Family Structure and Parental Investments:
Economic Resources, Commitment, and Inequalities in Financial Investments in Children

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Abstract

Family structure in the United States is undergoing important change and continued stratification with increases in single parenting and cohabiting unions. These transformations in family demography have important implications for social mobility as theory and empirical research suggest family structure plays an important causal role in shaping children's life chances, in part through the differential financial investments that parents make for their children's development. Drawing from the 2003-2017 Consumer Expenditure Surveys, we examine differences by family structure in parental financial investments in children's childcare, schooling, and enrichment activities. We compare differences between married, cohabiting, and single parents and we test two candidate pathways that might account for associations between family structure and financial investment in children: disparities in economic resources and differences in long-term commitment. Single and cohabiting parents make fewer parental investments than married parents. Income explains the entire difference for singles but less than half the gap for cohabiters, suggesting differences in commitment/preferences. Our work illustrates the heterogeneity in the extent and causes of familial inequalities in parental investments in children, which in turn has important implications for America's opportunity structure and future increasing inequality in the preparation of America's future labor force.

Introduction

Children's life chances are stratified by the marital status of their parents. Compared with children who grow up in cohabiting or single-parent families, those who grow up with stable married parents appear to fare better in terms of health and behavior in childhood (McLanahan and Lee, 2015), achievement in adolescence and young adulthood (McLanahan, Tach, and Schneider, 2013), and attainment by early mid-life (Bloome, 2017). While selection remains an important concern, there is now a significant body of research that finds causal inter-generational effects of family structure (McLanahan, Tach, and Schneider, 2013).

However, Americans are now marrying later and less and nearly 40% of births are non-marital (Cancian and Haskins, 2014). Family structure is also increasingly stratified in the United States (McLanahan, 2004). More educated men and women are now significantly more likely to marry than their less educated counter-parts (Schneider, Harknett, and Stimpson, 2018). Similarly, non-marital births are also increasingly stratified by maternal education and race/ethnicity (Wu, 2017; Gibson-Davis and Rackin, 2015). Combined, between 1980 and 2010, the share of children living with single or cohabiting parents has increased significantly for those with less educated mothers, but has remained remarkably stable and at relatively low levels for those whose mothers have a college degree (Sykes and Williams, 2013).

Theory and empirical research in child development suggests a number of causal pathways by which family structure operates on child outcomes including through effects on parenting time and quality as well as through effects on parental financial investments in enrichment and schooling (Bronfenbrenner, 1979; Conger and Donnellan, 2007). Empirical and theoretical work also explores what factors might account for variation by family-structure in these causal pathways. One likely explanation is economic (Sigle-Rushton and McLanahan, 2004). Single parents and, to a somewhat lesser extent, cohabiting couples have many fewer economic resources than married couple families and may experience more economic instability as well (Ribar, 2015). This economic differential may in turn shape parenting

quality and time by increasing stress and strain and may also shape the ability of parents to make financial investments in formal childcare, schooling, and enrichment activities. Another explanation posits that marriage itself fosters greater investment in children through such mechanisms as parenting time and financial investments in children by providing for a commitment that fosters long-term planning (Lundberg and Pollak, 2015; Howard and Reeves, 2014) – what Richard Reeves (2014) has called "high investment parenting" marriages.

While a relatively large empirical literature examines differences in time spent with children by family structure (Sandberg and Hofferth, 2001; Bianchi et al., 2006; Kalil et al., 2013; Altintas, 2016; Pepin et al., 2018), there is little prior research that describes differences in parental financial investment in children by family structure and even less that shows how such disparities may be mediated by differences in economic resources or in parental preferences.

Using data from the Consumer Expenditures Survey (CEX) from 2003-2017, we first examine differences by family structure in parental financial investments in children's childcare, schooling, and enrichment activities, contrasting single parents, cohabiters, and married parents. We next investigate the roles of economic disparities and of commitment differences in accounting for these family-structure divides. First, we introduce family income in our models as a mediator in order to test the economic pathway. Second, if marriage matters for its commitment value, then we might expect higher financial investments in children for married versus cohabiting couples, conditional on income. We also examine associations between the share of expenditures and of income spent on financial investments in children and family structure and interactions between family structure and income group on financial investments in children. We further examine differences for families whose family structure remain unchanged for an entire year, in subsamples by race/ethnicity, and when disaggregating the type of parental financial investment.

Parental financial investments in children are stratified by family structure. After controlling for a number of other sociodemographic confounders, we find that married parents

spend \$80 more per child per quarter than cohabiters and \$69 more than single parents. Family economic resources play an important explanatory role. Household income mediates more than 100% of the association with single parenthood – that is, controlling for income, single parents spend *more* on parental financial investments than married households. But household income explains only about 40% of the association with cohabitation, which may trace to differences in long-term planning and commitment between married and cohabiting parents.

In all, our work illustrates the heterogenous relationship between non-marital family structure and parental financial investments as well as the heterogenous causes of these inequalities. Furthermore, this work has important forward-looking implications. In the coming decades, these children will become America's prime workforce. If certain families are increasingly able to transmit their advantages to children while others are less likely to do so, that bodes poorly for an open opportunity structure and suggests increasing inequality in the preparation of America's future labor force.

Parental Investment in Children

Parents influence the development and attainment of their children through multiple pathways including the extent, content, and quality of the time they spend with their children and through the financial investments they make in children (Sigle-Rushton and McLanahan, 2004; Amato, 2005; Brown, 2010; Waldfogel et al., 2010; Kaushal et al., 2011).

Such financial outlays include investments in young children's childcare, in older children's schooling, and in children's activities and lessons. These investments shape the quality of out-of home care and schooling, access to the "shadow educational system," and home environment in terms of the quantity and quality of books and educational toys and games. A large body of research documents how parenting practices have important effects on child well-being and later life attainment. This literature finds that more involved parenting, including providing educational materials, enrolling students in activities, and spending

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time with children, is positively related to children's test scores and cognitive development (Bodovski and Farkas 2008; Carneiro and Rodriguez 2009; Del Boca, Monfardini, and Nicoletti 2012; Greeman, Bodovski, and Reed 2011). This is also consistent with work showing that class gaps in achievement widen most during the summer months when children are out of school (Alexander, Entwisle, and Olson 2007; Downey et al. 2004).

