contribute to the child through money or time to make up for his absence.

Researchers in the past have studied the impact of living with a single parent on a wide range of socioeconomic outcomes and arrived at mixed conclusions. One of the complications is the difficulty of establishing causality as described above. Various approaches have been proposed to address this potential issue. Some examples include using double difference models on longitudinal data sets and using instrumental variables. However, many such studies focus on children's short-term performance and very few explore the longer-term outcomes using these improved methods. Moreover, very little attention has been given to the mitigating effects associated with parents' socioeconomic backgrounds.

I attempt to address two questions in this paper: (1) whether parental divorce has negative and significant impacts on children's later educational and labor market outcomes; and (2) whether (non)custodial parents' socioeconomic backgrounds have mitigating effects on the impacts of divorce. Following Keith and Finlay (1988) I use the parents' annual earnings and educational levels to proxy for socioeconomic background. In addition, I look at measures of child resources at home, school quality, and parental inputs to study how divorce influences children's outcomes through these channels. In particular, I look at measures of home environment to examine the channels through which custodial parent's presence changes the impacts of divorce. Because children of never-married, divorced and widowed parents likely suffer from the absence of a parent differently and behave differently as adults, in this paper I focus on one subgroup – children of divorced or separated parents (hereafter referred to as "divorced families"). Furthermore, I focus my attention on the educational and labor market outcomes of children as adults.

Using data from the National Longitudinal Survey of Youth 1979 Child and Young Adult (NLSY79-Child), I examine the impact of divorces occurring between a child's birth and the time he turns 18. I look at the impacts on high school diploma receipt, highest grade completed, grade retention, hourly rate of pay, the child's annual wage income, and hours worked per week reported in 2006. I also estimate gender-specific regressions on the educational outcomes to identify any gender differences.

This data set has four advantages. First, because of its longitudinal nature, both the inputs during childhood and later outcomes can be observed for each respondent. Second, the study provides a complete marital history of the mothers. This allows me to study divorces happening during the children's entire childhood and adolescence. Third, the Child sample has a financial history of the mother and her spouse starting in 1979. This makes it possible to observe the noncustodial parent(father)'s earnings level prior to divorce. Lastly, there are numerous measures of parental input, school quality and child resources at home. Because these inputs likely respond to divorce, I can control for these inputs in the regression model.

However, the NLSY79-Child also has several limitations. First, it is not a nationally representative sample. Although the mothers in this sample are from a nationally representative data set (the original NLSY79), the children only represent all the children born to the NLSY79 women when appropriate weights are used (NLSY79 Child & Young Adult Data Users Guide 2009). Second, many of the children are too young to have consistent labor market outcomes even in the most recent waves. However, the rich information and complete history of the children provided in the data set outweigh these disadvantages.

Results show that parental divorce reduces children's highest grade completed. But interacted regressions show little evidence of any mitigating effect associated with parental resources. On the other hand, divorce has adverse impacts on high school diploma receipt and grade retention only for children with low levels of parental resources. Mother's educational level and both parents' average annual earnings mitigate the effects of divorce on high school diploma receipt, while mother's annual earnings have mitigating effect on the impact on grade retention. In general, girls are affected more by divorce and also benefit more from parental resources. But for highest grade completed and grade retention, only boys benefit from father's resources. There is less evidence for the impact of divorce on children's labor market outcomes.

This paper contributes to the existing literature in two ways. First, it uses an interaction model to examine the potential mitigating effect of parents' educational and earnings levels on the impact of divorce. Prior literature has found a similar mitigating effect of mother's educational level (see for example Keith and Finlay (1988)), but to the best of my knowledge no study has explored the issue carefully. Looking at it another way, this paper investigates the heterogeneity in the effects of divorce. While the literature has produced evidence that divorce is negatively correlated with children's outcomes on average, there is less evidence on whether this average masks important variation across socioeconomic groups. This paper sheds some light on this issue. Second, using a longitudinal data set this paper examines some of the longer-term outcomes such as highest grade completed and labor market outcomes. Most of the recent literature looks at the impact of divorce on short-term outcomes such as performance in school and on standardized tests. These may be different than longer-term effects if children are able to adjust to life after divorce. This paper thus adds to the existing literature by updating the results on longer-term impacts during early adulthood.

The rest of this paper is organized as follows. Section II reviews previous literature and outlines the conceptual background. In Section III I provide a brief description of the sample data. Section IV lays out the methodology and regression specifications. Section V reports the empirical results and discusses implications of the results. Section VI extends the analysis to better understand the results. Section VII concludes.

II Background and Previous Literature

This paper examines the impacts of parental divorce on children's later outcomes within a household production framework. Here I lay out the theoretical background for the discussion of mitigating effects and discuss the major empirical results on the impacts of divorce on children's educational and labor market outcomes.

In his foundational work on the subject, Gary Becker (1981) presents a model of household production, in which the child's educational attainment and future income are treated as commodities desired by the household. Money and time spent on the child are key inputs in the production process. In the context of this model, single parents have less time and money to spend on their children. Consequently, children of single-parent households have access to lower levels of economic and social resources necessary for human capital development. This impacts the child's educational attainment through reduced financial resources for further and better schooling and through possible early entrance into the labor force (Krein and Beller, 1988). Lower educational attainments then translate into lower future earning potential. The difference in wage levels should be especially obvious among adults in their 30s when the wages of most people become more stable and fluctuate less than when they are younger.

The custodial parent's income can mitigate the negative impact of divorce through two channels. First, higher custodial parent income contributes to the welfare of the child by providing more resources for the child's physical and intellectual development. Second, the successful career of a custodial parent (associated with higher income) may create a role model or motivation for the child to work hard in school and at work. Previous research on the change in single parents' economic status following divorce has yielded mixed results. Duncan and Hoffman (1985) find that the family income of a white woman falls 30% on average in the year following a marital dissolution. More recently, Bedard and Deschênes

(2005) using an OLS model also find evidence of negative economic consequences of marital dissolution. However, results from an instrumental variable approach using the gender of firstborn child show that ever-divorced mothers have significantly higher levels of personal income and standardized household income than never-divorced mothers[3]. Further, the authors show that the higher personal income of ever-divorced mothers is mostly because of increased labor-supply intensity. This increased labor supply is likely associated with decreased time available to spend with the child. Because time is also a factor input in the household production process, the increased labor supply by ever-divorced mothers has theoretically ambiguous effects on children's outcomes.

Divorce reduces the income of the family because the noncustodial parent is no long part of the household. But he can and often does contribute through child support payment and/or voluntary gifts that benefit the child. In the model proposed by Weiss and Willis (1985), children are treated as collective consumption goods by the parents. In the event of a divorce or separation, the noncustodial parent has little incentive to contribute because of a loss of control over the allocative decisions of resources. The authors show that the post-separation transfers depend, among other things, on the tastes and relative incomes of the parents. In particular, a wealthy noncustodial parent has an incentive to transfer payment to maintain the standard of child expenditures if the custodial parent is unable to provide a similar standard through her own resources. Previous literature on child support has established a positive correlation between noncustodial father's income and child support award amounts (see for example Beller and Graham (1993), Robins (1992), and Teachman (1990)). If noncustodial parent's income is associated with more monetary contributions in general, then we can expect a mitigating effect on the impact of divorce.

In addition to income, educational levels of the parents are also important in the

[3] A related study by Ananat and Michaels (2008) using Quantile Treatment Effect methodology finds that the dissolution of first marriage increases the variance of women's income, although there is no significant effect on average.

household production process. As Robert Michael (1973) argues, education increases the efficiency in household production. Better educated custodial parents are likely to have better ability to combine the available resources to make productive investments in children. This could work through either more and/or better quality time spent with the child, or better ability to make the best decision on how to spend money for the child's development. For the noncustodial parent, higher educational levels may be associated with more involved and responsible parenting. King et al. (2004), for instance, find that fathers' socioeconomic circumstances, and especially education, are the most influential in explaining racial differences in nonresident father involvement. Stephen (1996) and Seltzer et al. (1989) both find that a higher level of education for noncustodial fathers is associated with more frequent contact with the child. For both parents, the mitigating effect associated with their educational levels may also work through the role model effect.

Based on the framework outlined thus far, I expect parental divorce to have negative impacts on children's later educational outcomes. At the same time, more advantageous parents' socioeconomic backgrounds provide higher levels of parental resources, which mitigate the impact of divorce. I look for empirical evidence to test the validity of model predictions. Previous empirical research on the impact of divorce on children's educational outcomes has yielded mixed results. Krein and Beller (1988) find that living in a single-parent family has a negative effect on adult educational attainment and the impact varies by the period and length of exposure. This study also finds larger effects on boys than on girls and no significant racial differences. Keith and Finlay (1988) find parental divorce to be associated with lower educational attainment in a sample of white respondents. Like many other works in the literature, these two papers suffer from the difficulty of assigning causality to the impact of divorce.

To address this difficulty, Sandefur and Wells (1997) look at the different experiences of siblings growing up in a single-parent household. Because younger siblings spend fewer years in an intact household, this method uses the difference in length of exposure to explain differences in outcomes while controlling for unmeasured family-specific characteristics. The study finds that longer exposures to a fatherless household reduce educational attainment. But as Lang and Zagorsky (2001) point out, this result may not be extended to comparisons between children from different households. More recently, Ginther and Pollak (2004) use sibling data from the NLSY79 and the Panel Study of Income Dynamics (PSID)) to examine four schooling outcomes among young adults. They find that when controlling for family characteristics such as parents' educational levels and family income, living in a single parent family does not have a significant impact on educational attainment.

In comparison, the impact of divorce on children's labor market outcomes is less direct. If in fact divorce reduces the children's human capital accumulated through education, their lower levels of human capital will eventually lead to lower earnings later on. However, this may not be the case if the children have low marginal returns to education, or if the individuals are substituting across different types of human capital. In this case, children of divorced families may start working earlier to supplement household income, and this early start may give them an edge in the labor market when they are young. As a result, the lower educational levels among children of divorced parents may be offset, at least in the short run, by their higher levels of work experience. Compared to the literature on children's educational outcomes, there are fewer studies on the labor market outcomes. McLanahan and Sandefur (1994) find that children of divorce are more likely to be neither working nor in school, and on average have fewer economic resources as adults. A longitudinal study by Kiernan (1997) on the British population finds that the negative effects of parental divorce on children's economic situations in adulthood are largely attenuated when controlling for pre-divorce differences. This points to the powerful selection effects of divorce arising from the fact that divorces occur in a non-random sample of households.

Using the NLSY79 data Lang and Zagorsky (2001) employ two approaches to explore the causal relationship between years spent in single-parent households and educational attainment. First they control for a large number of background variables. The results from this approach show that father's absence reduces the child's educational attainment while mother's absence reduces daughter's educational attainment. The second approach looks at parental death as an exogenous source of family disruption. This approach finds little evidence that either parent's absence reduces the child's educational attainment. But because the death of a parent likely impacts the child's life very differently from parental divorce or separation, results from this second approach can hardly be applied to other types of family dissolution. The authors also study the impact on the children's labor and household incomes in 1993 and find little evidence of significant impact using either approach. But because many of the respondents were still in their 20s in 1993, the labor incomes observed might not have been their potential income levels.

III Data

The National Longitudinal Survey of Youth 1979 (NLSY79) is a nationally representative random sample of young adults ages 14 to 21 in 1979. Subsequent rounds were conducted annually from 1980 to 1994 and biennially from 1996 to the present. The original NLSY79 was composed of three groups of respondents: a nationally representative sample of 6111 youths, a supplemental sample of 5295 poor white, black, and Hispanic youth, and 1280 young members of the military. Due to funding cutbacks, most of the military over-sample was dropped starting in 1985. The poor white over-sample was also stopped after 1990. Beginning in 1986, the National Institute for Child Health and Human Development funded a supplement to the NLSY79 that focused on developmental outcomes for the children of the original NLSY79 female respondents. Information is available on the mother's marital status and the parents' education and earnings levels for every year starting in 1979. As a result, the NLSY79-Child is a data set with rich details on two matched generations, which provides a unique opportunity to study interaction between parents' characteristics and the impact of divorce on children's later outcomes.

I apply four sample restrictions. First, I restrict the sample to children born between 1979 and 1988. For children born before 1979, the marital status and parents' characteristics are not observed, while children born after 1988 were still too young to have meaningful educational attainment or labor market information by 2006. Second, I restrict the sample to children born to households including both biological parents. The child supplement provides information on whether the child lived with both biological parents starting in 1984. But between 1979 and 1983, only the mother's marital status is available. To be consistent I restrict the sample to children born to married mothers[4]. Third, I drop those who were not staying with the mother after the marital dissolution, because important information

[4]For years when both variables are available, the correlation between mother married and living with both biological parents are all above 0.7815. This justifies using the mother's marital status to proxy for living with both biological parents.

is not available for a large part of their childhood. Lastly, I restrict the sample to children whose fathers are alive from birth to 18[5]. This eliminates cases of parental separation due to the death of a parent. These restrictions leave me with a total sample size of 3309. Table 1 shows the sample restriction process and changes in the weighted means of key variables following each step. Although the four restrictions reduce the sample size by almost half, they have very little effect on the sample characteristic, and so they preserve the characteristics of the original sample.

I observe a child's living arrangements from birth to 18. A child is classified as living in a divorced family if he lives away from the father for at least one year from birth to 18[6]. In my sample 1334, or about 40%, of the children are in the divorced group. This is higher than the national average reported by the Census. According to the Census reports, between 1979 and 2006, on average 21.9% of children under 18 lived with their mothers only. This highlights the fact that the NLSY child sample is not nationally representative. The especially high proportion of children living with only a mother is likely because of the young ages of the mothers when they gave birth. The weighted mean age of mother at child's birth is only 22.78 for the divorced group (see Table 2), compared to the median age of mothers at birth which is about 25-26 years old in 1985[7]. Although all the children in my sample were born to married mothers, the young ages of the mothers could mean less stable marital relationship formed before the birth of the child, and hence higher chances of divorce during later years[8].

I control for the child's gender, race, age in 2006, number of siblings and PPVT

[5]Because of the biennial nature of the data in later years, for children born in 1979, 1981, 1983, 1985, and 1987 information at age 18 is not available. For cases like these I use information at age 17 instead.

[6]By construction all custodial parents in this sample are mothers. I do not consider mother's later marital status, so a child will still be coded as living in a divorced family if the mother remarries.

[7]Author's own calculation based on the number of births at each age interval in 1985 from the National Vital Statistics Reports.

[8]Among mothers who gave birth to the child when they were below 23 years old, the weighted rate of divorce is 53.5%, 20 percentage-point higher than divorce rate among the other mothers.

score[9]. In addition, I include the calculated potential experience [10] in the regressions on labor market outcomes. To account for both genetic and environmental transmission of cognitive skills, I control for the mother's AFQT score[11], parents' ages at the child's birth, parents' highest grades completed and parents' earnings. For father's highest grade completed I use information on the mother's spouse from the annual household roster. I take the highest grade completed by the spouse residing in the mother's household the year before the marital dissolution. So for example, if the divorce/separation happened in 1994, I take the highest grade completed by mother's spouse reported in the 1993 household roster to be the father's highest grade completed. The mother's earnings are averaged from the year after the child's birth to when the child turned 18[12]. The father's earnings are taken to be the spouse's earnings reported in the household roster for years when the child lived with both biological parents. I then take the average of father's annual earnings over three years prior to divorce to smooth out income shocks. Accordingly, for fathers of intact families I average their earnings over three years prior to the weighted median child's age at divorce, which is 6 years old. Similarly, mother's pre-divorce earnings for the intact families is averaged over the period from the year after the child's birth to when the child turns 6, and her post-divorce earnings is taken over the period when the child is between 7 and 17 or 18. Additionally, I control for the average pre- and post-divorce total net family incomes (TNFIs)[13].

[9] The Peabody Picture Vocabulary Test (PPVT) score provides an estimate of the child's receptive vocabulary, verbal ability, and scholastic aptitude. This test is considered a good predictor of high school performance and literacy (Brooks-Gunn et al., 1993). For this study I take the average of the child's scores from 5 to 10.

[10] Potential experience = Age - Highest grade completed - 6 for those not enrolled in school in 2006, and 0 if enrolled.

[11] The Armed Forces Qualification Test score, a composite of four core tests that measure knowledge in a group of typical high school level academic disciplines, was taken by 94% of the NLSY respondents in 1980 and is known to be highly correlated with standard IQ test score (Argys et al., 1998).

[12] The average is taken of the non-missing income values. Zeroes are included in the average, resulting in 64 zero average earnings. The zero values are unlikely misreports for missing values, because the missing responses are assigned negative values and are coded as missing in my sample.

[13] The total net family income includes a range of welfare payments, military, business, farm and other employment earnings of household members. For a detailed list of components, see the NLSY information webpage for variable creation: `http://www.nlsinfo.org/nlsy79/docs/79html/codesup/app2tnfi.htm` To-

Weighted descriptive statistics are presented in Table 2. I use the customized child's sample weight for the means. As a result, the sample statistics do not reflect the national average but only the characteristics of children born to the female NLSY79 respondents. On average, children of divorced families in the sample are more likely to be female. This is consistent with findings by Katzev et al. (1994), Morgan et al. (1988), and more recently by Lundberg et al. (2007)[14]. In addition, children of divorced families are also less likely to be white. On average the children from intact families have 1.3 fewer years of potential experience and score about 4.5 percentage points higher on the PPVT. Their mothers on average score 9 percentage points higher on the AFQT, are 1.5 years older at the birth of the child, and have 0.05 year more education. Fathers of intact families complete on average 0.8 year more education and earn an average of $3400 more in annual earnings prior to divorce. These fathers are also 1.5 years older at the child's birth. Note that the mothers of divorced families on average earn more than the never-divorced mothers both before and after divorce. This difference is supported by the findings in Bedard and Deschênes (2005). But the average pre- and post-divorce TNFIs are much lower for the divorced families, reflecting less total economic resources available to children experiencing parental divorce.

On average, children who experience parental divorce or separation stay in single-parent households for more than 10 years[15]. The third panel presents statistics on home and school environment. The Home Observation for Measurement of the Environment (HOME) score is an inventory used to describe children's development environments. The original larger scale was created by Caldwell and Bradley (Caldwell and Bradley, 1979, 1984). This paper uses an abbreviated version available in the NLSY data set. The NLSY79-Child

tal net family income 1979-2006 [Accessed on 5/9/2010]. For Pre-divorce and TNFI is averaged over the period from time of birth to the weighted median age at divorce (6 years old) for intact families. Post-divorce TNFI is averaged over the period from after the weighted median age at divorce (6 years old) to 17 or 18 for intact families.