While the focus of research on inequalities in parental investment has been on class, family structure is an important axis of inequality and children who grow up outside of married couple households and with familial instability appear to fare worse in terms of early life achievement, attainment, and social mobility. Parental time and economic resources are two fundamental inputs into child development (Kaushal et al., 2011). Inequalities in parental financial investments by family structure could contribute to these disparate outcomes.

Family Structure and Financial Investment in Children: Conceptual Model

Scholars have distilled two key underlying causal factors that could explain why family structure shapes parental practices, such as financial investment, that ultimately affect achievement and attainment (Brown, 2010). First, stark differences in economic resources by family structure could account for differences in financial investment in children by family structure. Second, net of economic differences, marriage could increase investment in children by providing for a commitment that fosters long-term planning. We describe the theoretical rationale and empirical basis for these two proposed mechanisms below.

Family Structure, Economic Resources, and Parental Financial Investment

Compared with married couple households, single-parent households have much lower levels of income and higher rates of poverty (Garfinkel and McLanahan, 1986; McLanahan and Sandefur, 1994; Carlson and Danziger, 1999; Thomas and Sawhill, 2002). There is also a gap in the economic standing of cohabiting versus married couple households (Brown et al.,

2016), however accounting for cohabiting partner resources narrows this gap and it is smaller than the gap between single and married parent households (Manning and Brown, 2006; Kali and Ryan, 2010). Still, these differences remain stark. In 2011, 37% of children in single, unmarried families fell below the supplemental poverty line compared to 26% of those in cohabiting households and 11% of those in married couple households (Wimer et al., 2016).

These stark economic inequalities are likely at once the product of selection into marriage, household composition, negative consequences of dissolution, and perhaps, marriage itself. In terms of selection, both men and women with higher earnings (Sweeney, 2002; McClendon et al., 2014), full time employment (Oppenheimer et al., 1997; Shafer and James, 2013), less precarious jobs (Schneider, Harknett, and Stimpson, 2018), less debt (Addo, 2014), and more assets (Schneider, 2011) are more likely to marry than their less well-off peers, in keeping with a cultural orientation towards marriage that sees the institution as a capstone (Cherlin, 2005) or a luxury (Furstenberg, 2003) reserved for the economically successful. Notably, while these economic resources are strong predictors of marriage, they do not generally predict cohabitation (Carlson et al., 2004; Manning et al., 2014) into which there is much less selection on economic characteristics. Second, the simple fact of co-residence, in cohabitation or marriage, may also improve households' economic standing by allowing two earners to realize economies of scale that are not available to single parents (Becker, 1981; Manning and Brown, 2006). Third, women appear to suffer economically as a result of divorce (Holden and Smock, 1991; Smock et al., 1999; Ananat and Michaels, 2008) and as the result of dissolution of a cohabiting union (Avellar and Smock, 2005; Tach and Eads, 2015). Finally, marriage itself may have a causal effect on family economic resources, beyond that realized through economies of scale. Research that uses child gender as an instrument for marriage reports to identify a causal effect of marriage on household economic resources (Depew and Price, 2018). However, while the principal mechanism offered for such effects is a male marital wage premium (Waite and Gallagher, 2000), recent research casts considerable doubt that such premia are actually causal (Ludwig and Bruderl, 2018).

Economic resources are then stratified by family structure and such resources also powerfully shape parental financial investments in children (Kaushal et al. 2011; Kornrich and Furstenberg 2013). For example, in 2014, parents in the top decile of earners spent nearly $2,400 per year on financial investments in children as compared to just under $800 per year for those in the bottom 75 percent of earners (Schneider, Hastings, and LaBriola 2018). Children from higher-income families are also much more likely to have access to private tutors than are lower-income children (Buchmann, Condron, and Roscigno 2010), one manifestation of the strong link between income and access to the "shadow educational system" (Bray 1999; Park et al. 2016).

Given the strong links between family structure and economic resources and the positive association between economic resources and financial investment in children, we would expect then that economic differences by family structure would play an important role in explaining differences by family structure in parental financial investments in children. Indeed, compared to parenting time, for instance, financial investments may be especially likely to be driven by economic factors. Moreover, given that the economic inequalities between single and married couple households are larger than those between cohabiting and married couple households, we would expect that accounting for economic resources would explain more of the difference between single and married households.

Family Structure, Commitment/Preferences, and Parental Financial Investment

Scholars also suggest that married parents may differ from cohabiters in terms of their degree of commitment to the relationship and to the "project" of joint concerted investment in children (Lundberg, Pollak, and Stearns, 2016). This argument is in some ways subtle. It first proposes that college-educated men and women have a preference for making substantial and sustained investments of time and money in children, or what Annette Lareau has termed "concerted cultivation" (Lareau, 2003). There is strong evidence for this contention. More educated parents spend more time in developmental activities (Kalil et al., 2012) and, even

controlling for income, more highly educated parents spend more money and a greater share of income on financial investments in children (Schneider, Hastings, and LaBriola, 2018).

This argument then proposes that these college-educated men and women use marriage as a commitment device to realize their preferences for making long-term and resource-intensive investments in children. Lundberg and Pollak (2015) articulate this perspective concisely, arguing that "marriage is the commitment mechanism for the joint project of childrearing, and this implies that marriage is more valuable for parents whose resources and expectations lead them to invest intensely in their children's human capital" (p. 45). An interesting feature of this argument is that it posits that marriage plays a causal role, but that the effect of marriage is likely highly heterogenous and may be confined to those who select into marriage. One implication is that reducing marriage among the affluent might reduce child wellbeing, but that increasing marriage among the disadvantaged might have no effects, at least through this pathway.

In this view, cohabitation functions very differently. In line with the idea that cohabitation remains an "incomplete institution" (Nock, 1995), that marriage may itself set expectations for parents regarding their responsibilities towards children (Hofferth, 2006), and in recognition of the reality that cohabitations remain relatively short duration and much more likely to dissolve than marriages (Kennedy and Ruggles, 2013), cohabiting parents are not as committed to a long-term relationship in the same way that married parents are and so behave very differently with respect to parental investment. While parents certainly make long-term relational and emotional commitments to their children irrespective of co-residential status (Edin and Nelson, 2013), empirical research clearly shows a stark divide in financial investments by co-residential status (Carlson and Berger, 2013).