[14] Morgan et al. (1988) suggests that the higher involvement of fathers in raising a son contributes to marital stability. But a recent study by Diekmann and Schmidheiny (2004) using cross-national data does not support the hypothesis.

[15] This is indicated by "Years with a single parent".

also provides two HOME subscores. The HOME Cognitive Stimulation subscore measures children's access to items and outings that are predictive of future cognitive development (Knox, 1996), such as how many children's books the child has and how often the parent reads to the child. The HOME Emotional Support subscore is derived from observations and respondents' reports on parent-child interactions such as whether the parent talks to the child while at work. Higher subscores indicate more conducive environment at home. School quality is a constructed variable based on the mother's ratings of eight aspects[16] of the school with 5 being the best and 1 the worst. I average the scores over 1992-1998 [17], which is when the ratings are available. Admittedly, this average score corresponds to a different period of school for children of different age groups. The oldest children, born in 1979, were in middle to high school (ages 13 to 19 over 1992-1998), while the youngest, born in 1988, were in pre-school to elementary school (ages 4 to 10). But this rating is still a meaningful measure for the average quality of education received by the children. On average, children of divorced families have lower scores on all four of the measures, indicating a more disadvantaged environment when these children were growing up.

The last panel contains the dependent variables. I look at high school diploma receipt and grade retention for all the children in the sample, and highest grade completed for those born in or before 1982. All educational outcomes are measured as of the 2006 survey. For labor market outcomes I consider the hourly wage at the primary job, total annual wage income and average number of hours worked in a week. By construction, the hourly wage regression includes only those who worked in 2006, while the other two variables are available also for those not working. I only consider labor market outcomes for children born in or before 1985, who are at least age 21 in 2006. I further split the sample into older

[16] How much teachers care about students; principal's effectiveness as leader; the skill of teachers; safety of school for students; school lets parents know kids' progress; school lets parents help in decisions; school teaches kids right and wrong; and school maintains order and discipline.

[17] Alternatively, I use the maximum of the scores for each individual. But this measurement is prone to measurement error in a particular year, so the results presented use the averages. Note that using this alternative construction does not alter results significantly.

and younger groups when observing labor market outcomes. The older group consists of children ages 24 and over in 2006 (born between 1979 and 1982); and the younger group consists of children between 21 and 23 in 2006 (born between 1983 and 1985). As shown in Table 2, as of 2006 children of divorced families on average have lower wage income, receive lower pay rates, have less educational attainment, and are more likely to have repeated a grade. After age 24, children of divorced and intact families work nearly the same average number of hours per week. But at younger ages, children of divorced families have much higher average hours of work per week. This can be explained by the higher educational level of the children from intact families. Because they stay in school for longer they will tend to have less labor market attachment compared to children from divorced families of the same age.

IV Methodology

4.1 OLS regressions: baseline

I start by estimating a baseline ordinary least squares (OLS) model, which is summarized by the equation below. This equation documents the correlation between divorce and children's later outcomes. In accordance with a large prior literature, I expect the coefficient on divorce, β_1, to be negative (positive for grade retention).

$$\begin{aligned} Outcome_i &= \beta_0 + \beta_1(Divorce\ dummy_i) \\ &+ \beta_2(Child\ characteristic\ controls_i) \\ &+ \beta_3(Family\ environment\ controls_i) \\ &+ \beta_4(Mother\text{'}s\ education_i) \\ &+ \beta_5(Father\text{'}s\ education_i) \\ &+ \beta_6(Mother\text{'}s\ earnings_i) \\ &+ \beta_7(Father\text{'}s\ pre\text{-}divorce\ earnings_i) \\ &+ \epsilon_i \end{aligned}$$

In the equation above, "Child characteristic controls" is a vector of child characteristics, including gender, race, age, the PPVT score, the number of siblings at home, and calculated potential experience for the labor market regressions. "Family environment controls" include average total net family income (TNFI) pre- and post-divorce, the parents' ages at the child's birth, the HOME cognitive and emotional subscores, as well as the mother's average rating of school quality. The parents' education and earnings as well as the outcome variables are measured as described in the previous section. I take logs of all the earnings and income variables[18].

[18] To avoid undefined log values for zero earnings, I add 1 to the variable before taking natural log.

In all the regressions, I report standard errors clustered by the mother's ID. Given the nature of the data set, there are many sibling pairs and sets in the sample. Out of the 3309 children in the sample, only 1282 or 38.7% are the only child to the mother. The rest 2179 children are born to 897 mothers. Siblings born to the same mother are likely subject to many of the same unobserved influences, and so the error term is likely correlated across siblings. The clustering process takes into account any such correlation and at the same time reduces the significance levels of any effect identified in the regressions.

I expect β_1 to be negative (positive for grade retention), indicating a negative impact of divorce on children's educational attainment and labor market outcomes. I also expect the coefficients on the parents' characteristics, β_4-β_7, to be positive (negative for grade retention), reflecting the advantages of better upbringing and more available resources during childhood. Most of the child characteristics and family environment controls are also likely to be positive (negative for grade retention), especially the child's PPVT score, potential experience for the labor market outcomes, the HOME subscores and the mother's rating of school quality.

4.2 OLS regressions: with interaction terms

Next I estimate an ordinary least squares (OLS) model including interactions of the divorce indicator and parents' education and earnings. This model allows me to investigate the extent to which higher levels of parental resources can offset the negative effects of divorce.

$$
\begin{aligned}
Outcome_i &= \beta_0 + \beta_1(Divorce\ dummy_i) \\
&+ \beta_2(Child\ characteristic\ controls_i) \\
&+ \beta_3(Family\ environment\ controls_i) \\
&+ \beta_4(Mother's\ education_i) \\
&+ \beta_5(Father's\ education_i) \\
&+ \beta_6(Mother's\ earnings_i) \\
&+ \beta_7(Father's\ pre\text{-}divorce\ earnings_i) \\
&+ \beta_8(Divorce\ dummy_i * (Mother's/Father's\ education\ or\ earnings_i)) \\
&+ \epsilon_i
\end{aligned}
$$

In the equation above, β_8 is the coefficient on the interaction term. I include one interaction term at a time: mother's education, mother's average earnings, and the same for the father. A negative (positive for grade retention) and statistically significant coefficient on the divorce dummy (β_1) indicates a negative implied effect of parental divorce on the outcomes of children whose father or mother has no income or education. A positive (negative for grade retention) and statistically significant β_8 shows a mitigating effect of either parent's education/earnings on the negative impact of divorce.

Because assortative mating could result in high correlation between a mother's education and her spouse's education[19], any significant result on the interaction term could be because of the mitigating effect associated with the spouse. To address this concern I include robustness checks where both parents' education or earnings interaction terms are used in a regression. However, in this model a high correlation between the parents education makes it difficult to statistically identify the mitigating effect of either parent. So my preferred model is the one with one interaction term at a time.

4.3 OLS regressions: separated by gender

I expect the educational and labor market outcomes of the female respondents to exhibit different patterns from those of the male respondents. Krein and Beller (1988), for example, find that the impact of divorce for educational attainment is larger for boys than for girls. I run OLS regressions separated by gender for the educational outcomes. To understand the significance of any difference between genders I also estimate models in which gender is fully interacted with all variables. This allows the girls in the sample to have their own coefficients and intercepts, thereby identifying any significant difference between genders.

[19] This correlation is 0.5521 for the sample used here.

V Results

5.1 High school diploma receipt

Table 3 presents results from the first set of regressions. The outcome is a dummy variable for obtaining a high school diploma or equivalent by 2006. Estimations using a Probit model yield similar results. For easier interpretation I present results from the OLS model here. Column (1) contains results from the baseline case without interaction terms, while columns (2)-(5) present results from regressions with one interaction term. In addition, I also include results from robustness checks where interaction terms for both parents are included together. These results are reported in columns (6) and (7). The coefficient on the divorce dummy is negative and statistically significant in most regressions but not for the baseline case in column (1). This indicates that in the sample as a whole, there is no statistically significant effect of divorce, but the implied effect of divorce for a child whose mother or father has no income or education is significantly negative. Results on the interaction terms support the existence of the mitigating effects from the mother's educational level and both parents' earnings levels.

Results in column (2) indicate that for children whose mother has no education, divorce reduces the likelihood of high school diploma receipt by 31.8 percentage points. One more year of education completed by the mom reduces the magnitude of this impact by 2.4 percentage points (0.024). Evaluated at the mean level of mom's highest grade completed, 13.201 years (see Table 2), divorce reduces the likelihood of a child's high school diploma receipt by an average of 0.12 percentage point[20]. For a mother with high school education (12 years of education), divorce reduces her child's chance of completing high school by 3 percentage points[21]. This negative impact disappears for children whose mother has more than 13 years of education. Similarly, results in column (4) indicate that for children whose

[20] $-0.318 + (13.201) \times (0.024) = -0.00118$
[21] $-0.318 + 12 \times (0.024) = -0.0300$

mother has no income, divorce reduces the chance of high school diploma receipt by 37.9 percentage points. One log-point increase in mom's average annual earnings reduces the impact of divorce by 4.4 percentage points. Note that this effect is in addition to any positive effect associated with higher total net family income, so the overall mitigating effect of mother's income is quite large. At the mean level of mom's average earnings for the intact families, \$5106, (see Table 2), divorce reduces the chance of high school diploma receipt by 0.33 percentage point[22]. Evaluated at the 25th and 75th percentiles of mother's earnings, divorce reduces the likelihood by 3.6 and 0.66 percentage points, respectively[23]. Columns (6) and (7) present the regressions with interaction terms of both parents' educational or earnings levels. Mom's education and earnings interaction terms remain positive and significant, which indicate that even in the presence of assortative mating, the mom's education and income still have mitigating effects. These results suggest that divorce is only detrimental for children whose mother has low socioeconomic backgrounds.

In comparison to the mother's education and earnings, the father's socioeconomic background has little mitigating effect on the impact of divorce. Column (3) shows that his education has no significant mitigating effect although the interaction term is positive. In column (5), father's average pre-divorce earnings have a mitigating effect at the 10% level, but in the robustness check in column (7) the effect is no longer signifcant. The magnitude of this effect, as shown in column (5) is much smaller compared to the coefficient on the mother's earnings interaction term in column (4). But note here, because the mom's earnings is measured and averaged over the entire childhood period, it has a different meaning from the dad's pre-divorce earnings variable. As a result, the magnitudes of the two interaction terms are not comparable here[24].

Among children's characteristics, being female is associated with a 6.9 to 7 percentage-

[22] $-0.379 + \log(5106) \times (0.044) = -0.00332$

[23] $-0.379 + \log(2406) \times (0.044) = -0.0364$, $-0.379 + \log(4740) \times (0.044) = -0.00659$

[24] See Section 6.2 for regressions with comparable measures of the mother's earnings.

point higher likelihood of completing high school, significant at the 1% level. Similarly, age in 2006 also has positive coefficients in all regressions and is statistically significant at the 1% level. In particular, one-year difference in age in 2006 is associated with about 6 percentage-point (0.056 to 0.057) difference in the likelihood of having obtained a high school diploma by 2006. Since the youngest children in the sample are born in 1988 and have reached 18 by 2006, all children should have had enough time to complete high school. Therefore, the association between age and high school diploma reflects more than a simple age advantage. The PPVT score is associated with a higher likelihood of high school diploma receipt. The results are all significant at the 1% level. This confirms qualitatively the findings by Brooks-Gunn et al. (1993) that this test is a good predictor of high school performance and literacy. Lastly, the number of siblings is negatively correlated with high school diploma receipt. One additional sibling is associated with about 2 percentage point decrease in the likelihood of receiving a high school diploma, significant at the 5% level. This is consistent with the fact that siblings compete for resources at home and thus reducing the parental and other resources available for any one child.

None of the family environment controls has a significant impact on high school diploma receipt. While the HOME cognitive subscore still has positive coefficients, the coefficients on the HOME emotional subscore are negative in all of the regressions. This is because the emotional subscore is to some extent collinear with the father's presence (Mott, 1993), which is already expressed by the divorce dummy. Among parents' characteristics only mother's educational level has positive but small and significant (at the 5% level) effects for most of the specifications.

5.2 Highest grade completed

Another measure of educational outcome is the highest grade completed. Table 4 reports estimates from regressions on this measure. Unlike for the previous set of regressions, here the sample is restricted to children born between 1979 and 1982 to married parents. A majority of the children born after 1982 were still too young to have finished their entire course of education by 2006. Choosing 1982 as the cut-off year gives enough time for college if the child went directly from high school to college and graduated in four years.

The divorce coefficient is negative and significant in the baseline case as reported in column (1), indicating a negative impact of divorce on children's highest grade completed. On average, parental divorce is associated with 0.492 year less schooling for children in the sample[25]. But compared to the results for high school diploma receipt, the coefficients on the interaction terms here provide less evidence for mitigating effects. The interaction term on mom's highest grade completed is positive and significant at the 10% level as shown in column (2). The magnitude indicates that at the mean mother's educational level for intact families (13.201 see Table 2), divorce is associated with 0.39 year less education[26]. On average one additional year of mom's education reduces the negative impact of divorce on the child's completed years of education by 0.149 year. This mitigating effect is not significant to the inclusion of dad's highest grade completed in column (6).[27]

Among children's characteristic controls, only gender follows similar patterns as in Table 3. Age and PPVT score remain positive but are no longer statistically significant. This is likely because of the smaller sample with a narrower age range used for this set of regressions[28]. Similar to results in Table 3, the HOME cognitive subscore has a positive

[25] When not controlling for family characteristics Ginther and Pollak (2004) find that living with a single parent is associated with 0.674 fewer year of schooling. Their result using the PSID is 0.556 year fewer schooling. But both results lose statistical significance when family controls are included.

[26] $-2.357 + (13.201) \times (0.149) = -0.390$

[27] Regressions on high school diploma receipt using this smaller sample yield results consistent with those in Table 3. This shows sample difference is not a cause for the lack of significant mitigating effects here.

[28] This is confirmed by regressions on highest grade completed using all the children. Age and PPVT score from these regressions show patterns similar to Table 3.

effect on children's educational attainment. The results are significant at the 1% level, an increase in significance level from results in Table 3. In addition, post-divorce average TNFI has positive coefficients significant at the 5% level, indicating a positive effect of the household financial resources after divorce on the children's highest grade completed.

Father's educational level is positively correlated with highest grade completed and is significant at the 1% level for most regressions. In the baseline case presented in column (1), an additional year of education received by the dad is correlated with an additional 0.162 year of education for the child. Unlike the results for high school diploma receipt, in this case the mother's educational level shows no direct effect on the outcome. One possible explanation is that children's educational achievement up to the completion of high school is dependent more on the resident mother's positive influence, which is correlated with the mother's education.

5.3 Grade retention

In addition to the more common gauge of educational outcome, I also look at a third measure, grade retention. In my sample, 9% of children from intact families and 20% from divorce families have repeated a grade from grade 1 through 12. The overall weighted grade retention rate in the sample is 14%. This is comparable to the national average grade retention rate among students in Kindergarten through grade 8 as reported by the National Center for Education Statistics, which is between 9% and 11% over the period between 1996 and 2007[29]. Figure 3 shows the number of children repeating each grade in my sample. Although about one-fifth of all grade retentions in my sample happen in the first grade (no information is provided on repeating grades in kindergarten), the majority of grade retentions take place in higher grades, with nearly half in post-elementary schools.

[29] Table A-18-1 on http://nces.ed.gov/programs/coe/2009/section3/indicator18.asp [Accessed on 5/10/2010].

There are many reasons for grade retention. For children of divorced families grade retention may be more prevalent. This could be related to the decline in household income after divorce. As a result, the child may be forced to start work part- or full-time, or the family may be forced to move to a lower-rent neighborhood which may cause the child to miss a substantial amount of school. Another reason for grade retention among these children include the anxiety associated with the change in family formation which may affect children's class attendance. Using a logistic regression model Byrd and Weitzman (1994) identify factors associated with repeating kindergarten and first grade. They find that poverty, male gender, low maternal education among others to be the major factors for children's early grade retention.

The importance of grade retention as a predictor of future academic and job market performance is underlined by the large literature on the subject. Jacob and Lefgren (2009), for instance, find that grade retention leads to a slight increase in the probability of dropping out for older students, but has no significant effect on younger students. Eide and Showalter (2001) use the variation in the age of entry into kindergarten across US states as an instrument for retention. They find that for white students, grade retention has some benefit to students by lowering dropout rates and raising labor market earnings, but the IV estimates tend to be statistically insignificant.

The regression results on grade retention are presented in Table 5. Although coefficients on divorce are positive in all but one regression, it is not statistically significant in the baseline case in column (1). Among the interaction terms, only the mom's average annual earnings are negative and significant at the 5% level. At the mean mom's average earnings, divorce increases the likelihood of grade retention by 23.8 percentage points[30]. For every log-point increase in mom's average earnings the impact of divorce is reduced by 3.2 percentage points. This result is robust to the inclusion of dad's pre-divorce average

[30] $0.29 + \log(5.106) \times -(0.032) = 0.238$

earnings as shown in column (7).

Among the control variables, mom's earnings, post-divorce dad's average earnings and total net family income have negative association with grade retention. Similar to findings by Byrd and Weitzman (1994), being female and having higher maternal education are associated with lower likelihood of grade retention. In addition, the two HOME subscores, and especially the cognitive subscore, are both correlated with lower grade retention rate, underlining the importance of family environment in reducing grade retention.

5.4 Labor market outcomes

Regression results on labor market outcomes are presented in Table 6. Because I do not directly control for the highest grade completed in these regressions, the observed effects on the outcome variables are not net of educational levels. The outcome variables include the hourly wage rate (columns (1)-(2)), annual wage income (columns (3)-(4)) and hours worked per week (columns (5)-(6)). All three outcomes are taken from the surveys in 2006. I exclude children born after 1986, because they were not yet 21 in 2006. I further split the sample into the older (odd-numbered columns) and the younger (even-numbered columns) groups as I expect children of the two age ranges to behave differently in the labor market. The older group consists of children born between 1979 and 1982, who were between 24 and 27 in 2006, and the younger group includes children born between 1983 and 1985, ages 21 to 23 in 2006.

An additional control variable for this set of regressions is the calculated potential experience. Because of a potential reduction in household income, children of divorced families are likely to start part- or full-time work earlier than children of intact families. This gives the former more accumulated work experience, which may then manifest as early advantages in the labor market. The last panel of Table 2 provides evidence for this theory.

Although in the younger group children of divorced families have higher annual income ($\$14,979$) than children of intact families ($\$13,993$), in the older group children of intact families earned much more than the other group ($\$26,131 v.s. \$21{,}587$). Similar observations can be made for the hours worked per week. These early advantages for children from divorced families are evidence of the experience edge. The closing gap between the two groups of children suggests that the effects of early experience tend to disappear with age, especially when all the children have completed education. But it is possible that the experience edge still exists even in the older group, although less pronounced. For this reason, I include potential experience as a control variable here.

As shown in Table 6, the divorce dummy is positive and not significant for all but one of the regressions[31]. This suggests that children of divorced families do no worse in the labor market than children of intact families. A possible explanation is the young ages of the children. The children in the regression sample were between 21 and 27 in 2006. People in their 20s are more likely to make frequent transitions into and out of the labor force for various reasons such as schooling, changing occupations or starting a family. These transitions potentially confound the data and result in inconsistent observed labor market behavior. This shortcoming is inherent in the data and is hard to address with the current data set.

Among the control variables, gender, age, potential experience, and average post-divorce TNFI have consistent and significant impacts on some outcomes. Being a female is associated with lower hourly wage, lower annual wage income in the older group, and fewer hours worked per week in both age groups. The magnitudes of gender disadvantages are greater for the older group than the younger group, which may indicate growing gender disadvantage (associated with for instance sexism at the workplace or more women dropping out of the workforce to start a family) with age in the workforce. In all but two

[31] Regression analysis using a sample constructed from the original NLSY79 found similar result. See Appendix B for details

cases age has a positive effect on labor market performance. For example, an additional year of age is associated with \$1.176 greater hourly wage in the older group, significant at the 5% level. Given that the average hourly wage for the older group is between \$10 and \$11 (see Table 2), this represents a big age advantage. In line with expectations, potential experience has a positive and significant effect on labor market performance mainly for the younger group. For instance, one more year of potential experience is associated with 0.127 log point increase in annual wage income in the younger group, and the result is significant at the 1% level. In comparison, potential experience has a negative coefficient and is not significant for the older group. Average post-divorce TNFI has a positive effect mainly for the older group.

Although on average divorce has no significant and negative impact on children's labor market outcomes, it is still possible that within a socioeconomic subgroup the effect is significant and negative. The interaction model allows me to explore this heterogeneous effect. Here I present one set of regression results with interaction terms. Table 7 reports the full set of regression results on hourly wage for the old group (born between 1979 and 1982), so they are at least turning 24 in 2006 when the wage is measured[32]. The divorce dummy is negative and significant at the 10% level in columns (3) and (4). This indicates significant and negative impacts of divorce for children whose father has no education or whose mother has zero earnings. Each additional year of dad's education reduces the impact by \$0.541 as shown in column (3), so the impact of divorce is entirely eliminated for children whose father has at least nine years of education[33]. Similarly, results in column (4) show that one log-point increase in the mother's average earnings reduces the impact of divorce by \$0.772, and the impact disappears for children whose mother earns at least \$440 on average[34]. Both results remain significant to the inclusion of the second interaction

[32] As a robustness check, I average the outcome variables over 2004 to 2006, and use the averages for regressions in Tables 6 and 7. The results do not change.

[33] $4.692/0.541 = 8.67$

[34] $4.700/0.772 = 6.09$ log points, or \$441 in 1979 dollars.

term.

Another possibility for the insignificant effect of divorce is that children of divorced families may take longer to complete college and enter in the post-school job market[35]. I investigate this possibility using regressions restricted to children born between 1979 and 1985 who are not enrolled in school in 2006. Results are shown in Table 8. Similar to Table 6, the divorce dummy is again not significant and negative. However, coefficients and significance levels for several other variables change for the younger group (ages 21 to 23). For example, the effects of potential experience on log of annual income and hours worked per week become insignificant for the younger group (columns (4) and (6)) in Table 8. This confirms the theory mentioned early that the experience edge becomes less significant when all children have completed education.[36]

5.5 Gender differences in educational outcomes

To identify any gender differences in the observed patterns I estimate regressions for the educational outcomes separated by gender. Due to limited sample size similar gender-specific regressions are inconclusive for the labor market outcomes. Tables 9 to 11 present gender-specific regressions using the same set of variables in Tables 3 to 5. Selected variables are reported, separated by gender into two panels.

Table 9 presents results on high school diploma receipt. Similar between the two panels is the mitigating effect associated with mother's education. For both groups one

[35] I thank Dr. Andrea Beller for her suggestion of this alternative explanation.

[36] Interestingly, the effect of gender on wage level for the younger group (column (2)) changes from insignificant to significant at the 1% level. Being female is associated with a \$1.910 lower rate of pay at primary job. The weighted average rate of pay for the younger group is \$10.158 and \$9.633 for children of intact and divorced families, respectively (Table 2 bottom panel). So at the mean, this coefficient represents 18.80% and 19.83% lower wages for girls. In comparison, girls in the older age group (ages 24 to 27 in 2006) suffer from an even wider wage gap. On average, they earn \$3.093 (column (1)) less than boys in the same group, all else equal. Given the weighted average rate of pay for this group, this represents 28.18% and 29.23% lower wages for girls of intact and divorced families, respectively.

more year of education completed by the mother reduces the impact of divorce by about 2 percentage points, both significant at the 10% level. Mother's average earnings have mitigating effect only for girls. On average one log-point increase in her earnings reduces the negative impact of divorce by 5.3 percentage points for girls, significant at the 5% level. Similarly, only girls benefit from the father's earnings. One log-point increase in the father's average pre-divorce earnings reduces the negative impact of divorce by 1.9 percentage points for girls, also significant at the 5% level. Both of these effects remain significant when they are included together in the regression. Despite the pattern of stronger mitigating effects for girls, results from the fully interacted model show that the gender differences are not statistically significant.

Gender-specific results on the highest grade completed are reported in Table 10. Compared with boys in the bottom panel, girls' education is more susceptible to parental divorce. The divorce coefficients in column (1) show the marginal effects of divorce on the highest grade completed by girls and boys. Divorce is associated with an average of 0.572 fewer years of education for girls, significant at the 10% level, while for boys divorce has no significant effect on the highest grade completed. The mitigating effect associated with dad's education is only significant for girls. An additional year of dad's education reduces the impact of divorce by 0.2 year for girls. On the other hand, father's pre-divorce earnings have a mitigating effect only for boys, and the effect is significant at the 1% level. On average one log-point increase in the dad's earnings reduces the impact of divorce by 0.211 year for boys. The effect remains significant in the robustness check in column (7). But again, the fully interacted model shows no statistically significant gender differences.

Table 11 reports the gender-specific results on grade retention. The mitigating effect from father's education has a mitigating effect only for boys. On average, one more year of education completed by the dad reduces the impact of divorce by 2.7 percentage points, significant at the 5% level and remains significant in the robustness check in column (6).

Analysis using the fully interacted model shows that this difference is statistically significant at the 5% level. On the other hand, the mitigating effect associated with mom's earnings is similar for boys and girls, although more significant for boys. One log-point increase in her average earnings reduces the impact of divorce by 3.2 and 3.6 percentage points for girls and boys, respectively.

To summarize, Tables 3-8 provide evidence for the negative impact of divorce on children's educational outcomes but little support for the impact on labor market outcomes. In addition, results on high school diploma receipt show that both the mother's educational and earnings levels have mitigating effects on the impact of divorce. In comparison, regressions on the highest grade completed show robust results only for the mitigating effect associated with the mother's educational level, while results on grade retention identify the mother's average earnings as a mitigating factor. Gender-specific regressions on educational outcomes in Tables 9-11 find in general stronger impact of divorce and mitigating effects for girls than for boys, but in some cases only boys benefit from dad's resources.

VI Extensions

6.1 Channel of mitigating effects: Regressions with HOME interaction term

To investigate the channels through which parents' education and earnings mitigate the negative impact of divorce on educational outcomes, I include an additional interaction term. The HOME Cognitive Stimulation subscore includes items measuring books and reading habits of the child, family activities and entertainment involving the child and interviewer's observation of the home environment[37]. Because the cognitive subscore is a predictor of future cognitive development (Knox, 1996), I use an interaction term of the subscore with divorce to study the channel of the mitigating effect associated with the parents' socioeconomic characteristics.

Table 12 reports the new set of regressions on high school diploma receipt. The top panel repeats selected variables from Table 3, and the bottom panel reports results of similar regressions with the additional interaction term. In the bottom panel the additional interaction term with the HOME cognitive subscore is highlighted. It is significant and positive in two regressions. On average, one more point on the subscore reduces the impact of divorce by 0.4 percentage point (column (5)). This is not a small effect given that the average HOME cognitive subscore is above 100 for both the intact and divorced families.

Comparing between the two panels, we can see that the coefficient on mother's education interaction term drops a little from 0.024 to 0.017, and remains robust to the inclusion of the father's characteristics (column (6)). The coefficient on the mother's earnings interaction term drops from 0.044 to 0.037 and remains significant. These results suggest that the mitigating effects associated with the mother's characteristics work mainly through things not captured by the HOME cognitive subscore. Because this subscore covers only the type and frequency of activities in which the parent engages with the child (for example,

[37]See Appendix A for a list of items included in the HOME cognitive subscore.

how often the parent reads to the child), but not the quality of time spent with the child (for example, whether the parent reads with emotion or impatiently), it is likely that the mitigating effects associated with the mother work mainly through quality time that she spends with her child. Another possibility that when the mother earns more or has more education, she may push the child harder. Similarly, the child may also have stronger motivation under the influence of an accomplished mother. Unfortunately, because the mechanism through which resources combine to influence the child's later outcomes remains a black box, we are unlikely to pin down the exact driver behind these mitigating effects.

Table 13 reports results from the regressions on the highest grade completed. The top panel reports selected variables from Table 4, while the bottom panel contains results with the additional interaction term. Results here tell a story similar to the one in Table 12. Instead of dropping in magnitude, the interaction term for the mother's education increases marginally from the top to the bottom panel. Unlike the results in Table 12, the cognitive interaction term does not have any significant effect on the highest grade completed. These results indicate that for children's highest grade completed, the mitigating effects on the impact of divorce come almost entirely through factors not covered by the cognitive subscore.

Results on grade retention in Table 14 tell a similar story. Comparing between the two panels, the coefficient on mom's average earnings interaction term in column (4) does not change when including the interaction term of cognitive subscore. Similarly, in the robustness test in column (7), the magnitude of this interaction term does not decrease from the top to the bottom panel. Similar to the results in Table 13, the cognitive interaction term is not significant in any of the regressions in the bottom panel, indicating that factors in the cognitive subscore do not have an overall mitigating effect on the impact of divorce on grade retention.

6.2 Extension: Mom's earnings separated

In the regression model so far I have averaged all mothers' earnings over an 17 or 18 year period. However, this makes the mother's earnings variable not comparable with the father's, which covers only the pre-divorce period. Among the divorced mothers for whom earnings data are available for both the pre- and post-divorce periods, over 83% saw their average earnings increase after divorce, and 14% had lower average earnings after divorce. All of those divorced mothers who did not work before divorce had nonzero average earnings after divorce. Among the divorced mothers whose earnings increase after divorce, the average rise is $4,673, higher than the average increase of $3,606 for the non-divorced mothers. This pattern points to the behavioral effects of divorce and highlights the need to look at the mother's earnings separately.

In an alternative specification, I use the mother's pre- and post-divorce earnings separately, one at a time for the educational outcomes. This allows me to identify the separate mitigating effect associated with the mother's pre- and post-divorce average earnings. The mother's pre-divorce earnings measure is constructed in a similar as father's pre-divorce earnings measure. Here I average over the period from one year after the child's birth of the child to the year before divorce. The post-divorce earnings is averaged over from the year of divorce to when the child turns 17 or 18. Correspondingly, for the mothers of intact families, pre-divorce earnings is averaged from the year after the child's birth to before he turns 6 (the median age of child at divorce), and the post-divorce measure is taken from when he 6 to when he turns 17 or 18. Results using these separated earnings measures are reported in Tables 15-17.

Table 15 reports the results on high school diploma receipt. Columns (1)-(2) are taken from Table 3 for comparison, and columns (3)-(5) report the results with separated mother's average earnings[38]. As shown in columns (3)-(4), both the mother's pre- and post-divorce earnings have mitigating effects. In particular, one log-point increase in mom's pre- and post-divorce earnings reduces the impact of divorce by 2.3 and 3.7 percentage points, respectively, both significant at the 1% level. Notice that the magnitudes of both interaction terms are smaller than that of the interaction term in column (1). This indicates that the mitigating effect associated with mom's earnings averaged across the whole childhood is stronger than the effect of either particular period. Although the interaction terms become smaller, when the dad's earnings are included in column (5), they remain significant. Although the dad's earnings interaction term is not significant in any of the regressions, its magnitude is comparable to those of he mother's pre- and post-divorce earnings interaction terms in column (5).

A similar pattern can be observed on the children's highest grade completed. In Table 16, the interaction terms in both columns (3) and (4) are significant at the 10% level, even though the mother's aggregate earnings interaction term is not significant in column (1). This demonstrates that mother's earnings from both periods separately have a mitigating effect, and the bigger magnitude of the post-divorce interaction term indicates greater importance than the pre-divorce earnings.

Results on grade retention as reported in Table 17 show a different pattern. Mom's pre-divorce earnings (in column (3)) do not have any significant mitigating effect, whereas her post-divorce average earnings (in column (4)) have a mitigating effect about the same magnitude as the effect associated with the aggregate earnings in column (1). This provides more support for the financial reason of grade retention among children of divorced households. Higher mom's post-divorce earnings reduce the need for a range of activities that are disruptive to children's academic performance, while mom's pre-divorce earnings

[38] The slight drop in the number of observations from 1730 to 1677 is because some mothers' earnings information is missing for either before or after divorce (or the median age of divorce for the intact families), but not for both periods.

do not have the same effect. On average, one log-point increase in mom's post-divorce earnings reduces the impact of divorce by 3.3 percentage points, significant at the 1% level and robust to the inclusion of dad's earnings interaction term.

Overall, I find that while aggregating mother's earnings may mask important difference between her pre- and post-divorce earnings, for both high school diploma receipt and highest grade completed, her earnings from both periods contribute to the estimated mitigating effect. For grade retention, however, only the mother's post-divorce earnings have a mitigating effect.

6.3 Robustness check: Identifying remarried mothers

I classify a child as living in a divorced family if he lives apart from his father for at least one year from birth to 18. For years when living arrangement information is not available between 1979 and 1983, the mother's marital status is used to determine whether the child lives with his father. This construction ignores the mother's subsequent marital status. For the child the experience of living with a stepfather and potentially step-siblings will likely have different impacts than living with a divorced single mother. Although the total net family income after divorce accounts for any changes in the household financial situation following remarriage, some other differences may not be captured in the original model. For instance, the presence of a father figure in the household may create a positive influence on the child, while remarried mothers may need to work fewer hours and be able to devote more time to the child. On the other hand, if there are step-siblings in the household or if the mother has additional children with her new husband, this may reduce time inputs available for the child we observe. Moreover, there may be unobserved differences between the remarried mothers and those who divorced and remained single for the period of interest. This heterogeneity may make some mothers more attractive in the remarriage market or more willing to get remarried, and could also create different impacts on the children's outcomes.

Table 18 summarizes some observable differences between divorced mothers who remarry and those who remain single. Out of the 1334 divorced mothers 173 get remarried before the child turns 18, and the rest remain single for the period. As shown, the remarried mothers on average have lower AFQT scores, are younger at birth of the child and receive less in average annual earnings both before and after divorce. In Tables 19-22 I group the mothers in three different ways and compare the results. Each of the tables is divided into three panels accordingly. The top panel reports results from the original regression setup where the results indicate the impact of divorce. In the middle panel I group the remarried mothers with the mothers of intact families. This set of results allows me to study the effect of living with single mother after divorce. The bottom panel contains results where the remarried mothers are excluded from the regressions.

Table 19 compares results on high school diploma receipt. The magnitudes and significance levels of all four interaction terms only change marginally across panels. The only difference is with father's education. Whereas the interaction term for father's education is not significant in the top panel, it is significant at the 5% level in the middle panel. This shows that while father's education has no significant mitigating effect on the impact of divorce, it mitigates the negative impact of living with a single mother.

Similar patterns can be seen in Table 20 for the results on the highest grade completed, where the magnitude and significance level of the divorce dummy only change marginally across the panels. The only mitigating effect here comes from the mom's education. This effect is consistent across the three panels and only changes slightly from 0.149 to 0.182. The magnitude is the greatest in the bottom, showing that the mitigating effect on divorce is slightly stronger when the remarried mothers are excluded. This suggests that the effect on remarried mothers may not be as strong as that on the other divorced mothers.

Table 21 presents the three sets of results on grade retention. Comparing the coefficients on mother's earnings interaction term[39], the magnitude changes marginally across panels. This indicates that the estimated mitigating effect from mom's earnings remains roughly unchanged regardless of how the remarried mothers are grouped with respect to the other mothers.

Lastly, in Table 22 I report the three sets of results on hourly wage. The coefficients on father's education interaction term only change slightly across panels, and all remain significant at the 5% level. On the other hand, the mitigating effect of mother's earnings is significant at the 5% level but becomes insignificant in the bottom panel. This suggests that the mitigating effect from mother's earnings is stronger for children with remarried mothers, and the effect disappears when the remarried mothers are excluded from the sample.

Comparisons between the three regression specifications show that how I treat the remarried mothers does not affect most regression results. This also confirms the findings by Ginther and Pollak (2004) that the impact of living in a step-family on children's educational outcomes is not significantly different from the impact of parental divorce.

6.4 Instrumental variable: Unilateral divorce law

As pointed out in Section I, divorce is associated with many socioeconomic factors that are also correlated with inferior outcomes of the children. Although I control for a variety of demographic variables in my regressions, there are still unobserved factors which fall into this category. To address the potential endogeneity of divorce I include an instrumental variable approach.

I use the time variation in the state implementation of unilateral divorce law as an instrument for divorce. As reviewed by Weitzman (1985) and Gruber (2004), unilateral divorce laws make divorce easier compared to traditional divorce regulations. Under the

[39] As shown in Section 6.2 the effect here is really only associated with her post-divorce earnings.

unilateral divorce laws, couples no longer require mutual consent to obtain a divorce. This alleviates much of the financial and emotional cost involved in traditional divorces, thereby making divorce easier. Between 1969 and 1979 the number of states with unilateral laws increased from 6 to 32, while the population affected by the laws increased from less than 4% to 55%. This period coincides with a time of rising divorce rates nationwide. Figure 4 demonstrates this correspondence between rising popularity of the unilateral divorce laws and divorce rates. From 1969 to 1979, the number of divorces grew from 3.2 to 5.3 per 1,000 population. I use this correspondence to construct the instrument.