While single parents have the lowest levels of economic resources, the commitment pathway may not operate in parallel. Instead, single parents, especially stably single parents, may be more readily able to make long term commitments to investment in children than cohabitors, in part because they may avoid some of the hazards of conflictual bargaining

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(Lundberg, Pollack, and Wales, 1997). The idea that stable single parenthood may be less detrimental to child wellbeing than cohabitation is confirmed in empirical research which shows smaller gaps in child wellbeing between those growing up with single parents versus married parents than between cohabiters versus married parents, after adjusting for economic resources (Wu and Martinson, 1993; Brown, 2004; though see Bzostek and Berger, 2017).

A fairly clear implication of this argument is that compared with cohabitors, married parents can be expected to make larger financial investments in children and that this gap should persist after adjusting for differences in household income. Similarly, we would expect that at a given level of income, married couples would spend more on financial investments in children than cohabiters and would spend a larger share of their incomes on financial investment in children.

Moderation by Race/Ethnicity

On average, we expect that single and cohabiting families will make smaller financial investments in children due to both resource constrains and differences in commitment. However, these effects may also vary depending on the race/ethnicity of the parent. In particular, differences in family economic resources are less pronounced between married and cohabiting Hispanic or Black, non-Hispanic parents than they are between white, non-Hispanic parents (Manning and Brown, 2006) and the associations between family structure and child wellbeing appear most pronounced for white, non-Hispanic children (Lee and McLanahan, 2015; Fomby and Cherlin, 2007; Wu and Thomson, 2001; Fomby et al., 2010). As such, we might expect that differences in financial investment in children between married and cohabiting parents would be most pronounced for white, non-Hispanic parents versus Black, non-Hispanic or Hispanic parents.

Family Structure and Financial Investment in Children: Prior Empirical Research

Despite financial investments in children being a key hypothesized pathway by which family structure affects child development and attainment, little existing empirical research describes differences by family structure in parental financial investments in children. The clearest estimates of differences by family structure in financial investments in children are provided by Ziol-Guest et al. (2004) who find large and significant gaps between married, single never-married, and divorced parents in terms of expenditures on books, publications and toys, recreation, and education. However, while useful, these estimates are based on CEX data from 1980-1998 which both dates them and, due to the construction of the CEX in those years, does not permit a comparison with cohabiting couples.

The Ziol-Guest et al. (2004) estimates are particularly valuable because they do not initially adjust for household economic resources, which, as discussed above, are endogenous to family structure. Indeed, prior research clearly shows that gaps in economic resources by family structure play an important role in accounting for differences by family structure in child outcomes (McLanahan and Sandefur, 1994; Amato, 2005; Hofferth, 2006; Brown, 2010; Waldfogel et al., 2010). For instance, using sibling fixed effects models and data from NLSY and PSID, Ginther and Pollack (2004) show that strong associations between exposure to single parenthood and educational achievement and attainment are significantly attenuated by adjusting for family income. Carlson and Corcoran (2001) similarly show that differences by family structure in children's behavioral problems and reading and math scores are largely mediated by differences in family income. These approaches treat income as endogenous to family structure and assess the extent to which resources mediate the association.

However, Ziol-Guest et al. (2004) aside, all of the other estimates of the association between family structure and parental financial investment that we are aware of control for this endogenous pathway from the outset (Bianchi et al., 2004; Kaushal et al., 2011; and Kornrich and Furstenberg, 2013). However, each of these papers adjusts for family

income in different ways and uses different subsets of the CEX data. For instance, Bianchi et al (2004) use CEX data from two years (1988 and 1998) and find that single mother families spent more on financial investments in children than married couples, controlling for both financial assets and the consumer unit's rank in the total expenditures distribution. Kaushal et al. (2011) also use CEX data, from 1997-2006, and report that spending on children's enrichment as a share of total expenditures is not strongly patterned by family structure, though they do not report the direction of any difference. In contrast, Kornrich and Furstenberg (2013) use eight years of CEX data drawn from the period 1972-2007 and find that while single-mothers spent more than two-parent families on investment in children in the early 1970s, the relationship then reversed and single mothers spent significantly less from the 1980s through mid-2000s, adjusting for household income. Finally, Ziol-Guest et al. (2004) find that adjusting for household income attenuates differences between married vs. single or divorced in spending on books and recreation, but that significant differences remain in spending on publications and toys and spending on education.

A second limitation of prior work is that none of these existing estimates compare cohabiting couples against single parents and married couples. Instead, this prior research compares all two-parent families, whether married or cohabiting, against single parent families. This approach, which is likely in part due to the data limitations in early years of the CEX, both likely suppresses family structure differences and misses the theoretical leverage that comes from comparing married and cohabiting couples.

Data

We examine the relationship between family structure and parental investments in children by analyzing data from the Consumer Expenditure Survey (CEX) from 2003-2017. The CEX provides detailed information on the expenditures, income, and demographics of a large nationally representative sample of households in the U.S. We use data from the Interview survey, which is designed to obtain data on larger and reoccurring expenditures that respon-

dents can recall for several months. Each household is interviewed once per quarter for four consecutive quarters.[1]

A household head is one of the members of the household who "owns or rents" the home. This person becomes the reference person, and the CEX collects a complete list of household members and each member's relationship to the reference person. We start with 2003 because this was the year the CEX first permitted "unmarried partner" as one of the relations to the reference person. We end with 2017 because it is the most recent year that microdata from the CEX are available. All expenditures and income data are adjusted to 2017 real dollars using the CPI-U-RS series.

We limit our sample to households with resident children of the reference person (both biological or step), where at least one parent is over the age of 24 (to allow for normative age completion of schooling) and neither parent over the age of 65 (to exclude those who are retired). A small number of same-sex households appear in the data (0.4%) and we include them in our analysis, but the results are the same without them.