To the extent that the timing of state law adoption is an exogenous variable, this instrumental approach helps address the potential problem of endogeneity. However, as Wolfers (2006) points out, the divorces induced by unilateral divorce laws right after the implementation may be inherently different from typical divorces. For example, couples of these marginal divorces may be less patient people who would not go through the troublesome process of traditional divorce. The reduced financial costs of unilateral divorce also indicate a potential correlation between lower income and unilateral divorce. As a result, the estimations here should be interpreted as local treatment effects, more specifically, the effects of divorce for children whose parents were induced to divorce by the unilateral laws.

I use the mother's state of residence information provided in the NLSY79 restricted geocode data to construct the instrumental variable. For the timing of the state divorce law variation I use the information gathered by Gruber (2004)[40]. I use four different constructions of the instrumental variable. First, I consider whether or not the child was born in a state with unilateral divorce. This is determined by the year of child's birth, mother's state of residence in that year and the divorce law status of the state in that year. If the child was

[40] Alternatively, I use the state law information provided by Friedberg (1998). These two classifications differ in the assignment of 15 states. These differences in classification lead to slight difference in estimation results. According to a detail study of classification methodology by Wolfers (2006), Gruber uses both primary and secondary sources, whereas Friedberg uses mostly secondary sources. I present here results using Gruber's classification

born into a unilateral state then the instrumental variable is given a value 1, otherwise the value is 0. 191 out of the 3309 children are missing state of birth information and accordingly their instrumental variable is coded as missing. A second construction accounts for the length of exposure to the unilateral laws. The instrument equals the length of time (in years) between the institution of the unilateral law in the state and the birth of the child. The variable is set to 0 if the child was born before the state implementation of unilateral laws, and coded as missing for children with missing state of birth. The third construction considers the length of exposure of the mother to unilateral laws. Gruber (2004) finds that adults exposed to unilateral laws as children tend to marry earlier but separate more often. I restrict to mothers who did not move from birth to 1979 which is when the oldest children in the sample were born. The instrument then equals the length of time between the implementation of the law and the birth year of the mom and equals 0 if mother's birth year is before the implementation year. The variable is coded as missing for missing state information or if the mother moved before 1979. Lastly, I consider the exposure of the state to the unilateral divorce laws. This is measured by the length of time between the state adoption of the law and 2006 when the children's outcomes are reported. The variable is equal to 0 for states without the law in 2006.

A summary of the construction methodology and first-stage statistics are provided in Table 23. As shown all but the last one of the construction methods yield instruments negatively correlated with divorce. This is against our first intuition. I use the Two-Stage-Least-Squares (2SLS) IV regression model, and the first-stage statistics are from the baseline regressions without interaction term. Here the R-square values are all low around 0.33, and the F statistics are well below the often-used threshold of 10. Given that the 2SLS size of nominal 5% Wald test is 16.38 at the 10% level, the F statistics for none of the four constructions exceed the critical value. On the basis of this test, we have a weak-instrument problem.

VII Conclusion

Using a sample from the NLSY79-Child data, this paper investigates the impact of parental divorce on children's educational and labor market outcomes, and estimates the mitigating effect of parent's socioeconomic backgrounds on the impact of divorce using an interaction model. In particular, I look at the impacts and mitigating effects on the children's high school diploma receipt, highest grade completed, grade retention and three measures of labor market outcomes. I also explore the gender difference and the channel of mitigating effects.

Results from OLS regressions show that on average divorce does not have a statistically significant impact on labor market outcomes, but I identify significant and negative impact of divorce for certain subgroups. For instance, divorce reduces the hourly wage received by the older children in the sample whose father has low level of education or whose mother has lower earnings level. This impact on a subgroup demonstrates the heterogeneous nature of the impact of divorce. Similarly, divorce has no significant and negative impact on high school diploma receipt for the whole sample, but only for children whose mother has little education or low levels of earnings. However, this impact disappears with increases in the mother's educational and/or earnings levels. Likewise, divorce increases the chance of grade retention for children whose mother has low levels of earnings, and the impact fades out with higher levels of mom's earnings. In comparison, the impact of divorce on the highest grade completed is significant and negative even for the whole sample, and mother's education mitigates this impact.

Gender-specific regressions on educational outcomes reveal in general stronger impacts of divorce and mitigating effects for girls than for boys, although in some cases only boys benefit from father's resources[41]. Using a model with an additional interaction term for

[41] A recent study co-authored by Andrea Beller on the effects of living in a single-parent family on overweight and obesity also found stronger effects for girls than for boys. I thank Dr. Beller for providing this information.

the HOME cognitive subscore, I investigate the channel through which parental resources affect children's later outcomes. Results suggest that the resources work mainly through channels not captured by the subscore. Although we are not sure what the exact channel is, since , the subscore mainly covers the type and frequency of activities that the parent engages with the child, a possibility for the major channel is the quality of time that the parent spends with the child.

In further analysis, I separate mother's earnings into pre- and post-divorce measures. I find that the mitigating effect associated with the mother's aggregate earnings comes from both the pre- and post-divorce earnings, except for grade retention where her post-divorce earnings alone contribute to the mitigating effect. As another check I identify the remarried mothers and include them in different groups of mothers to compare the results. In general, the results do not change. Lastly, I attempt to use an IV approach to address the endogeneity associated with divorce. Unfortunately, in my sample unilateral divorce laws are a weak instrument for predicting divorce. This calls for future effort to construct a strong instrument for divorce for this or other data sets.

Further study is also necessary to investigate the impacts on labor market outcomes. This study is limited by the data set and can only observe labor market performance during early adulthood. No child in my sample is older than 27 in 2006. A study based on longitudinal surveys spanning a longer period of time would potentially address this problem. Another limitation is that by the nature of the data set all custodial parents are mothers. Although traditionally very few children of divorce end up with the father, it would be interesting to study the behavior of this group of children and potentially any difference between the two groups. Another direction is to study the outcomes of children of never-married mothers, although here the the degree of the father's involvement could vary vastly depending on individual.

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Data Sources

National Longitudinal Survey of Youth 1979 Child and Young Adult

Source: Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development. Children of the NLSY79, 1986-2006 [computer file]. Produced and distributed by the Center for Human Resource Research, The Ohio State University. Columbus, OH: 2009.

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Source: U.S. Bureau of the Census, March Current Population Survey, Series P-20 Families and Living Arrangements Historical Time Series.

Grade Retention Rate among Students in Kindergarten through Grade 8, 1996-2007

Source: National Center for Education Statistics, Table A-18-1 Percentage of students in kindergarten through grade 8 who had ever been retained in a grade during their school career, by selected characteristics: Selected years, 1996-2007

State Population, 1950-1990

Source: U.S. Bureau of the Census, Current Population Survey of State Population.

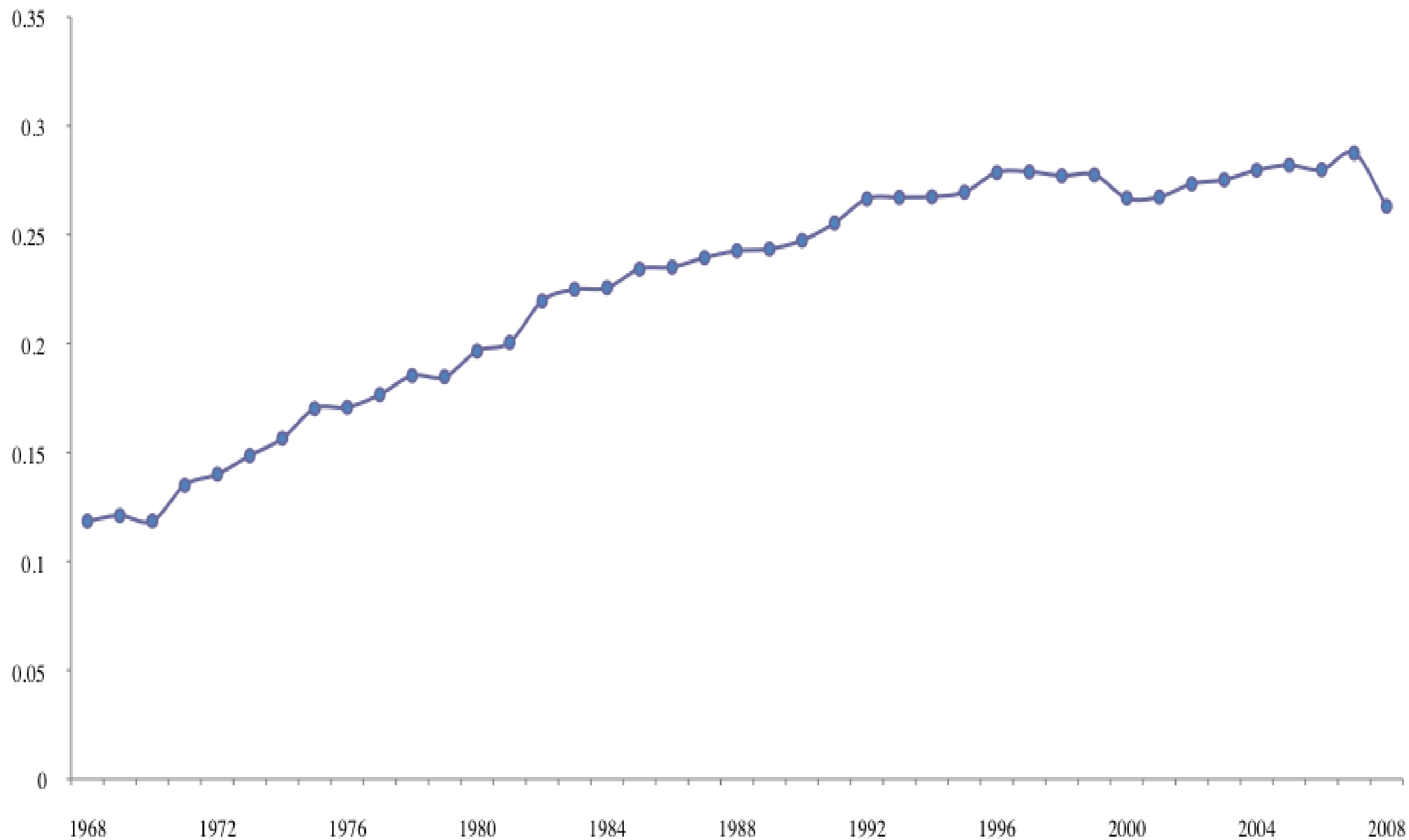
Divorces per 1,000 Population, 1950-1990

Source: National Center for Health Statistics, Monthly Vital Statistics Report, Vol. 43, No. 9, Supplement, March 22, 1995, Table1 Divorces and annulments and rates United States, 1940-90

Consumer Price Index 1978-2006

Source: U.S. Department of Labor Statistics. 2009. Table Containing History of CPI-U U.S.

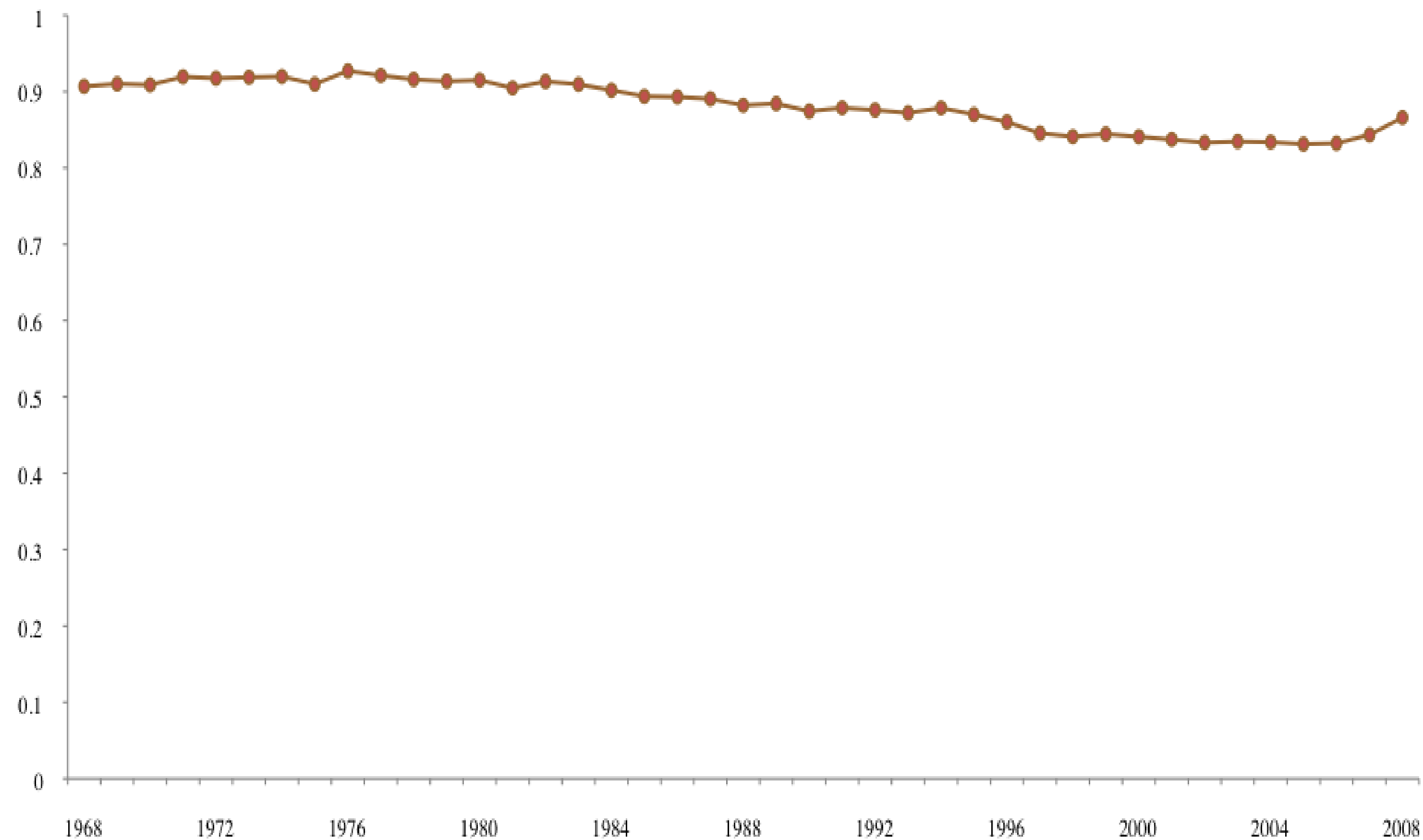
Figure 1: Percent of children under 18 living in single-parent households, 1968-2008



Data source: The March Current Population Survey Families and Living Arrangements
Revised figures are used for 1970, 1980 and 2007

Figure 2: Percent of children under 18 living in single-mother households

Out of children living with one parent, 1968-2008



Data source: The March Current Population Survey Families and Living Arrangements
Percent is taken over children under 18 living with one parent only (mother or father).
Revised figures are used for 1970, 1980 and 2007

Figure 3: Number of children repeating each grade

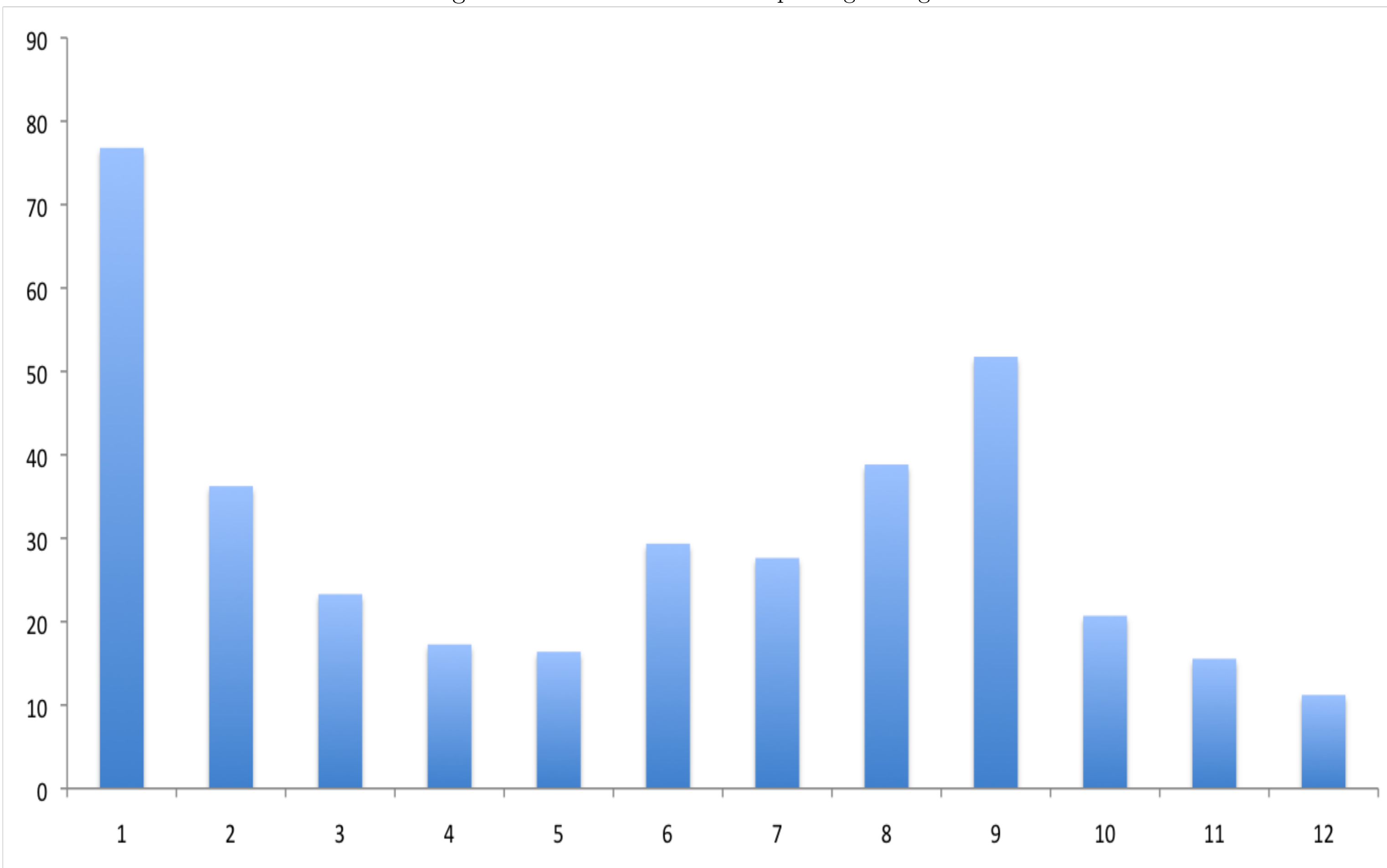
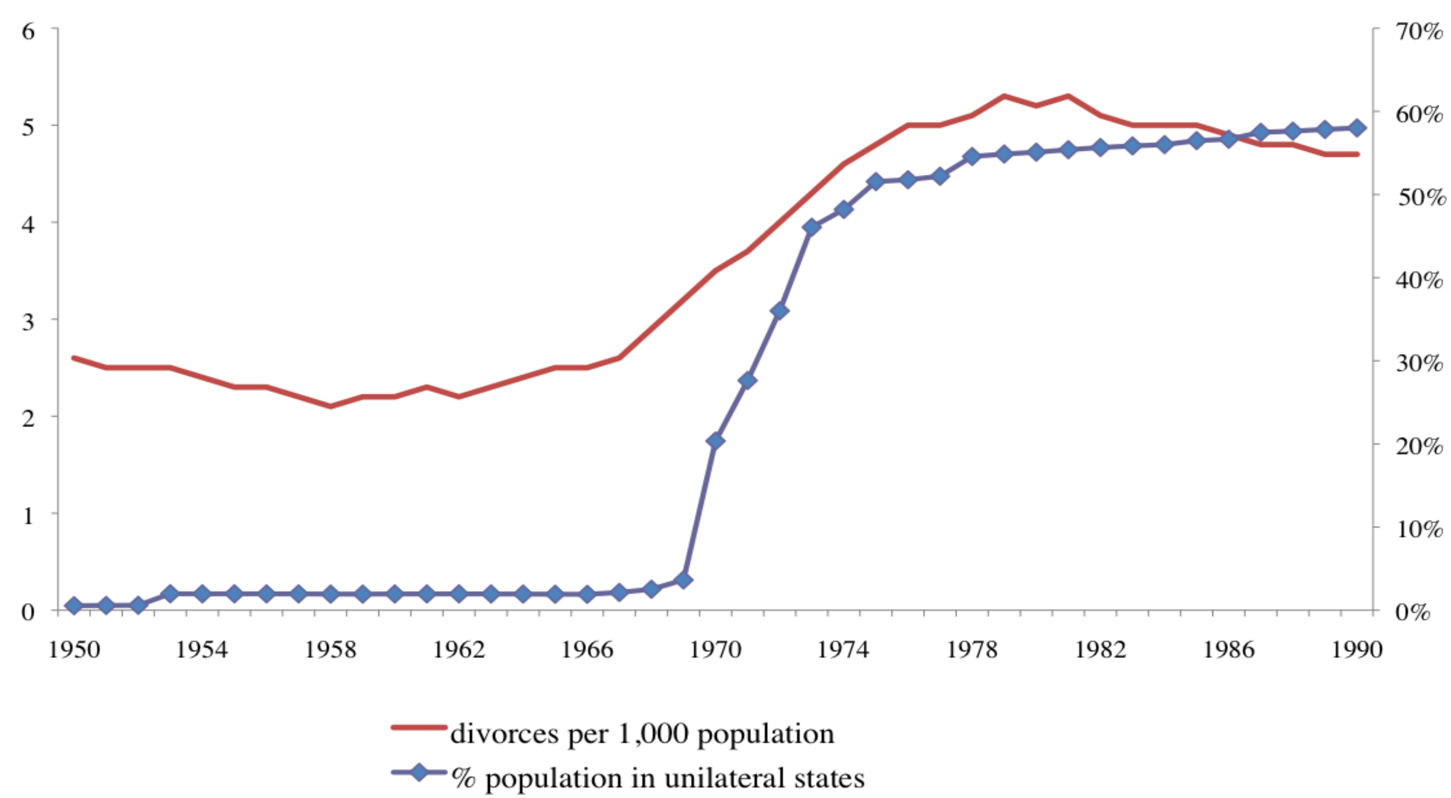


Figure 4: Impact of Unilateral Divorce Law and Divorce Rate

Percent of population under unilateral divorce laws and divorces per 1,000 population, 1950-1990



Data source: Census Population Survey of state population, National Center for Health Statistics Monthly Vital Statistics Report
Classification of states under unilateral ivorce laws from Gruber (2004)

Table 1: Sample construction and changes in key variables

Key variables	Born 1979-1988	Born to married parents	Lived with mother after divorce	Father alive from birth to 18
Female	0.483	0.471	0.471	0.467
White	0.688	0.798	0.800	0.803
Mom's age at birth	23.200	23.633	23.675	23.671
Dad's age at birth	26.459	26.260	26.304	26.251
Mom's highest grade completed	12.659	12.978	12.983	13.001
Dad's highest grade completed	12.659	12.697	12.711	12.726
Average mom's annual earnings	4,914	5,310	5,326	5,339
Average dad's pre-divorce annual earnings	14,023	14,526	14,581	14,610
Sample size	6416	3564	3436	3309

Notes: Means are weighted using customized children's population weights available from NLSY website.

Dad's pre-divorce earnings measured over 3 years before divorce (or before the weighted median age at divorce (6) for intact families).

All dollars are converted to constant 1979 dollars.

Table 2: Weighted descriptive statistics for NLSY79-Child sample

Variable	Intact families	Divorced families
CHILD CHARACTERISTICS		
Female	0.448	0.495
White	0.852	0.732
Age in 2006	21.694	22.349
Potential experience[a]	2.129	3.446
Number of siblings	1.788	1.794
PPVT (age 5-10)	98.416	94.396
FAMILY CHARACTERISTICS		
Mother's AFQT percentile	50.335	37.824
Mother's age at birth	24.283	22.771
Father's age at birth	26.838	25.364
Mother's highest grade completed	13.201	12.708
Father's pre-divorce highest grade completed	13.035	12.224
Average mother's annual earnings ($1000s)	5.106	5.680
Average father's pre-divorce annual earnings[b] ($1000s)	16.295	11.955
Average mother's pre-divorce annual earnings[c] ($1000s)	3.843	4.123
Average mother's post-divorce annual earnings[d] ($1000s)	6.121	7.690
Average pre-divorce TNFI[c] ($1000s)	26.024	17.323
Average post-divorce TNFI[d] ($1000s)	31.590	16.307
Years with a single parent	-	11.091
HOME & SCHOOL ENVIRONMENT		
HOME total score	104.845	98.443
HOME cognitive subscore	103.282	98.952
HOME emotional subscore	104.680	98.286
Mother's rating of over school quality (5 best, 1 worst)	4.210	4.098
OUTCOME VARIABLE (Measured in 2006)		
High school diploma receipt: born 1979-1988	0.764	0.742
Highest grade completed: born 1979-1982	13.380	12.416
Grade retention rate: born 1979-1988	0.096	0.204
Hourly rate of pay for primary job older group[e]	10.976	10.581
Hourly rate of pay for primary job younger group[e]	10.158	9.633
Child's annual wage income older group[f] ($1000s)	26.131	21.587
Child's annual wage income younger group[f] ($1000s)	13.993	14.979
Hours worked per week older group	39.813	38.820
Hours worked per week younger group	33.221	37.564
Sample size	1975	1334

Notes: Means are weighted using customized children's population weights available from NLSY website. Respondent is assigned a non-zero weight if he participated in any or all of the survey rounds.

[a]Potential experience = Age - Highest grade completed - 6 for those not enrolled in school in 2006, and 0 if enrolled.

[b]Measured over three years before divorce for divorced sample. Measured over three years prior to the weighted median age at divorce (6 years old) for intact families. All dollars are converted to constant 1979 dollars.

[c]Measured from time of the child's birth (or a year after for mother's pre-divorce earnings) to the weighted median age at divorce (6 years old) for intact families. Measured from time of birth to year before divorce for divorced sample. All dollars are converted to constant 1979 dollars.

[d]Measured from after the weighted median age at divorce (6 years old) to 17 or 18 for intact families. Measured from year of divorce to 17 or 18 for divorced samles. All dollars converted to constant 1979 dollars.

[e]Older group: age 24 or over in 2006 (born in or before 82). Younger group: age 21 to 23 in 2006 (born between 83 and 85).

[f]Income from wages, salary, commissions, or tips from all jobs, before deductions for taxes. Converted to constant 2006 dollars.

Table 3: Regressions on high school diploma receipt
NLSY79 Child & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
divorce	-0.015	-0.318**	-0.196	-0.379**	-0.136**	-0.342**	-0.449**
	(0.025)	(0.126)	(0.128)	(0.186)	(0.069)	(0.147)	(0.188)
female	0.069***	0.069***	0.070***	0.069***	0.070***	0.069***	0.070***
	(0.018)	(0.018)	(0.018)	(0.018)	(0.019)	(0.018)	(0.018)
white	-0.047*	-0.044*	-0.044*	-0.038	-0.044*	-0.044*	-0.037
	(0.024)	(0.024)	(0.024)	(0.025)	(0.024)	(0.024)	(0.025)
age in 2006	0.057***	0.056***	0.056***	0.056***	0.057***	0.056***	0.056***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
PPVT score age 5-10	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***	0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
number of siblings	-0.021**	-0.020**	-0.020**	-0.018*	-0.021**	-0.020**	-0.018*
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
mom's AFQT score	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
mom's age @ birth	0.002	0.002	0.002	0.001	0.002	0.002	0.001
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
dad's age @ birth	-0.002	-0.002	-0.002	-0.001	-0.002	-0.002	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
HOME cognitive subscore	0.002	0.002	0.002	0.002	0.002	0.002	0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
HOME emotional subscore	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
mom's rating of school quality	-0.013	-0.014	-0.013	-0.011	-0.012	-0.014	-0.011
	(0.016)	(0.015)	(0.016)	(0.016)	(0.015)	(0.015)	(0.015)
log ave_TNFI_pre	0.000	0.003	0.001	-0.004	0.001	0.002	-0.003
	(0.014)	(0.014)	(0.014)	(0.015)	(0.014)	(0.014)	(0.015)
log ave_TNFI_post	0.019	0.019	0.020	0.010	0.019	0.020	0.011
	(0.022)	(0.022)	(0.023)	(0.022)	(0.022)	(0.022)	(0.022)
mom's HGC	0.011**	0.003	0.012**	0.012**	0.011**	0.004	0.012**
	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)
pre-divorce dad's HGC	0.008	0.008	0.002	0.007	0.008	0.006	0.007
	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.007)	(0.005)
log mom's earnings	0.003	0.003	0.002	-0.005	0.003	0.002	-0.005
	(0.007)	(0.007)	(0.007)	(0.006)	(0.007)	(0.007)	(0.006)
log pre-divorce dad's earnings	0.004	0.004	0.004	0.004	-0.004	0.004	-0.003
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)
divorce*mom's HGC		0.024**				0.021**	
		(0.009)				(0.010)	
divorce*dad's HGC			0.015			0.004	
			(0.010)			(0.010)	
divorce*log mom's earnings				0.044**			0.041*
				(0.021)			(0.021)
divorce*log dad's earnings					0.014*		0.011
					(0.007)		(0.007)
Constant	-1.189***	-1.069***	-1.112***	-0.992***	-1.118***	-1.058***	-0.950***
	(0.288)	(0.290)	(0.289)	(0.298)	(0.292)	(0.292)	(0.300)
Observations	1730	1730	1730	1730	1730	1730	1730

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
lave_TNFI_post and *lave_TNFI_post* for average pre- and post-divorce TNFI.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 4: Regressions on highest grade completed

NLSY79 Child & Young Adult born 1979-1982 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
divorce	-0.492**	-2.357**	-1.576	-2.045**	-1.088*	-2.487*	-2.364**
	(0.216)	(1.078)	(1.175)	(1.032)	(0.601)	(1.301)	(1.095)
female	0.725***	0.734***	0.723***	0.723***	0.735***	0.733***	0.731***
	(0.171)	(0.172)	(0.171)	(0.171)	(0.171)	(0.172)	(0.170)
white	-0.416*	-0.369*	-0.399*	-0.375*	-0.405*	-0.368*	-0.370*
	(0.221)	(0.221)	(0.222)	(0.222)	(0.221)	(0.222)	(0.222)
age in 2006	0.123	0.113	0.114	0.118	0.116	0.112	0.113
	(0.083)	(0.083)	(0.084)	(0.083)	(0.083)	(0.084)	(0.082)
PPVT score age 5-10	0.009	0.009	0.009	0.009	0.009	0.009	0.010
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
number of siblings	-0.030	-0.028	-0.027	-0.015	-0.031	-0.027	-0.018
	(0.104)	(0.101)	(0.105)	(0.105)	(0.104)	(0.101)	(0.105)
mom's AFQT score	0.003	0.003	0.003	0.002	0.003	0.003	0.002
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
mom's age @ birth	0.066	0.065	0.062	0.062	0.067	0.064	0.064
	(0.056)	(0.055)	(0.055)	(0.057)	(0.057)	(0.055)	(0.057)
dad's age @ birth	-0.025	-0.028	-0.026	-0.021	-0.026	-0.028	-0.023
	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)	(0.028)
HOME cognitive subscore	0.034***	0.036***	0.035***	0.035***	0.034***	0.035***	0.034***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
HOME emotional subscore	0.003	0.000	0.001	0.003	0.003	-0.000	0.003
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
mom's rating of school quality	0.199	0.208	0.201	0.211	0.196	0.208	0.208
	(0.130)	(0.127)	(0.130)	(0.129)	(0.130)	(0.128)	(0.129)
log ave_TNFI_pre	-0.006	-0.003	-0.005	-0.013	0.000	-0.003	-0.008
	(0.098)	(0.094)	(0.097)	(0.099)	(0.098)	(0.094)	(0.099)
log ave_TNFI_post	0.363**	0.363**	0.366**	0.319*	0.365**	0.364**	0.325*
	(0.177)	(0.175)	(0.176)	(0.180)	(0.177)	(0.175)	(0.180)
mom's HGC	0.024	-0.024	0.029	0.033	0.025	-0.020	0.033
	(0.057)	(0.068)	(0.057)	(0.057)	(0.057)	(0.073)	(0.057)
pre-divorce dad's HGC	0.162***	0.158***	0.120	0.158***	0.165***	0.149*	0.161***
	(0.060)	(0.059)	(0.084)	(0.060)	(0.060)	(0.088)	(0.060)
log mom's earnings	0.090	0.089	0.085	0.034	0.081	0.087	0.031
	(0.065)	(0.064)	(0.065)	(0.066)	(0.065)	(0.064)	(0.067)
log pre-divorce dad's earnings	0.025	0.022	0.026	0.014	-0.021	0.023	-0.020
	(0.034)	(0.033)	(0.034)	(0.034)	(0.051)	(0.034)	(0.051)
divorce*mom's HGC		0.149*				0.140	
		(0.084)				(0.095)	
divorce*dad's HGC			0.092			0.021	
			(0.096)			(0.108)	
divorce*log mom's earnings				0.190			0.174
				(0.121)			(0.125)
divorce*log dad's earnings					0.071		0.053
					(0.067)		(0.068)
Constant	-3.035	-1.939	-2.111	-2.025	-2.428	-1.798	-1.652
	(3.127)	(3.178)	(3.382)	(3.181)	(3.166)	(3.360)	(3.204)
Observations	582	582	582	582	582	582	582

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
lave_TNFI_post and *lave_TNFI_post* for average pre- and post-divorce TNFI.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 5: Regressions on grade retention
NLSY79 Child & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
divorce	0.027	0.093	0.139	0.290**	-0.008	0.141	0.247*
	(0.022)	(0.116)	(0.112)	(0.121)	(0.067)	(0.135)	(0.128)
female	-0.079***	-0.079***	-0.080***	-0.079***	-0.079***	-0.080***	-0.079***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
white	0.028	0.027	0.026	0.021	0.028	0.026	0.022
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
age in 2006	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***	0.018***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
PPVT score age 5-10	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
number of siblings	0.008	0.008	0.007	0.005	0.008	0.007	0.005
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
mom's AFQT score	-0.001	-0.001	-0.001	-0.000	-0.001	-0.001	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
mom's age @ birth	0.003	0.003	0.003	0.004	0.003	0.003	0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
dad's age @ birth	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
HOME cognitive subscore	-0.003**	-0.003***	-0.003**	-0.003***	-0.003***	-0.003**	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
HOME emotional subscore	-0.002*	-0.002*	-0.002*	-0.002*	-0.002*	-0.002*	-0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
mom's rating of school quality	-0.025	-0.025	-0.025	-0.026*	-0.025	-0.025	-0.026
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
log ave_TNFI_pre	-0.011	-0.011	-0.011	-0.007	-0.010	-0.011	-0.007
	(0.016)	(0.016)	(0.016)	(0.015)	(0.016)	(0.016)	(0.015)
log ave_TNFI_post	-0.031	-0.031	-0.032	-0.025	-0.031	-0.032	-0.025
	(0.021)	(0.021)	(0.021)	(0.020)	(0.021)	(0.021)	(0.020)
mom's HGC	-0.008*	-0.006	-0.009*	-0.009*	-0.008*	-0.009*	-0.009*
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
pre-divorce dad's HGC	0.005	0.005	0.009**	0.006	0.005	0.009**	0.006
	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)
log mom's earnings	-0.010*	-0.010*	-0.009*	-0.004	-0.010*	-0.009*	-0.004
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
log pre-divorce dad's earnings	-0.006	-0.006	-0.006	-0.006	-0.008	-0.006	-0.009*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)
divorce*mom's HGC		-0.005				-0.000	
		(0.008)				(0.009)	
divorce*dad's HGC			-0.009			-0.009	
			(0.009)			(0.009)	
divorce*log mom's earnings				-0.032**			-0.033**
				(0.014)			(0.014)
divorce*log dad's earnings					0.004		0.007
					(0.007)		(0.007)
Constant	1.179***	1.154***	1.132***	1.036***	1.201***	1.131***	1.064***
	(0.270)	(0.272)	(0.271)	(0.273)	(0.273)	(0.272)	(0.274)
Observations	1712	1712	1712	1712	1712	1712	1712

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
lave_TNFI_post and *lave_TNFI_post* for average pre- and post-divorce TNFI.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 6: Regressions on labor market outcomes