We organize the data into a household-quarter structure, since each household could be present between 1 and 4 times. This permits us to analyze expenditures for children from 37,604 households in 107,793 household-quarters. In additional analyses, we limit our results to only stable households who appear in all four quarters and whose families maintain the same structure (married, cohabiting, or single) throughout. For these analyses we examine 16,419 households in 65,676 household-quarters.

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[1]While we refer to the unit of analysis as a household, technically it is a "Consumer Unit" which is defined as "(1) All members of a particular household who are related by blood, marriage, adoption, or other legal arrangements. (2) A person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) Two or more persons living together who use their incomes to make joint expenditure decisions. Financial independence is determined by spending behavior with regard to the three major expense categories: housing, food, and other living expenses. To be considered financially independent, the respondent must provide at least two of the three major expenditure categories, either entirely or in part." Source: https://www.bls.gov/cex/csxfaqs.htm

Outcome: Parental investments in Children

Consistent with previous work, we define parental investments as the total sum of expenditures on childcare (e.g., costs for babysitting, nannies, day care centers, and nursery schools), schooling (e.g., student room and board; school meals; books, supplies, and equipment for school; tuition; and any other Pre-K through 12th grade school-related expenses), and enrichment activities (e.g, fees for recreational lessons, instruction, and other extra-curriculars), and we divide this by the number children in the household between the ages of 0 and 18 to generate a per child expenditure measure as our outcome variable of interest (Schneider, Hastings, and LaBriola, 2018; Kornrich and Furstenberg, 2013; Kornrich, 2016).[2] To avoid unduly influential outliers, for each expenditure category we drop the top 1% of expenditures (among those with any expenditures in that category). In additional analyses we also examine each expenditure type separately. Given that the distribution of parental expenditures is skewed right, we also analyzed the natural log of parental expenditures and found substantively identical results, which are presented in the Appendix.

Key predictors

Family Structure: Our key independent variable is the household's family structure. We code households as "married" if there is spouse (husband/wife) of the reference person living in the home.[3] We code households as "cohabiting" if there is an unmarried partner of the reference person in the home. And we code households as "single" if there is neither a spouse nor an unmarried partner in the home. Research using a similar survey instrument finds that a small percentage of households may incorrectly report an unmarried partner as an "unrelated person" living in the home (Kennedy and Fitch, 2012). In that case, those households would be incorrectly coded as single instead of cohabiting. However, analyses that exclude

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[2]Our analyses control for the number of children in the household. Using the total expenses per household produced substantively the same results.

[3]This coding excludes a small number (1.5%) of households where the reference is reported as married but no partner is present in the household. The CEX measure of household income only counts the wages of those listed in the household roster. However, analyses keeping those respondents and coding them as "married" yields substantively identical results

all households with an unrelated person in the home yields substantively identical results.[4]

Income: Our second key independent variable is total household income after taxes and transfers. This measures includes all sources of income and welfare/public assistance and excludes taxes. Before 2013 this measure relied on the respondent's self-report of the amount of taxes paid. For 2013–2017, federal and state taxes are estimated using NBER's TAXSIM model (Paulin and Hawk, 2015). The results using before-tax income are substantively identical.

The CEX provides imputed income data to account for non-response, which we utilize.[5] In our main analysis, we use household income (measured in thousands of dollars). For robustness, we also considered logged dollars and income quintiles, and the results were substantively similar.

There is some concern that cohabiting families may be more likely to have income reporting errors than other types of families. For example, because of the structure of the tax code, cohabiting mothers file their taxes individually, which overlooks partner's financial contributions to the household but can increase tax transfers such as the EITC (Acs and Magg, 2005; Carasso and Steurle, 2005; Garfinkel and Zilanawa, 2015). However, the CEX first has the respondent create a household roster (which includes unmarried partners), and then asks about the earnings of each member of the household individually.[6]

Race/Ethnicity: In our main models, we control for race/ethnicity with categories for white, Non-Hispanic; Black, non-Hispanic; Other race, non-Hispanic; and Hispanic respon-

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[4]We also separated never-married vs divorced cohabiting and single parents and found similar results for both groups.

[5]For complete details on the imputation, see "User's Guide to Income Imputation in the CE" (https://www.bls.gov/cex/csxguide.pdf). This imputation procedure began with the 2004 data, so for 2003 we use only non-imputed data. Dropping 2003 from our analysis does not substantively change the results.

[6]The results of our analysis suggest cohabiting households spend less—after adjusting for income—on children than both married and single-parent households. If cohabiting families systematically underreport their income, then this would suggest cohabiting households spend *even less* relative to their income, thus further increasing this aspect of the family structure gap in parental investments.

dents. We also test for heterogeneity in the association between family structure and parental investment in children by respondents's (the parent's) race/ethnicity, comparing white, Non-Hispanic; Black, non-Hispanic; and Hispanic respondents. We tested multiple ways of coding race/ethnicity, as mothers and fathers may have different races/ethnicities. First, we code race/ethnicity based on the father's race/ethnicity, except for single-parent households where we use the race/ethnicity of the one parent present. This is the coding we present in the analysis. For robustness, second, we also coded race/ethnicity based on the mother's race/ethnicity, except for single-parent households where we use the race/ethnicity of the one parent present. And, third, we created non-mutually exclusive racial categories where households were coded for each race/ethnicity category if either parent was of that race/ethnicity (e.g., a household would be Hispanic if either parent was Hispanic; Black, non-Hispanic if either parent was Black, non-Hispanic, etc). Results using these two alternate codings are in the Appendix, but substantively the results were the same.

Additional Controls: In addition to the variables described above, our analysis includes measures of a number of potential confounders. We measure parental education as less than high school, high school but no bachelor's degree, and bachelors degree or higher. For married and cohabiting households, we used the highest education between the two partners, but using the lowest education between the two yielded substantively identical results. For robustness, we also tested models separately by education and report those in the Appendix. We also control for the age and age-squared of the oldest parent. Finally, in all our models we control for the number of children in the household (as our dependent variables is a per-child measure of expenditures).

In a second step we control for the presence of grandparents in the household. If multi-generational co-residence is more common in single and cohabiting families as opposed to married couple families (Dunifon et al., 2014), then financial investments might be lower in these families not because of resource differences or commitment differences but rather

because co-resident grandparents provide goods (such as childcare or enrichment) that would otherwise be purchased (Cherlin, 2010).