NLSY79 Child & Young Adult born 1979-1985 to married parents

	(1) wage old	(2) wage young	(3) log income old	(4) log income young	(5) hr/wk old	(6) hr/wk young
divorce	1.617*	0.580	0.126	0.052	0.674	1.979
	(0.852)	(1.123)	(0.095)	(0.136)	(1.202)	(1.428)
female	-1.771**	-0.518	-0.477***	-0.221**	-5.625***	-4.610***
	(0.690)	(1.215)	(0.092)	(0.110)	(1.063)	(1.169)
white	0.418	-2.346	0.127	0.036	1.086	1.984
	(0.660)	(1.902)	(0.112)	(0.141)	(1.236)	(1.424)
age in 2006	1.176**	1.486***	0.119**	0.186***	1.004*	0.235
	(0.456)	(0.544)	(0.051)	(0.067)	(0.530)	(0.731)
potential experience	-0.139	-0.085	-0.017	0.127***	0.321*	1.358***
	(0.108)	(0.141)	(0.017)	(0.025)	(0.183)	(0.270)
PPVT score age 5-10	0.061**	0.007	0.006**	-0.002	0.023	-0.051
	(0.029)	(0.021)	(0.003)	(0.004)	(0.035)	(0.049)
number of siblings	0.022	0.147	0.018	-0.093**	0.085	-1.565***
	(0.330)	(0.372)	(0.040)	(0.047)	(0.506)	(0.437)
mom's AFQT score	-0.022	0.015	-0.001	0.003	0.002	-0.044
	(0.023)	(0.017)	(0.002)	(0.003)	(0.027)	(0.029)
mom's age @ birth	-0.038	-0.218	-0.013	-0.036	-0.090	-0.756**
	(0.187)	(0.143)	(0.029)	(0.028)	(0.308)	(0.335)
dad's age @ birth	0.099	0.239	-0.004	-0.002	0.048	-0.114
	(0.100)	(0.148)	(0.011)	(0.016)	(0.137)	(0.193)
HOME cognitive subscore	-0.024	-0.119	0.007	-0.002	0.009	-0.094
	(0.030)	(0.104)	(0.006)	(0.007)	(0.063)	(0.086)
HOME emotional subscore	0.029	-0.020	0.007	0.003	0.018	-0.076
	(0.047)	(0.058)	(0.006)	(0.007)	(0.067)	(0.093)
mom's rating of school quality	0.305	0.153	0.092	-0.019	0.746	-0.179
	(0.415)	(0.610)	(0.070)	(0.091)	(0.772)	(0.941)
log ave_TNFI_pre	0.093	0.898	0.007	0.205*	-0.385	1.437
	(0.505)	(0.693)	(0.049)	(0.120)	(0.380)	(1.272)
log ave_TNFI_post	2.327***	4.116	0.396***	0.093	2.043**	1.817
	(0.609)	(3.641)	(0.095)	(0.151)	(0.949)	(1.559)
mom's HGC	0.317*	0.089	-0.043	-0.002	-0.069	0.222
	(0.176)	(0.190)	(0.028)	(0.028)	(0.259)	(0.333)
pre-divorce dad's HGC	-0.402**	-0.072	-0.010	-0.020	-0.108	-0.138
	(0.183)	(0.181)	(0.026)	(0.028)	(0.260)	(0.276)
log mom's earnings	-0.107	0.285	-0.014	-0.012	-0.409	-0.081
	(0.230)	(0.202)	(0.034)	(0.030)	(0.399)	(0.406)
log pre-divorce dad's earnings	0.120	0.187	0.006	0.027	0.084	0.126
	(0.100)	(0.133)	(0.017)	(0.019)	(0.213)	(0.232)
Constant	-48.803***	-63.631	-5.097**	-3.622*	-5.398	41.432*
	(17.868)	(39.824)	(1.985)	(2.067)	(18.877)	(22.023)
Observations	175	198	421	363	483	444

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All outcome variables are from the 2006 survey.
Hourly wage is reported for the primary job and is available only for those working in 2006.
lave_TNFI_post and *lave_TNFI_post* for average pre- and post-divorce TNFI.
Old: age 24 or over in 2006 (born in or before 82).
Young: age 21 to 23 in 2006 (born 83 to 85).
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 7: Regressions on hourly wage
NLSY79 Child & Young Adult born 1979-1982 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
divorce	1.617*	-0.946	-4.692*	-4.700*	1.110	-3.880	-4.713
	(0.852)	(2.838)	(2.621)	(2.744)	(2.667)	(2.835)	(3.744)
female	-1.771**	-1.748**	-1.803***	-1.610**	-1.771**	-1.828***	-1.610**
	(0.690)	(0.694)	(0.689)	(0.705)	(0.694)	(0.693)	(0.711)
white	0.418	0.505	0.534	0.568	0.435	0.487	0.568
	(0.660)	(0.647)	(0.653)	(0.642)	(0.676)	(0.654)	(0.658)
age in 2006	1.176**	1.161**	1.136**	1.117**	1.175**	1.140**	1.117**
	(0.456)	(0.461)	(0.461)	(0.447)	(0.458)	(0.462)	(0.448)
potential experience	-0.139	-0.134	-0.119	-0.121	-0.140	-0.119	-0.121
	(0.108)	(0.110)	(0.109)	(0.106)	(0.109)	(0.109)	(0.106)
PPVT score age 5-10	0.061**	0.063**	0.066**	0.069**	0.062**	0.066**	0.069**
	(0.029)	(0.028)	(0.028)	(0.030)	(0.030)	(0.028)	(0.030)
number of siblings	0.022	0.036	0.164	0.132	0.026	0.181	0.132
	(0.330)	(0.327)	(0.317)	(0.337)	(0.334)	(0.315)	(0.341)
mom's AFQT score	-0.022	-0.022	-0.020	-0.027	-0.022	-0.020	-0.027
	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)	(0.023)
mom's age @ birth	-0.038	-0.051	-0.061	-0.051	-0.039	-0.055	-0.052
	(0.187)	(0.186)	(0.181)	(0.184)	(0.189)	(0.184)	(0.185)
dad's age @ birth	0.099	0.089	0.070	0.082	0.095	0.072	0.082
	(0.100)	(0.100)	(0.100)	(0.099)	(0.105)	(0.100)	(0.104)
HOME cognitive subscore	-0.024	-0.020	-0.023	-0.016	-0.024	-0.025	-0.016
	(0.030)	(0.030)	(0.029)	(0.030)	(0.030)	(0.029)	(0.031)
HOME emotional subscore	0.029	0.023	0.016	0.018	0.028	0.018	0.018
	(0.047)	(0.046)	(0.048)	(0.046)	(0.050)	(0.047)	(0.049)
mom's rating of school quality	0.305	0.309	0.362	0.330	0.297	0.370	0.330
	(0.415)	(0.416)	(0.425)	(0.413)	(0.430)	(0.428)	(0.428)
log ave_TNFI_pre	0.093	0.049	0.044	0.081	0.106	0.069	0.082
	(0.505)	(0.505)	(0.506)	(0.509)	(0.518)	(0.511)	(0.523)
log ave_TNFI_post	2.327***	2.310***	2.285***	2.179***	2.335***	2.290***	2.180***
	(0.609)	(0.633)	(0.629)	(0.592)	(0.610)	(0.616)	(0.590)
mom's HGC	0.317*	0.246	0.341*	0.363**	0.317*	0.403**	0.363**
	(0.176)	(0.205)	(0.173)	(0.178)	(0.177)	(0.198)	(0.178)
pre-divorce dad's HGC	-0.402**	-0.415**	-0.656***	-0.487**	-0.397**	-0.696***	-0.487**
	(0.183)	(0.178)	(0.209)	(0.188)	(0.190)	(0.229)	(0.195)
log mom's earnings	-0.107	-0.101	-0.144	-0.292	-0.112	-0.156	-0.292
	(0.230)	(0.236)	(0.232)	(0.253)	(0.228)	(0.236)	(0.252)
log pre-divorce dad's earnings	0.120	0.119	0.144	0.081	0.071	0.151	0.080
	(0.100)	(0.100)	(0.104)	(0.097)	(0.244)	(0.105)	(0.248)
divorce*mom's HGC		0.203				-0.163	
		(0.233)				(0.284)	
divorce*dad's HGC			0.541**			0.648**	
			(0.221)			(0.298)	
divorce*log mom's earnings				0.772**			0.772**
				(0.357)			(0.356)
divorce*log dad's earnings					0.057		0.002
					(0.287)		(0.289)
Observations	175	175	175	175	175	175	175

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All outcome variables are from the 2006 survey.
Hourly wage is reported for the primary job and is available only for those working in 2006.
lave_TNFI_post and *lave_TNFI_post* for average pre- and post-divorce TNFI.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 8: Regressions on labor market outcomes for children out of school
NLSY79 Child & Young Adult born 1979-1985 to married parents

	(1) wage old	(2) wage young	(3) log income old	(4) log income young	(5) hr/wk old	(6) hr/wk young
divorce	1.667	0.078	0.083	0.279*	0.769	2.318
	(1.106)	(0.914)	(0.099)	(0.143)	(1.357)	(1.667)
female	-3.093***	-1.910***	-0.585***	-0.133	-6.398***	-4.889***
	(0.932)	(0.695)	(0.100)	(0.127)	(1.133)	(1.460)
white	0.756	-0.517	0.171	0.043	1.618	-0.274
	(0.712)	(0.541)	(0.124)	(0.165)	(1.316)	(1.699)
age in 2006	1.491***	0.697*	0.123**	0.125*	1.491***	-0.265
	(0.525)	(0.407)	(0.055)	(0.069)	(0.561)	(0.871)
potential experience	-0.819***	-0.320**	-0.075***	0.034	-0.447*	-0.387
	(0.259)	(0.153)	(0.023)	(0.035)	(0.270)	(0.373)
PPVT score age 5-10	0.045	-0.034	0.004	-0.004	0.002	-0.006
	(0.030)	(0.025)	(0.003)	(0.005)	(0.037)	(0.054)
number of siblings	-0.090	-0.242	0.019	-0.079	-0.047	-1.198**
	(0.342)	(0.214)	(0.040)	(0.056)	(0.538)	(0.559)
mom's AFQT score	-0.016	0.031	0.000	0.007**	0.011	-0.003
	(0.029)	(0.021)	(0.002)	(0.003)	(0.031)	(0.032)
mom's age @ birth	-0.059	-0.156	-0.020	-0.043	0.018	-0.363
	(0.248)	(0.157)	(0.029)	(0.030)	(0.356)	(0.410)
dad's age @ birth	0.125	0.154	-0.003	0.017	0.024	-0.339
	(0.124)	(0.097)	(0.012)	(0.019)	(0.141)	(0.224)
HOME cognitive subscore	-0.004	0.052	0.004	0.004	-0.010	-0.052
	(0.037)	(0.031)	(0.005)	(0.007)	(0.065)	(0.103)
HOME emotional subscore	0.044	0.078*	0.006	0.006	0.024	0.006
	(0.054)	(0.045)	(0.006)	(0.008)	(0.071)	(0.115)
mom's rating of school quality	0.328	0.052	0.097	-0.070	0.999	0.121
	(0.543)	(0.418)	(0.074)	(0.090)	(0.851)	(1.036)
log ave_TNFI_pre	0.075	-0.100	0.093	0.106	0.229	-2.373
	(0.583)	(0.617)	(0.094)	(0.132)	(0.926)	(1.839)
log ave_TNFI_post	1.451**	0.109	0.411***	0.238	1.494	2.021
	(0.615)	(0.641)	(0.108)	(0.173)	(1.049)	(1.877)
mom's HGC	0.237	-0.133	-0.031	-0.099***	-0.106	-0.367
	(0.207)	(0.197)	(0.026)	(0.035)	(0.276)	(0.429)
pre-divorce dad's HGC	-0.486**	0.004	-0.023	0.028	0.157	-0.056
	(0.229)	(0.143)	(0.023)	(0.032)	(0.324)	(0.320)
log mom's earnings	-0.060	0.043	-0.029	-0.007	-0.596	-0.202
	(0.229)	(0.161)	(0.033)	(0.043)	(0.397)	(0.557)
log pre-divorce dad's earnings	0.182*	0.024	-0.002	-0.004	0.116	0.348
	(0.098)	(0.134)	(0.018)	(0.019)	(0.233)	(0.338)
Constant	-43.609**	-13.260	-4.883**	-2.564	-13.468	79.402***
	(19.261)	(10.195)	(2.084)	(2.208)	(21.574)	(27.746)
Observations	131	100	356	228	405	279

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
lave_TNFI_post and *lave_TNFI_post* for average pre- and post-divorce TNFI. *gender*=1 for female.
Old: age 24 or over in 2006 (born in or before 82).
Young: age 21 to 23 in 2006 (born 83 to 85).
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 9: Regressions on high school diploma receipt, by gender
NLSY79 Child & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Girls							
divorce	0.013	-0.266	-0.224	-0.432**	-0.150*	-0.327*	-0.542**
	(0.032)	(0.165)	(0.155)	(0.205)	(0.085)	(0.182)	(0.211)
divorce*mom's HGC		0.022*				0.015	
		(0.012)				(0.013)	
divorce*dad's HGC			0.019			0.012	
			(0.012)			(0.013)	
divorce*log mom's earnings				0.053**			0.050**
				(0.023)			(0.023)
divorce*log dad's earnings					0.019**		0.016*
					(0.009)		(0.009)
Constant	-1.006***	-0.854**	-0.882**	-0.717*	-0.912**	-0.824**	-0.656
	(0.384)	(0.393)	(0.390)	(0.404)	(0.388)	(0.395)	(0.406)
Observations	837	837	837	837	837	837	837
Boys							
divorce	-0.036	-0.340**	-0.164	-0.324	-0.118	-0.330*	-0.362
	(0.035)	(0.172)	(0.170)	(0.237)	(0.095)	(0.200)	(0.241)
divorce*mom's HGC		0.024*				0.025*	
		(0.013)				(0.014)	
divorce*dad's HGC			0.010			-0.002	
			(0.013)			(0.015)	
divorce*log mom's earnings				0.035			0.032
				(0.027)			(0.028)
divorce*log dad's earnings					0.010		0.007
					(0.010)		(0.011)
Constant	-1.467***	-1.393***	-1.422***	-1.334***	-1.420***	-1.397***	-1.311***
	(0.411)	(0.413)	(0.416)	(0.419)	(0.415)	(0.417)	(0.422)
Observations	893	893	893	893	893	893	893

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls, except for gender, reported in Table 3.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 10: Regressions on highest grade completed, by gender

NLSY79 Child & Young Adult born 1979-1982 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Girls							
divorce	-0.572*	-2.260*	-2.942**	-2.238	0.363	-3.316**	-1.290
	(0.291)	(1.365)	(1.403)	(1.435)	(0.912)	(1.597)	(1.503)
divorce*mom's HGC		0.135				0.053	
		(0.110)				(0.121)	
divorce*dad's HGC			0.200*			0.176	
			(0.116)			(0.130)	
divorce*log mom's earnings				0.204			0.237
				(0.169)			(0.174)
divorce*log dad's earnings					-0.107		-0.140
					(0.104)		(0.106)
Constant	-0.070	1.102	1.715	1.246	-1.065	1.958	0.164
	(4.728)	(4.799)	(4.937)	(4.933)	(4.708)	(4.912)	(4.846)
Observations	289	289	289	289	289	289	289
Boys							
divorce	-0.313	-1.950	0.209	-1.745	-2.016***	-0.978	-2.779**
	(0.318)	(1.403)	(1.625)	(1.183)	(0.662)	(1.719)	(1.242)
divorce*mom's HGC		0.131				0.199	
		(0.108)				(0.122)	
divorce*dad's HGC			-0.044			-0.154	
			(0.135)			(0.149)	
divorce*log mom's earnings				0.176			0.103
				(0.144)			(0.153)
divorce*log dad's earnings					0.211***		0.202**
					(0.079)		(0.082)
Constant	-5.856	-5.085	-6.302	-5.206	-4.175	-6.239	-3.866
	(4.270)	(4.332)	(4.547)	(4.312)	(4.279)	(4.423)	(4.320)
Observations	293	293	293	293	293	293	293

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls, except for gender, reported in Table 4.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 11: Regressions on grade retention, by gender

NLSY79 Child & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Girls							
divorce	0.010	0.088	-0.051	0.275*	-0.098	0.035	0.171
	(0.027)	(0.146)	(0.112)	(0.160)	(0.086)	(0.151)	(0.175)
divorce*mom's HGC		-0.006				-0.012	
		(0.010)				(0.011)	
divorce*dad's HGC			0.005			0.011	
			(0.009)			(0.010)	
divorce*log mom's earnings				-0.032*			-0.034*
				(0.018)			(0.019)
divorce*log dad's earnings					0.013		0.015
					(0.009)		(0.009)
Constant	1.216***	1.174***	1.248***	1.046***	1.279***	1.200***	1.104***
	(0.334)	(0.344)	(0.338)	(0.353)	(0.339)	(0.343)	(0.356)
Observations	831	831	831	831	831	831	831
Boys							
divorce	0.049	0.114	0.387***	0.348**	0.100	0.301*	0.364**
	(0.032)	(0.155)	(0.148)	(0.157)	(0.096)	(0.173)	(0.161)
divorce*mom's HGC		-0.005				0.013	
		(0.011)				(0.014)	
divorce*dad's HGC			-0.027**			-0.034**	
			(0.011)			(0.013)	
divorce*log mom's earnings				-0.036**			-0.035*
				(0.018)			(0.019)
divorce*log dad's earnings					-0.006		-0.003
					(0.011)		(0.011)
Constant	1.123***	1.107***	1.004**	0.981**	1.091***	1.016**	0.971**
	(0.393)	(0.395)	(0.396)	(0.395)	(0.397)	(0.395)	(0.397)
Observations	881	881	881	881	881	881	881

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls, except for gender, reported in Table 5.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 12: Regressions on high school diploma receipt, with HOME interaction term

NLSY79 Children & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Without HOME cognitive interaction							
divorce	-0.015	-0.318**	-0.196	-0.379**	-0.136**	-0.342**	-0.449**
	(0.025)	(0.126)	(0.128)	(0.186)	(0.069)	(0.147)	(0.188)
divorce*mom's HGC		0.024**				0.021**	
		(0.009)				(0.010)	
divorce*dad's HGC			0.015			0.004	
			(0.010)			(0.010)	
divorce*log mom's earnings				0.044**			0.041*
				(0.021)			(0.021)
divorce*log dad's earnings					0.014*		0.011
					(0.007)		(0.007)
Constant	-1.189***	-1.069***	-1.112***	-0.992***	-1.118***	-1.058***	-0.950***
	(0.288)	(0.290)	(0.289)	(0.298)	(0.292)	(0.292)	(0.300)
Observations	1730	1730	1730	1730	1730	1730	1730
With HOME cognitive interaction							
divorce	-0.015	-0.558**	-0.512**	-0.664***	-0.532**	-0.560**	-0.695***
	(0.025)	(0.218)	(0.220)	(0.245)	(0.216)	(0.221)	(0.246)
divorce*HOME cog		0.003	0.004*	0.003	0.004**	0.003	0.003
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
divorce*mom's HGC		0.017*				0.017*	
		(0.010)				(0.010)	
divorce*dad's HGC			0.008			0.001	
			(0.010)			(0.011)	
divorce*log mom's earnings				0.037*			0.035
				(0.022)			(0.022)
divorce*log dad's earnings					0.011		0.009
					(0.007)		(0.007)
Constant	-1.189***	-0.925***	-0.927***	-0.834***	-0.900***	-0.925***	-0.814***
	(0.288)	(0.307)	(0.305)	(0.308)	(0.307)	(0.307)	(0.310)
Observations	1730	1730	1730	1730	1730	1730	1730