Descriptives of all variables in the analysis are presented in Table 1.

Analytical Strategy

First, we show the bivariate relationships between parental expenditures and family structure, both graphically over time and in the pooled 2003-2017 CEX. Then, we show the relationship when controlling for education, race/ethnicity, age, number of children, and including month and year fixed effects. Month fixed effects account for seasonal changes in parental investments (e.g., spending patterns in the summer may be very different than in the fall) and year fixed effects net out any overall changes in spending over time, allowing the focus to be on the gap between different family structures (excluding month and year fixed effects yields substantively identical results). Next, we also control for grandparental co-residence. This model produces our best estimate of the conditional relationship between family structure and parental investments. Formally, this model can be written as:

$$ParentalInvestments = \beta_0 + \beta_1 Cohabiting + \beta_2 Single + \beta_3 GrandparentsPresent$$
$$+ \boldsymbol{\beta_4 HouseholdControls} + \boldsymbol{\mu_{month}} + \boldsymbol{\mu_{year}} + \epsilon \tag{1}$$

where β_1 and β_2 represent the gap between each family structure type and "Married," which is the reference category for family structure. The models employ the sampling weights provided by the CEX and adjust the standard errors for clustering by households (since households can appear up to 4 times in the data). We also conducted between-effects models (i.e., using the means for all observations of each household) and random-effects models and found substantively similar results, which are presented in the Appendix. Family fixed-effects models – based on changes to household structure between quarters during the year – are not appropriate for two reasons: first, parental investments may precede (or in some cases, follow) the child's activity associated with that spending (e.g., payments for private school or

summer camp). Second, only households who underwent a change in family structure during the would contribute to the estimate, likely conflating the effects of household instability with family structure (below we describe an alternative model focusing only on stable households).

To test whether economic resources are a key pathway in explaining the family-structure gap in parental investments, we next add post-tax and transfer income to our model. If economic resources are key to these differences by family structure, then the family structure coefficients should be substantially attenuated once income is accounted for. After controlling for income, we interpret any remaining association between family structure, especially a cohabiting union, and parental investments in children as indirect evidence for the commitment pathway.

As a second test of the role of resources in explaining effect of family structure, we also present a model of the share of total expenditures directed towards financial investments in children. Using expenditures, rather than income, is thought to better capture permanent income and is likely better measured in the CEX (e.g., Kaushal et al., 2011). We also analyzed the share of income directed towards financial investments and found substantively similar results.

We further narrow our analysis by focusing on the sub-sample of CEX households who do not experience a change in households composition over the four observed quarters. For this subset of households, we are better able to discern any forward-looking effects of commitment – expected to be lower in cohabiting households – from effects of recent instability. Finally, we disaggregate the key analyses and show results separately by race/ethnicity and expenditure type (we also note differences – or the lack thereof – in the results by education, which we are included in the Appendix).

Results

Descriptive Results

We begin by showing in Figure 1 the over time trends in parental expenditures by family structure. We observe large gaps between married households and both single-parent and cohabiting households. The trends suggest a modest increase in this gap, but far less than the size of the gap itself. Despite cohabiting parents having potentially two earners, we observe little difference between those cohabiters and single parents in their parental investments.

Table 2 compares single, cohabiting, and married parents in terms of their parental expenditures, economic resources, grandparental presence, and demographic characteristics. We see the expected demographic and economic differences: on average, married parents have higher post-tax and transfer incomes ($99,900), are less likely to have grandparents living in the home (3.9%), are more likely to have a bachelors degree (49%), are more often white (67%), and are slightly older and have more children than do cohabiting and single parent families. Cohabiting parents have higher incomes ($65,600), are more likely to have completed high school, are more likely Hispanic (24%), and have slightly more children than single parents. Single parents have the lowest incomes ($44,600), are most likely to have grandparents living with them (6.5%), are most likely to be Black, non-Hispanic (30%), and have the fewest children on average. In the Appendix Table A1, we also show nearly identical descriptives just for stable families (their incomes are slightly higher). Given these substantial differences by family structure, we next turn to the regression models to analyze the effect of family structure on parental financial investment in children.

Regression Results

In Table 3 we present the main regression results. Model 1 shows the gap in the pooled data, without controlling for potential confounders. On average, married households spend an average of $176 more per child in each quarter on parental investments than children in single parents households, and $181 more than cohabiting households.

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Model 2 controls for a number of potential confounders that are associated with both family structure and parental investment. After adding controls for education, race/ethnicity, and age, the family structure effects shrink by more than half, but they remain substantial and statistically significant. In Model 3, we further adjust for grandparental co-presence in the household. Grandparents do have a negative effect on parental expenditures. This could be for advantageous (e.g., grandparents providing unpaid childcare) or disadvantageous reasons (e.g., taking care of elderly adults might drawing away financial resources from children). Regardless, adding grandparents to the model has almost no effect on the family structure coefficients themselves. Across these models, we see that cohabiting and single parent households make significantly smaller financial investments in children than married couple households.

We next test the first of our proposed mediating pathways – economic resources. Model 4 adds a control for income. If lower incomes are a key part of explaining why single and cohabiting households spend less on their children, then the coefficients for cohabiting and single parent households should decrease once income is controlled for. Indeed, in this model, after controlling for income, the single parent coefficient is actually positive. This implies that if incomes (and other controlled for factors) were equal, single parents household would actually spend *more* than married households. In contrast, the cohabiting parents coefficient remans negative, although it is reduced in magnitude by about 40%. Net of income differences, cohabiting parents spend the least on parental investments – significantly less than married and single parent households. We further confirmed (using the -khb- package in Stata) that the changes in each family structure coefficient between Models 3 and 4 when income is added is statistically – in addition to substantively – significant (p $<$.05).[7]

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[7]Two technical notes regarding the mediating effects of income are in order. First, the size of the moderating effect of income depends on which controls are included in the model, because income is correlated with the other independent variables. More generally, the sequence in which covariates are added in nested models matters for how they are interpreted (Gelbach 2016). Our interest is in the mediating effect of income. As an additional check, we used a conditional decomposition technique provided by Gelbach (2016) and implemented in Stata with the -b1x2- package to determine how much of the changes in the family structure coefficients from Model 1 to Model 4 are explained by income. Between Model 1 and Model 4, the difference in parental investments between married and cohabiting changes changes by \$133, of which

In Model 5 we consider an alternative way to account for economic resources – using the budget share of total expenditures dedicated to parental investments but still controlling for income on the right hand side to allow for possible non-homothetic preferences. Substantively, the results are similar to Model 4. Single parents spend a greater share of their budget on parental investments than married (0.4 percentage points more per child) or cohabiting households. Cohabiting households spend the smallest share (0.2 percentage points less per child than married households). Thus, like Model 4, Model 5 provides suggestive evidence that while economic resources explain disparities some differences by family structure, the commitment pathway helps explain disparities for cohabiting families.