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls reported in Table 3.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 13: Regressions on highest grade completed, with HOME interaction term

NLSY79 Child & Young Adult born 1979-1982 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Without HOME cognitive interaction							
divorce	-0.492**	-2.357**	-1.576	-2.045**	-1.088*	-2.487*	-2.364**
	(0.216)	(1.078)	(1.175)	(1.032)	(0.601)	(1.301)	(1.095)
divorce*mom's HGC		0.149*				0.140	
		(0.084)				(0.095)	
divorce*dad's HGC			0.092			0.021	
			(0.096)			(0.108)	
divorce*log mom's earnings				0.190			0.174
				(0.121)			(0.125)
divorce*log dad's earnings					0.071		0.053
					(0.067)		(0.068)
Constant	-3.035	-1.939	-2.111	-2.025	-2.428	-1.798	-1.652
	(3.127)	(3.178)	(3.382)	(3.181)	(3.166)	(3.360)	(3.204)
Observations	582	582	582	582	582	582	582
With HOME cognitive interaction							
divorce	-0.492**	-2.309	-2.047	-2.565	-1.995	-2.373	-2.728*
	(0.204)	(1.539)	(1.550)	(1.613)	(1.538)	(1.561)	(1.629)
divorce*HOME cog		-0.001	0.006	0.006	0.010	-0.002	0.005
		(0.016)	(0.016)	(0.015)	(0.015)	(0.017)	(0.015)
divorce*mom's HGC		0.151*				0.142	
		(0.082)				(0.088)	
divorce*dad's HGC			0.078			0.023	
			(0.086)			(0.092)	
divorce*log mom's earnings				0.177			0.166
				(0.121)			(0.122)
divorce*log dad's earnings					0.063		0.050
					(0.068)		(0.069)
Constant	-3.035	-1.975	-1.814	-1.664	-1.829	-1.874	-1.408
	(3.085)	(3.247)	(3.278)	(3.268)	(3.276)	(3.274)	(3.289)
Observations	582	582	582	582	582	582	582

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls reported in Table 4.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 14: Regressions on grade retention, with HOME interaction term
NLSY79 Child & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Without HOME cognitive interaction							
divorce	0.027	0.093	0.139	0.290**	-0.008	0.141	0.247*
	(0.022)	(0.116)	(0.112)	(0.121)	(0.067)	(0.135)	(0.128)
divorce*mom's HGC		-0.005				-0.000	
		(0.008)				(0.009)	
divorce*dad's HGC			-0.009			-0.009	
			(0.009)			(0.009)	
divorce*log mom's earnings				-0.032**			-0.033**
				(0.014)			(0.014)
divorce*log dad's earnings					0.004		0.007
					(0.007)		(0.007)
Constant	1.179***	1.154***	1.132***	1.036***	1.201***	1.131***	1.064***
	(0.270)	(0.272)	(0.271)	(0.273)	(0.273)	(0.272)	(0.274)
Observations	1712	1712	1712	1712	1712	1712	1712
With HOME cognitive interaction							
divorce	0.027	0.118	0.131	0.257	0.078	0.133	0.235
	(0.022)	(0.199)	(0.201)	(0.206)	(0.192)	(0.205)	(0.205)
divorce*HOME cog		-0.000	0.000	0.000	-0.001	0.000	0.000
		(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
divorce*mom's HGC		-0.004				-0.000	
		(0.009)				(0.010)	
divorce*dad's HGC			-0.009			-0.009	
			(0.009)			(0.009)	
divorce*log mom's earnings				-0.032**			-0.034**
				(0.014)			(0.015)
divorce*log dad's earnings					0.005		0.007
					(0.008)		(0.008)
Constant	1.179***	1.139***	1.136***	1.054***	1.154***	1.136***	1.071***
	(0.270)	(0.282)	(0.282)	(0.281)	(0.283)	(0.282)	(0.281)
Observations	1712	1712	1712	1712	1712	1712	1712

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls reported in Table 5.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 15: Regressions on high school diploma receipt, mom's earnings separated
NLSY79 Children & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)
divorce	-0.379**	-0.449**	-0.178***	-0.325**	-0.399**
	(0.186)	(0.188)	(0.068)	(0.155)	(0.155)
log mom's earnings	-0.005	-0.005			
	(0.006)	(0.006)			
log pre-divorce mom's earnings			-0.006	0.002	-0.003
			(0.005)	(0.004)	(0.005)
log post-divorce mom's earnings			0.005	-0.006	-0.001
			(0.007)	(0.007)	(0.007)
divorce*log dad's earnings		0.011			0.011
		(0.007)			(0.008)
divorce*log mom's earnings	0.044**	0.041*			
	(0.021)	(0.021)			
divorce*log mom's pre-divorce earnings			0.023***		0.016*
			(0.008)		(0.009)
divorce*log mom's post-divorce earnings				0.037**	0.022
				(0.017)	(0.018)
Constant	-0.992***	-0.950***	-1.042***	-1.015***	-0.938***
	(0.298)	(0.300)	(0.302)	(0.311)	(0.312)
Observations	1730	1730	1677	1677	1677

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions also include the full set of control variables as shown in Table 3.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 16: Regressions on highest grade completed, mom's earnings separated
NLSY79 Children & Young Adult born 1979-1982 to married parents

	(1)	(2)	(3)	(4)	(5)
divorce	-2.045**	-2.364**	-1.342**	-2.122**	-2.364**
	(1.032)	(1.095)	(0.520)	(0.946)	(1.030)
log mom's earnings	0.034	0.031			
	(0.066)	(0.067)			
log pre-divorce mom's earnings			-0.058	-0.008	-0.037
			(0.043)	(0.040)	(0.046)
log post-divorce mom's earnings			0.158***	0.071	0.099
			(0.059)	(0.068)	(0.073)
divorce*log dad's earnings		0.053			0.026
		(0.068)			(0.068)
divorce*log mom's earnings	0.190	0.174			
	(0.121)	(0.125)			
divorce*log mom's pre-divorce earnings			0.111*		0.072
			(0.066)		(0.074)
divorce*log mom's post-divorce earnings				0.186*	0.129
				(0.108)	(0.121)
Constant	-2.025	-1.652	-2.490	-2.838	-2.075
	(3.181)	(3.204)	(3.419)	(3.368)	(3.432)
Observations	582	582	564	564	564

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions also include the full set of control variables as shown in Table 4.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 17: Regressions on grade retention, mom's earnings separated
NLSY79 Children & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)
divorce	0.290**	0.247*	0.079	0.315***	0.275**
	(0.121)	(0.128)	(0.058)	(0.109)	(0.115)
log mom's earnings	-0.004	-0.004			
	(0.005)	(0.005)			
log pre-divorce mom's earnings			-0.001	-0.004	-0.005
			(0.004)	(0.003)	(0.004)
log post-divorce mom's earnings			-0.010*	-0.002	-0.001
			(0.005)	(0.005)	(0.005)
divorce*log dad's earnings		0.007			0.006
		(0.007)			(0.008)
divorce*log mom's earnings	-0.032**	-0.033**			
	(0.014)	(0.014)			
divorce*log mom's pre-divorce earnings			-0.007		0.002
			(0.007)		(0.008)
divorce*log mom's post-divorce earnings				-0.033***	-0.036***
				(0.012)	(0.014)
Constant	1.036***	1.064***	1.195***	1.075***	1.103***
	(0.273)	(0.274)	(0.272)	(0.273)	(0.274)
Observations	1712	1712	1659	1659	1659

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions also include the full set of control variables as shown in Table 5.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 18: Weighted descriptive statistics for the divorced mothers in the NLSY79-Child sample, by remarriage status

Variable	Remarried[a] mothers	Not remarried mothers
MOTHER CHARACTERISTICS		
Mother's AFQT percentile	35.826	38.138
Mother's age at birth	21.739	22.934
Mother's highest grade completed	12.566	12.730
Average mother's pre-divorce annual earnings ($1000s)	3.534	4.216
Average mother's post-divorce annual earnings ($1000s)	6.735	7.843
Sample size	173	1161

Notes: Means are weighted using customized children's population weights available from NLSY website. Respondent is assigned a non-zero weight if he participated in any or all of the survey rounds.

[a]Remarriage defined by mother being married at least one year after divorcing biological father and before child turned 18. Any remarriage in the same year before the next survey round is not counted. There is no disinction between remarriage with biological father and with another man.

Table 19: Regressions on high school diploma receipt, by mother's remarriage status
NLSY79 Child & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Effect of divorce (results from Table 3)							
divorce	-0.015	-0.318**	-0.196	-0.379**	-0.136**	-0.342**	-0.449**
	(0.025)	(0.126)	(0.128)	(0.186)	(0.069)	(0.147)	(0.188)
divorce*mom's HGC		0.024**				0.021**	
		(0.009)				(0.010)	
divorce*dad's HGC			0.015			0.004	
			(0.010)			(0.010)	
divorce*log mom's earnings				0.044**			0.041*
				(0.021)			(0.021)
divorce*log dad's earnings					0.014*		0.011
					(0.007)		(0.007)
Observations	1730	1730	1730	1730	1730	1730	1730
Effect of living with single mother (divorced and not remarried mothers vs. other mothers)							
single	-0.005	-0.330**	-0.245*	-0.336*	-0.133*	-0.388***	-0.410**
	(0.025)	(0.130)	(0.129)	(0.185)	(0.074)	(0.147)	(0.188)
single*mom's HGC		0.025***				0.020*	
		(0.010)				(0.010)	
single*dad's HGC			0.020**			0.011	
			(0.010)			(0.011)	
single*log mom's earnings				0.040*			0.036*
				(0.021)			(0.021)
single*log dad's earnings					0.015*		0.012
					(0.008)		(0.008)
Observations	1730	1730	1730	1730	1730	1730	1730
Effect of divorce, excluding remarried mothers (excluding remarried mothers)							
divorce	-0.010	-0.351***	-0.239*	-0.343*	-0.146*	-0.398***	-0.424**
	(0.026)	(0.131)	(0.130)	(0.187)	(0.075)	(0.149)	(0.190)
divorce*mom's HGC		0.027***				0.022**	
		(0.010)				(0.010)	
divorce*dad's HGC			0.019*			0.009	
			(0.010)			(0.011)	
divorce*log mom's earnings				0.040*			0.037*
				(0.021)			(0.022)
divorce*log dad's earnings					0.016**		0.013
					(0.008)		(0.008)
Observations	1636	1636	1636	1636	1636	1636	1636

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls reported in Table 3.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 20: Regressions on highest grade completed, by mother's remarriage status

NLSY79 Child & Young Adult born 1979-1982 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Effect of divorce (results from Table 4)							
divorce	-0.492**	-2.357**	-1.576	-2.045**	-1.088*	-2.487*	-2.364**
	(0.216)	(1.078)	(1.175)	(1.032)	(0.601)	(1.301)	(1.095)
divorce*mom's HGC		0.149*				0.140	
		(0.084)				(0.095)	
divorce*dad's HGC			0.092			0.021	
			(0.096)			(0.108)	
divorce*log mom's earnings				0.190			0.174
				(0.121)			(0.125)
divorce*log dad's earnings					0.071		0.053
					(0.067)		(0.068)
Observations	582	582	582	582	582	582	582
Effect of living with single mother (divorced and not remarried mothers vs. other mothers)							
single	-0.481**	-2.659**	-1.638	-1.887*	-1.139*	-2.785**	-2.212**
	(0.205)	(1.127)	(1.194)	(1.025)	(0.593)	(1.352)	(1.099)
single*mom's HGC		0.175*				0.164	
		(0.090)				(0.101)	
single*dad's HGC			0.098			0.022	
			(0.098)			(0.109)	
single*log mom's earnings				0.173			0.150
				(0.122)			(0.125)
single*log dad's earnings					0.079		0.062
					(0.067)		(0.069)
Observations	582	582	582	582	582	582	582
Effect of divorce, excluding remarried mothers (excluding remarried mothers)							
divorce	-0.493**	-2.764**	-1.562	-1.875*	-1.203**	-2.813**	-2.259**
	(0.222)	(1.184)	(1.249)	(1.035)	(0.600)	(1.419)	(1.103)
divorce*mom's HGC		0.182*				0.178*	
		(0.094)				(0.105)	
divorce*dad's HGC			0.091			0.008	
			(0.103)			(0.114)	
divorce*log mom's earnings				0.170			0.148
				(0.122)			(0.126)
divorce*log dad's earnings					0.084		0.067
					(0.067)		(0.069)
Observations	534	534	534	534	534	534	534

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls reported in Table 4.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 21: Regressions on grade retention, by mother's remarriage status
NLSY79 Child & Young Adult born 1979-1988 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Effect of divorce (results from Table 5)							
divorce	0.027	0.093	0.139	0.290**	-0.008	0.141	0.247*
	(0.022)	(0.116)	(0.112)	(0.121)	(0.067)	(0.135)	(0.128)
divorce*mom's HGC		-0.005				-0.000	
		(0.008)				(0.009)	
divorce*dad's HGC			-0.009			-0.009	
			(0.009)			(0.009)	
divorce*log mom's earnings				-0.032**			-0.033**
				(0.014)			(0.014)
divorce*log dad's earnings					0.004		0.007
					(0.007)		(0.007)
Observations	1712	1712	1712	1712	1712	1712	1712
Effect of living with single mother (divorced and not remarried mothers vs. other mothers)							
single	0.040*	0.038	0.149	0.276**	0.015	0.103	0.243*
	(0.022)	(0.125)	(0.121)	(0.122)	(0.063)	(0.148)	(0.126)
single*mom's HGC		0.000				0.006	
		(0.009)				(0.010)	
single*dad's HGC			-0.009			-0.012	
			(0.009)			(0.010)	
single*log mom's earnings				-0.028**			-0.030**
				(0.014)			(0.015)
single*log dad's earnings					0.003		0.005
					(0.007)		(0.007)
Observations	1712	1712	1712	1712	1712	1712	1712
Effect of divorce, excluding remarried mothers (excluding remarried mothers)							
divorce	0.036	0.060	0.149	0.276**	0.003	0.120	0.235*
	(0.023)	(0.127)	(0.122)	(0.122)	(0.068)	(0.150)	(0.128)
divorce*mom's HGC		-0.002				0.004	
		(0.009)				(0.010)	
divorce*dad's HGC			-0.009			-0.011	
			(0.009)			(0.010)	
divorce*log mom's earnings				-0.029**			-0.031**
				(0.014)			(0.015)
divorce*log dad's earnings					0.004		0.007
					(0.008)		(0.008)
Observations	1619	1619	1619	1619	1619	1619	1619

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls reported in Table 5.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 22: Regressions on hourly wage, by mother's remarriage status

NLSY79 Child & Young Adult born 1979-1982 to married parents

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Effect of divorce (results from Table 7)							
divorce	1.617*	-0.946	-4.692*	-4.700*	1.110	-3.880	-4.713
	(0.852)	(2.838)	(2.621)	(2.744)	(2.667)	(2.835)	(3.744)
divorce*mom's HGC		0.203				-0.163	
		(0.233)				(0.284)	
divorce*dad's HGC			0.541**			0.648**	
			(0.221)			(0.298)	
divorce*log mom's earnings				0.772**			0.772**
				(0.357)			(0.356)
divorce*log dad's earnings					0.057		0.002
					(0.287)		(0.289)
Observations	175	175	175	175	175	175	175
Effect of living with single mother (divorced and not remarried mothers vs. other mothers)							
single	1.179	-1.345	-4.311	-3.972	-0.738	-3.778	-5.155
	(0.933)	(2.768)	(2.628)	(2.672)	(2.659)	(2.811)	(3.487)
single*mom's HGC		0.199				-0.103	
		(0.228)				(0.282)	
single*dad's HGC			0.470**			0.536*	
			(0.220)			(0.296)	
single*log mom's earnings				0.636*			0.599*
				(0.355)			(0.354)
single*log dad's earnings					0.225		0.174
					(0.276)		(0.272)
Observations	175	175	175	175	175	175	175
Effect of divorce, excluding remarried mothers (excluding remarried mothers)							
divorce	1.603*	-0.615	-4.393*	-3.218	1.273	-3.439	-3.180
	(0.925)	(2.901)	(2.593)	(2.672)	(2.807)	(2.896)	(3.744)
divorce*mom's HGC		0.174				-0.182	
		(0.236)				(0.280)	
divorce*dad's HGC			0.514**			0.631**	
			(0.217)			(0.283)	
divorce*log mom's earnings				0.593			0.593
				(0.359)			(0.359)
divorce*log dad's earnings					0.037		-0.005
					(0.293)		(0.296)
Observations	166	166	166	166	166	166	166

Notes: Standard errors clustered by the mother's ID are reported in the parentheses.
All regressions include the full set of controls reported in Table 7.
Hourly wage is reported for the primary job and is available only for those working in 2006.
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 23: Instrumental variable construction and preliminary results

Construction	Correlation with divorce dummy	First-stage R-sq.	First-stage F
=1, if child born in or after year of state adoption =0, if child born before year of state adoption missing, if birth state missing	-0.0055	0.3294	0.017382
=child's birth year - year of state adoption =0, if child born before year of state adoption missing, if birth state missing	-0.0229	0.3294	0.000297
=mom's birth year - year of state adoption =0, if mom born before year of state adoption missing, if birth state missing or if mother moved from birth to 1979	-0.0291	0.3308	1.87425
=2006 - year of state adoption =0, if state has no unilateral law by 2006 missing, if birth state missing	0.0032	0.3299	0.03491

Notes: 2SLS IV regressions are used here. 2SLS size of nominal 5% Wald test is 16.38 at the 10% level.
First-stage statistics are obtained from baseline IV regressions without interactions terms.