Are these differences by family structure meaningful? We can assess this in several ways. First, we can compare this to other coefficients within the same model. So, for example, returning to Model 4, a $49 gap in parental spending (the difference between cohabiting and married parent households) is equivalent to an (49.1 / 2.64 × $1000 =) $18,600 difference in household income or about (49.1 / 204.7 =) 24% of the difference between households with a bachelors degree and those with only a high school degree. Second, we can compare this to studies of other drivers of parental investments. Schneider, Hastings, and LaBriola (2018: 492) found that – using the same measure of parental investments – the conditional (regression-adjusted) gap between children in the bottom quartile and the middle 50% was about $75 and between the middle 50% and the next 15% (76th to 90th percentile) was about $150. These gaps by family structure are comparable. Third, we can look to existing literature on the returns to investments in children. Recent evidence from studies of school

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$70 (53%) of that change is attributable to income. Between Model 1 and Model 4, the difference between married and single parents changes by $203, of which $134 (66%) of that change is attributable to income. This aligns with our interpretation. Economic resources matter, but because the cohabiting gap persists even after income and all other variables are accounted for, we also believe this provides some evidence that the commitment pathway also matters.

Second, it is possible there may be heterogeneous mediation effects (VanderWeele and Vansteelandt 2009). That is, income itself may have a differential effect on parental expenditures depending on the family structure. We also tested models with interaction terms between the family structure variables and income. In fact, the coefficients for the main effects of both family structure variables and income remained nearly unchanged, and the interaction terms were small and statistically non-significant. These models are in the Appendix

finance reform suggests that a \$494 per pupil annual (\$124 quarterly) increase in spending is associated with a 0.1 standard deviation increase in school achievement (Lafortune, Rothstein, and Schanzenbach 2017). Here again family structure gaps are comparable, and – also similar to educational investments – the effects are likely to accumulate as the gaps in investment persist throughout childhood and then can have long-lasting consequences into adulthood.

Robustness

To assess the robustness of our regression results, in Table 4 we further focus this test by restricting the analysis to only households that appear in all four quarters and for whom the family structure does not change. That is, households are either married, cohabiting, or single in all four waves. Although this restriction reduces the sample by about 40% (primarily due to households not appearing in all four waves of the survey – not because of large numbers of changes in family structure type – although consistently being available and responsive to followup interviews may in itself signal more household stability), this restriction allows us to separate some of the effects of recent disruptions on financial investment in children from the anticipated effects of shorter than expected duration predicted by the commitment pathway.

As shown in Table 4, the results are nearly identical to those in the prior analysis (coefficients for the standard control variables are not shown in the remaining models, but are available upon request). Both cohabiting and single parent households spend less than married households. Once household income is accounted for (Model 4), the single parent effect is positive (though not statistically significant) while the cohabiting effect remains negative. And again, for these more stable families, single parents again spend the greatest share of their budget on parental investments, while cohabiting households spend the least.

We also conducted separate analyses by education level. We restricted the sample first to only households where at least one parent had a bachelors and then to households where

neither had a bachelors (the full models are available in Appendix Table A3). We found larger family-structure gaps for the more educated households, but for both groups controlling for income significantly altered the single parent coefficient and made a much smaller difference to the cohabiting parent coefficient. Finally, models with the full sample using logged parental investments (Appendix Table A4) produced substantively similar findings, as did models used a between-effects and a random-effects specification (both in Appendix Table A5).

Moderation by Race/Ethnicity

The regression results above control for race and ethnicity, but we also consider the possibility that the effects of family structure on parental investments could differ by parent's race/ethnicity. We include full descriptives by family structure and race/ethnicity in Appendix Table A2. Households of different racial and ethnic groups vary substantially in terms of both parental investments and our key variables such as income, education, the presence of grandparents in the home, number of children, and family structure itself.

However, within each racial/ethnic group, we still see notable differences by family structure. Do economic resources and/or commitment help explain these differences in family structure after accounting for confounders? In Table 5 we present models of separate analyses for white, non-Hispanic; Black, non-Hispanic, and Hispanic. For each, we present two models, the first includes all controls (equivalent to Model 3 of the main results, except for the race/ethnicity controls) and the second controls for income (equivalent to Model 4 of the main results).

We find some notable differences by race/ethnicity. The large gap between cohabiting and married households in expenditures is driven overwhelming by Whites. Without controlling for income, the gap for cohabiting Whites is more than twice as large as for cohabiting Blacks and more than three times larger than for cohabiting Hispanics. After controlling for income, the gaps for Blacks and Hispanics are attenuated, but the gap for Whites remains

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large and statistically significant ($\beta = $ -74, p <.001). The gap between married parents and single parents is much smaller for Hispanics ($\beta = $ -22, p <.05) than for Whites ($\beta = $ -73, p <.001) and Blacks ($\beta = $ -81, p <.001). However, once income is accounted for, single parents spend more than married (and cohabiting) parents for every racial/ethnic group (although for Blacks, this difference is not significant). Results based on alternative codings of race/ethnicity (described in the Data section above) produced substantively similar results and are reported in Appendix Tables A5 and A6.

Regression results highlight family structure gaps, but these can be driven both by married parents spending more and by cohabiting and single parents spending less. We illustrate this in Figure 2 by calculating the predicted parental expenditures for married, cohabiting, and single parents families for each racial/ethnic group, holding all controls at their means. The left panel shows the results without accounting for income (Models 1, 3, and 5 of Table 5). Whites spend the most for all family structure types, and, interestingly, there is the least divergence by family structure type for parental expenditures among Hispanic families. The right panel shows the results with income being controlled for (Models 2, 4, and 6). For all three groups, single parents spend the most on parental financial investments in children, while, all else being equal, White cohabiting parents spend the least. While family structure appears to stratify parental investments across all race/ethnic groups, these analyses show that family structure differences are most pronounced for white, non-Hispanic parents versus Black, non-Hispanic or Hispanic parents, as evidenced by the largest spread between family structure types among Whites, non-Hispanics in both panels of Figure 2. We also found substantively similar results using alternative codings of family race/ethnicity (definitions described in the Data section above and models included in Appendix Tables A6 and A7).

Disaggregation by Expenditure Type

Finally, we disaggregate our models by the type of expenditure. Again, each pair of models presents first a model that controls for everything but income and then a model that

also controls for income (Models 3 and 4 of the main results, respectively). We observe similar patterns across all three outcomes, although the effects are largest for childcare for differences between married, cohabiting, and single parents households. We prefer the single total measure of parental financial investments because it captures multiple dimensions of advantage and disadvantage that children may receive. While ultimately the cumulative advantage matters (e.g., higher quality childcare + additional extra-curricular activities + better school supplies), these results show that inequalities by family structure exist across every dimension of parental financial investment.

Discussion and Conclusion

Family structure in the United States is undergoing important changes. Notably, there are increases in single parenting and cohabiting unions. These transformations in family structure have important implications for social mobility because both theory and empirical research suggest family structure plays an important causal role in children's life chances, in part through the differential financial investments that parents make for their children's development.

First, we examine differences in parental financial investments in children's childcare, schooling, and enrichment activities, and we find substantively significant gaps by family structure. Married parents make greater financial investments in children than both cohabiting and single parents, supporting the argument that this may be a key part of the explaining why children from these families tend to fare better both in childhood wellbeing and achievement and later in adult attainment (McLanahan and Lee, 2015; McLanahan, Tach, and Schneider, 2013; Bloome, 2017). While family structure and family stability are frequently intertwined, these results are robust among the portion of the sample who experienced no change in family structure during four quarters they were observed. The results are also robust across a number of other model choices and subsamples.

Second, we proposed and tested two explanations for these family-structure divides.

These differences may be explained by economic disparities, as married couples are also the highest earners. Indeed, once controlling for income to test this pathway, single parents actually spend the most on parental investments. Likewise, single parents spend the greatest portion of their income on these parental investments. It is important to note that just because the gap between married and single parent families can be fully explained by differences in family income does not make the differences any less "real". Rather, these results provide a useful understanding of the particular mechanism – inequalities in economic resources – driving these differences as they exist and are experienced in children's lives.

We also find evidence that marriage itself may matter for its commitment value. Even though cohabiting parents can benefit from the same economies of scale as married families (Becker, 1981; Manning and Brown, 2006), we find they spend far less than married couples, and these differences persist even conditional on income. This provides some support for the argument that marriage itself fosters greater preferences for investing in children by providing for a commitment that fosters long-term planning (Lundberg and Pollak, 2015; Howard and Reeves, 2014; Reeves 2014).

Third, we also tested whether race/ethnicity moderated these effects. Although we found the same patterns in family-structure differences for white, non-Hispanic; Black, non-Hispanic, and Hispanic families, the gaps were most pronounced among white, non-Hispanic families. This may help explain why associations between family structure and child wellbeing are also most pronounced for white, non-Hispanic children (Lee and McLanahan, 2015; Fomby and Cherlin, 2007; Wu and Thomson, 2001; Fomby et al., 2010).

These analyses are subject to some important limitations. First, in the CEX we only know the child's relationship to one household head (the reference person), so in cohabiting households we are unable to know whether the unmarried partner is also a parent of the child. Second, because the data come from a single respondent, if that respondent is unaware of the income or spending of another household members, this may not be captured in measures of income or parental investments. This issue is most likely to occur among cohabiting

households, although the extent to which cohabiting households with children pool their income and share expenses varies widely (Kenney 2004; Eickmeyer, Manning, and Brown 2018). Third, we are unable to see financial investments by parents who do not reside in the home. This is most obviously a factor for single parent households. Payments in the form of child support are already accounted for in our measure of household income and parental expenditures, but any direct expenditures made by a non-resident parent would not be observed. As a result, it is possible we are overstating the size of the family structure gap. Some of these expenditures are measured in the Child Development Supplement of the Panel Study of Income Dynamics, which might allow in future work to estimate how common and large these extra parental investments are. The primary advantages of the CEX are its detailed spending categories and its far larger sample size than any other expenditure data set.

To date, research on inequalities in parental investment has primarily focused on class. Recent research has found widening gaps by parental socio-economic status in how much money parents invest in their children (Schneider, Hastings, and LaBriola, 2018; Kornrich and Furstenberg, 2013; Kornrich, 2016). These increasing class divides has sparked concern because parental investment may be an important factor in the intergenerational perpetuation of advantage (Waldfogel and Washbrook, 2011). At the same time, we know family structure itself is sharply stratified by parental socio-economic status (McLanahan and Percheski, 2008). This is confirmed within our analysis sample as well. Table 2 showed that married households with children had higher incomes and more education that cohabiting households who in turn had more than single parent households.

However, our results do not suggest that the class gap in parental investment can be "explained" by compositional differences in family structure. In additional models we more directly tested this (Appendix Table A8). We first ran a model with all of controls (which includes education) and income, but without family structure, then we added family structure, and then we added interactions between family structure and income and between family

structure and education. While our main results showed that income substantially mediated the effect of family structure (especially for single parents), the opposite does not hold. The inclusion of family structure had little change on the coefficients for income or education. Moreover, none of the interaction terms were significant, showing no evidence that the effect of family structure varies significantly by parental income or education.