A Appendix: Questions in the HOME Cognitive Stimulation subscore

Type of Questions	Question Text	Age Range
Books and Reading	How often do you read stories to child?	3-5
	About how many childrens books does child have?	3-5
	About how many magazines does your family get regularly?	3-5
	Does child have the use of a CD player, tape deck, or tape recorder, or record player at home and at least 5 children's records or tapes?	3-5
	Do you or have you helped [child] with numbers?	3-5
	Do you (or someone else) help [child] with the alphabet?	3-5
	Do you (or someone else) help [child] with colors?	3-5
	Do you (or someone else) help [child] with shapes and sizes?	3-5
	How often do you read aloud to child?	6-9
	About how many books does child have?	6-14
	Does your family get a daily newspaper?	6-14
	How often does child read for enjoyment?	6-14
Activities and Entertainment	How often does a family member get a chance to take child on any kind of outing?	3-5
	How often has a family member taken or arranged to take child to any type of museum?	3-5
	Is there a musical instrument that child can use here at home?	6-14
	Does your family encourage child to start and keep doing hobbies?	6-14
	Does child get special lessons or belong to any organization that encourages activities such as sports, music, art, dance, drama, etc.?	6-14
	How often has a family member taken or arranged to take child to any type of museum?	6-14
	How often has a family member taken or arranged to take child to any type of musical or theatrical performance within the past year?	6-14
	When your family watches TV, do you or (father) discuss programs with him/her?	6-14
Home Environment	Interviewer: Interior of the home is dark or perceptually monotonous?	3-14
	Interviewer: All visible rooms of house/apartment are reasonably clean?	3-14
	Interviewer: All visible rooms of house/apartment are minimally cluttered?	3-14
	Interviewer: Building has no dangerous structural or health hazards within a school-agers range.	3-14

Author's own compilaton. Source: APPENDIX A. NLSY79 CHILD HOME-SF, NLSY79 Child & Young Adults User's Guide 2002

B Appendix: Analysis using the original NLSY79 data

Compared to the Child sample, the original NLSY79 data has several advantages. First, the long panel of surveys over more than two decades allows me to observe respondents' labor market outcomes and in particular wages in their 30s. This is a better indicator of an individual's long-term steady wage than wage levels taken in their early 20s. Second, unlike the Child sample, the original sample is nationally representative. There are also several weaknesses. First, because earnings and educational data for the noncustodial parents are only available when the child is 14, I restrict the sample to children with married parents at 14 and look at divorces taking place when the child is between 14 and 18. Given this small window, there are very few respondents whose parents divorce. Furthermore, these divorces do not represent all divorces occurring during the entire childhood and adolescence. Second, because the parents' occupations and not earnings levels at age 14 are available I impute wage levels of occupations using the 1970 Census of Population data on occupational earnings, and this is at best an approximation.

B.1 Sample construction

In 1988 the U.S. Department of Health and Human Services administered a special childhood retrospective supplement to the respondents of NLSY79. I use questions on respondent's living arrangement from birth to age 18 to construct a history of family structure. I restrict my sample to those living with both biological parents from birth to age 14 and observe changes in family structure from ages 14 to 18. Respondents living with only one biological parent in any year during this period are classified as living in a divorced family. I drop those who experienced the death of one biological parent during the period. So respondents in the divorced group stopped living with both biological parents because of parental divorce or separation. I use living arrangement instead of marital status of the parents because of two reasons. First, information on parents' marital status is not available in the data set. Second, as Hofferth (1982) points out, in cases where the mother is separated from the father, the child lives with only one parent but technically the marriage has not ended so the child would be coded as living with both parents. Because of this reason, most similar studies have used living arrangement (see for example Krein and Beller (1988), McLanahan and Bumpass (1988), Wu (1996), Lang and Zagorsky (2001)). Because it is very important to identify the living arrangement of respondents in the study, I eliminate those with missing information from 14 to 18. These include respondents missing from the 1988 interviews. These restrictions result in a sample size of 6570.

The main independent variable is a dummy variable for whether the respondent lived with both biological parents from 14 to 18. In addition, I control for the respondent's age, racial/ethnic group, AFQT score[42], number of siblings in 1979, a measure of home environment at age 14[43], and average total net family income (TNFI)[44]. To investigate the effect of parents' education and earnings on the impact of divorce, I control for the custodial and noncustodial parents' education measured by highest grade completed, and their earnings level when the respondent was 14[45]. Additionally, I control for respondent's location of residence with urban/rural and region variables[46].

One complication with the data is that the wages of the parents when the child was 14 are not available. Instead the parents' occupations are provided in the childhood supplement for when the child was 14. I impute the parents' occupational earnings using data from the 1970 Census of Population. Tables 227 and 228 give the occupational earnings of male and female civilian workers in 1969. To the extent that relative levels of occupational earnings did not shift significantly from 1969 to 1979, I can use these imputed wage earnings to proxy for parents' wages when the respondent was 14.

Table 24 presents weighted descriptive statistics for the two groups of respondents. Because I observe divorces only when the respondent was between 14 and 18, there are very few respondents in the divorced group (385). I present statistics on the independent variables in the first two panels. On average, children spending time in divorced families between ages 14 and 18 are more likely to be girls. This is consistent with the pattern observed in the Child sample as described in Section III[47]. They also have lower AFQT score on average, which indicates lower ability. Among family characteristics, parents of divorced families on average have less education. The fathers of this group have lower wage earnings when the respondents were 14. In the third panel I present statistics on the characteristics of (non)custodial parents for the divorced families. Since in my sample over 80% of the custodial parents are mothers, statistics on (non)custodial parents are closer to those on the mothers/fathers in the second panel.

The bottom panel presents the dependent variables. I look at two educational outcomes. First, I look at whether the respondent had college degree in 1989. I chose this year

[42]The Armed Force Qualifying Test score (AFQT) is a measure of ability. In 1980, the U.S. Departments of Defense and Military Services asked the NLSY to administer the test to its respondents.

[43]This is an average of three variables indicating whether the household had magazine, newspapers, and library card at age 14. Because I take in account possible missing responses, the variable indicates the probability that household had at least one of the three cultural and intellectual resources.

[44]The average is taken from age 14 to 21 or homeleaving.

[45]Because the majority of custodial parents (80.26%) are mothers in the divorce group, for the intact families I treat mother as custodial and father as noncustodial parents. An alternative is to compute the likelihood of a mother being custodial parent based on the family characteristic and assign roles of (non)custodial parents based on this. This is worth exploring further.

[46]The choice of timing for these two variables are based on the author's discretion. For educational outcome variables the location in 1979 are used. For labor market outcome variables the location in 1998 or 2006 are used, depending on the time the outcome variables are measured. Further analysis shows that changing time of location variables used does not change the sign or significance level of major explanatory variables

[47]See also Table 2

because the youngest respondent turned 24 in this year, and this allows enough time for the completion of college for the whole sample. On average, respondents in the divorced group are less likely to have had a college degree when they were at least 24. Second, I look at the highest grade completed at 28. By choosing this age I am allowing the respondents enough time for further studies after college. Again, the divorced respondents perform worse on this measure. On average, those in the intact-family group have about 0.5 years more education.

Next, I look at labor market outcomes. I look at measures of employment during a period and at a time, hourly wage, and labor force attachment. First, I look at whether the respondent was idle in at least one year during 1987 to 1998. The respondent is not idle in a year if she is either employed, or enrolled in school, or serving in the army, or prevented from work by health issues, or keeping house for that year. This is a better measure than employment status, because it takes into account situations such as going to school. Someone enrolled in the school is technically not in the labor force, and is therefore not captured by the (un)employment measure. With idleness I can avoid this issue. In addition, I look at employment at a point in the respondent's life. I construct a variable indicating whether the respondent is working during the week including October 1^{st} in the year that she turned 38. The choice of age depends on two factors. First, I want to allow enough time for the respondents to finish normal schooling. Second, I want to avoid period with big shifts in unemployment rate, because this disadvantages respondents who turned 38 in the year with very high unemployment rate.[48] Compared to the first outcome variable, this second measure takes employment status from a specific week and is thus more likely to be affected by random noise. Nevertheless, it supplements the first measure.

I also look at the respondent's hourly wage averaged over 1994-2006. In 1994 the youngest respondents turned 30. This is a better age to observe wage outcomes than the 20s, because most respondents would have reached their long-term steady wage by this time. To smooth out possible income shocks during certain years, I take the average of hourly wages for each person during this period. Lastly, I look at the number of weeks worked in a year averaged over 1993-2005. On average, the respondents in the intact-family group work about 2 more weeks per year.

B.2 Results

I use the same regression models discussed in Section IV. Results from the regressions are presented in tables 25-27.

[48]To find the best period I look at the national average unemployment rate in October from 1979 to 2004 and calculate the standard deviation for each consecutive 8-year period. The period from 1995 to 2002 has the smallest fluctuation in unemployment rates with a standard deviation of 0.663. This period corresponds to the respondents turning 38.

In Table 25 I look at results from the regressions on completing college in 1989. Column (1) presents result from the baseline regression and columns (2)-(5) includes one interaction term at a time. Divorce has negative impact on completing college, significant at the 1% level. On average, divorce reduces the likelihood of completing college by 1989 by 6.1 percentage points. However, there is no evidence for any mitigating effect. Table 26 reports the regression results on highest grade completed at age 28. This set of results tell a similar story. On average, divorce reduces the highest grade completed by 0.425 year, significant at the 1% level. Again, there is no evidence of any mitigating effect on the highest grade completed. Table 27 presents results on four labor market outcome measures. Divorce does not have statistically significant impact on any of the four variables. In results not included here, I also find no mitigating effect on any of these outcomes. This supports the findings on labor market outcomes from the NLSY79-Child data.

Although I do not identify any mitigating effect from this sample, it lends some support to the results from the NLSY79-Child sample. In particular, even though the labor market behaviors are observed when the respondents are in their 30s, I still do not find any impact of divorce. This indicates that the lack of results on labor market outcomes from the Child sample may not all because of the younger ages of the children.

Table 24: Weighted descriptive statistics for original NLSY79 sample

Variable	Intact families	Divorced families
CHILD CHARACTERISTICS		
Female	0.495	0.538
Age in 1979	17.786	17.490
White	0.842	0.840
AFQT	49.387	46.340
FAMILY CHARACTERISTICS		
Number of siblings in 1979	3.214	3.379
Home environment at 14[a]	0.729	0.784
Had sibling in 1993	0.972	0.971
Log average TNFI 14-21 before homeleaving[c]	8.936	8.819
Father's highest grade completed	12.140	12.052
Mother's highest grade completed	11.862	11.762
Log father's wage at 14 (imputed)[b]	8.607	7.833
Log mother's wage at 14 (imputed)[b]	4.008	4.682
Father worked at 14	0.958	0.882
Mother worked at 14	0.501	0.585
BROKEN FAMILY CHARACTERISTICS		
Noncustodial parent's highest grade completed	-	12.072
Custodial parent's highest grade completed	-	11.746
Log noncustodial parent's wage at 14 (imputed)[b]	-	6.681
Log custodial parent's wage at 14 (imputed)[b]	-	5.609
Noncustodial parent worked at 14	-	0.768
Custodial parent worked at 14	-	0.682
OUTCOME VARIABLE		
College degree in 1989	0.267	0.186
Highest grade completed at 28	13.524	12.966
Idle in at least one year during 1987-1998[d]	0.229	0.261
Log average hourly wage 1994-2006[e]	7.466	7.345
Average weeks worked 1993-2005	43.606	41.619
Worked during in a specific week at 38[f]	0.844	0.821
Sample size	6185	385

Note: Means are weighted using customized weightings available from NLSY website. Respondent is assigned a non-zero weight if he participated in any or all of the survey rounds from 1979 to 2006.

[a]Home environment at 14 is calculated by taking average of three measures of home environment at 14: whether magazine, newspaper or library card was available.

[b]Imputed using average occupational earnings data from 1970 Census of Population tables 227 and 228. Amounts in 1969 dollars.

[c]Total net family incomes from each year are converted to constant 1979 dollars.

[d]Variable indicates if respondent is neither working, nor enrolled in school, nor serving in the army, nor prevented from work by health issues.

[e]Wage value converted to constant 2006 dollars.

[f]Variable for whether respondent worked during the week that includes October 1st in year he turned 38(1995-2002).

Table 25: Probit regressions on completing college in 1989, NLSY79 sample

NLSY79 respondents living with both biological parents at 14

	(1)	(2)	(3)	(4)	(5)
divorce (d)	-0.061***	-0.078	-0.088	-0.066**	-0.050
	(0.021)	(0.090)	(0.058)	(0.033)	(0.050)
gender (d)	0.019	0.019	0.019	0.019	0.019
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
white (d)	-0.063***	-0.063***	-0.063***	-0.063***	-0.063***
	(0.017)	(0.017)	(0.017)	(0.017)	(0.017)
age79	-0.012***	-0.012***	-0.011***	-0.012***	-0.012***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
AFQT	0.005***	0.005***	0.005***	0.005***	0.005***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
environ14	0.020	0.020	0.020	0.020	0.019
	(0.026)	(0.026)	(0.026)	(0.026)	(0.026)
siblings79	-0.004	-0.004	-0.004	-0.004	-0.004
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
log average TNFI 14-21	0.002	0.002	0.002	0.001	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
urban79 (d)	-0.003	-0.003	-0.003	-0.003	-0.003
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
lived in south79 (d)	0.018	0.018	0.018	0.018	0.018
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
cus parent HGC	0.011***	0.011***	0.011***	0.011***	0.011***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
noncus parent HGC	0.013***	0.013***	0.013***	0.013***	0.013***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
log(cus parent wage @14)	0.001	0.001	0.001	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
log(noncus parent wage @14)	-0.002	-0.002	-0.002	-0.002	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
divorce*cus HGC		0.002			
		(0.014)			
divorce*noncus HGC			0.004		
			(0.010)		
divorce*log(cus wage@14)				0.002	
				(0.008)	
divorce*log(noncus wage@14)					-0.002
					(0.009)
Observations	3166	3166	3166	3166	3166

Notes: Marginal effects; Standard errors in parentheses

(d) for discrete change of dummy variable from 0 to 1

* $p < .10$, ** $p < .05$, *** $p < .01$

Table 26: Regressions on highest grade completed at 28, NLSY79 sample
NLSY79 respondents living with both biological parents at 14

	(1)	(2)	(3)	(4)	(5)
divorce	-0.425***	-0.696	-0.773	-0.296	-0.352
	(0.162)	(0.689)	(0.578)	(0.259)	(0.356)
gender	0.231***	0.231***	0.231***	0.232***	0.231***
	(0.063)	(0.063)	(0.063)	(0.063)	(0.063)
white	-0.900***	-0.899***	-0.899***	-0.901***	-0.901***
	(0.079)	(0.079)	(0.079)	(0.079)	(0.079)
age79	-0.073***	-0.073***	-0.073***	-0.073***	-0.073***
	(0.016)	(0.016)	(0.016)	(0.016)	(0.016)
AFQT	0.040***	0.040***	0.040***	0.040***	0.040***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
environ14	0.412***	0.411***	0.411***	0.413***	0.411***
	(0.120)	(0.120)	(0.120)	(0.120)	(0.120)
siblings79	-0.053***	-0.053***	-0.053***	-0.053***	-0.053***
	(0.014)	(0.014)	(0.014)	(0.014)	(0.014)
log average TNFI 14-21	-0.005	-0.005	-0.005	-0.005	-0.005
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
urban79	0.028	0.030	0.030	0.026	0.028
	(0.081)	(0.081)	(0.081)	(0.081)	(0.081)
lived in south79	0.208***	0.208***	0.208***	0.209***	0.208***
	(0.070)	(0.070)	(0.070)	(0.070)	(0.070)
cus parent HGC	0.117***	0.116***	0.117***	0.117***	0.117***
	(0.014)	(0.015)	(0.014)	(0.014)	(0.014)
noncus parent HGC	0.073***	0.073***	0.072***	0.073***	0.073***
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
log(cus parent wage @14)	0.002	0.002	0.002	0.003	0.002
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
log(noncus parent wage @14)	-0.016	-0.016	-0.017	-0.017	-0.015
	(0.013)	(0.013)	(0.013)	(0.013)	(0.014)
divorce*cus HGC		0.024			
		(0.058)			
divorce*noncus HGC			0.030		
			(0.047)		
divorce*log(cus wage@14)				-0.025	
				(0.039)	
divorce*log(noncus wage@14)					-0.011
					(0.045)
Constant	11.105***	11.110***	11.114***	11.099***	11.101***
	(0.342)	(0.342)	(0.343)	(0.342)	(0.343)
Observations	2996	2996	2996	2996	2996

Notes: Standard errors in parentheses
* $p < .10$, ** $p < .05$, *** $p < .01$

Table 27: Regressions on labor market outcomes, NLSY79 sample
NLSY79 respondents living with both biological parents at 14

	(1) idle	(2) lawage	(3) wkwork	(4) work79_38
divorce (d)	0.030	-0.033	0.178	-0.020
	(0.047)	(0.057)	(1.337)	(0.038)
gender (d)	0.028	-0.282***	-6.284***	-0.128***
	(0.017)	(0.022)	(0.527)	(0.014)
white (d)	-0.049**	-0.088***	0.122	0.005
	(0.022)	(0.028)	(0.673)	(0.018)
age79	-0.006	-0.004	0.246*	0.000
	(0.004)	(0.006)	(0.133)	(0.004)
AFQT	-0.003***	0.007***	0.087***	0.002***
	(0.000)	(0.000)	(0.011)	(0.000)
environ14	0.018	0.102**	0.072	0.004
	(0.032)	(0.043)	(1.012)	(0.026)
siblings79	0.008**	-0.006	-0.294**	-0.004
	(0.004)	(0.005)	(0.122)	(0.003)
log average TNFI 14-21	-0.001	0.003	0.008	0.001
	(0.003)	(0.004)	(0.099)	(0.003)
cus parent HGC	-0.003	0.011**	0.041	-0.002
	(0.004)	(0.005)	(0.122)	(0.003)
noncus parent HGC	-0.001	0.011***	-0.215**	-0.005*
	(0.003)	(0.004)	(0.098)	(0.003)
log(cus parent wage @14)	-0.003	-0.003	0.099	0.003*
	(0.002)	(0.003)	(0.067)	(0.002)
log(noncus parent wage @14)	-0.009**	0.014***	0.271**	0.005
	(0.004)	(0.005)	(0.118)	(0.003)
Observations	2668	2312	2392	2539

Notes: Standard errors in parentheses
idle and *work79_38* used probit model with marginal effect.
idle = 1 if not working or enrolled in school in at least one year during 1987-1998.
lawage is the log average hourly wage over 1994-2006 converted to 2006 dollars.
wkwork measures the average weeks worked during 1993-2005.
work79_38 indicates working during the week of October 1st in year he turned 38.
(d) for discrete change of dummy variable from 0 to 1
* $p < .10$, ** $p < .05$, *** $p < .01$