Looking to the Future

The demography of American families has changed dramatically over the past fifty years and will likely continue to do so in the coming decades. Some of these changes are broad based – Americans in general marrying later and having fewer children. But, this story of change is in large part a story of stratification, of what Sara McLanahan has called "diverging destinies." The retreat from marriage is most pronounced, the rise in non-marital births the sharpest, and the chances of growing up without married parents the highest for the most disadvantaged.

Disparate family settings matter because they are the where the action is in terms of the early development that lays a ground-work for later life attainment and achievement (Heckman, 2006). In 2050, these children will be America's prime workforce (an 8-year old today will be 40 in 2050). If certain families are increasingly able to transmit their advantages to children while others are less likely to do so, that bodes poorly for an open opportunity structure and suggests increasing inequality in the preparation of America's future labor force.

Our results add to the evidence that family structure is an important axis of inequality in contemporary America and, given expected demographic trends for the future, we expect this to be increasingly the case. For single parents, much of the disadvantage in investment appears to stem from differences in economic resources. One set of policy responses could usefully focus on the role of economic inequalities in accounting for these familial disparities. Policies that would increase the economic resources of single-parent families, including the

EITC as well as minimum wage increases, could usefully narrow this gap.

The persistent gaps in parental investment between married couples and cohabiters presents a different policy problem in that it is robust to controls for economic differences. If we take the idea of a differences in "commitment" seriously, it is not clear that policy that would promote marriage would have the intended effect of increasing investment among couples that would otherwise cohabit as the implicit assumption of the "commitment" perspective is that the effects of marriage are heterogenous, accruing to those couples who chose to marry. Instead, direct public investments in children through school expenditures, child health insurance and nutrition support, and other child-focused programs could serve to offset inequalities by family structure in parental financial investment.

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Tables and Figures

Table 1: Descriptives for Main Analysis (Source: Consumer Expenditure Survey 2003-2017)

	mean	*sd*	*min*	*max*
Parental financial investments	355.7	707.4	0	5839.7
Married parents	0.74	0.44	0	1
Cohabiting parents	0.062	0.24	0	1
Single parent	0.20		0	1
Income (in thousands)	86.8	69.3	-207.4	1339.9
Grandparents present	0.044		0	1
No HS	0.084		0	1
HS no BA	0.50		0	1
BA+	0.42		0	1
White, non-Hispanic	0.62		0	1
Black, non-Hispanic	0.13		0	1
Hispanic	0.19		0	1
Other, non-Hispanic	0.060		0	1
Age	40.5	8.18	25	65
Number of kids	1.93	1.00	1	13

Note: Some sources of income (e.g., self-employment income) can be negative.

Figure 1: Parental Investments by Family Structure (Source: Consumer Expenditure Survey)
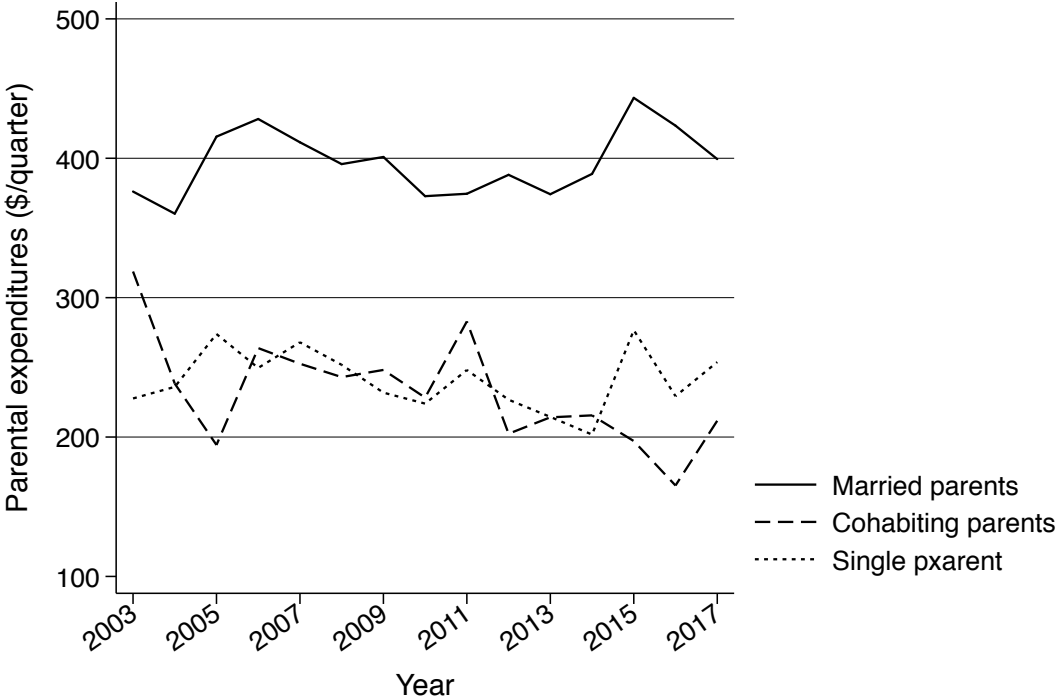
Table 2: Descriptives by Family Structure

	Married mean	Cohabiting mean	Single mean
Parental financial investments	397.3	225.9	241.2
Income (in thousands)	99.9	65.6	44.6
Grandparents present	0.039	0.045	0.066
No HS	0.068	0.090	0.14
HS no BA	0.44	0.72	0.65
BA+	0.49	0.19	0.21
White, non-Hispanic	0.67	0.54	0.48
Black, non-Hispanic	0.081	0.19	0.30
Hispanic	0.18	0.24	0.18
Other, non-Hispanic	0.069	0.028	0.036
Age	41.2	37.2	38.8
Number of kids	1.98	1.89	1.78
Observations	80157	6377	21259

Table 3: Regression Models of Parental Investments

	Parental Expenditures				as % of Budget
	(1)	(2)	(3)	(4)	(5)
Married	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−180.5***	−79.8***	−79.8***	−49.1***	−0.24***
	(10.9)	(10.7)	(10.7)	(10.3)	(0.064)
Single	−176.2***	−68.6***	−67.1***	24.8**	0.42***
	(7.52)	(7.63)	(7.64)	(7.75)	(0.050)
Grandparents present			−65.4***	−115.2***	−0.67***
			(12.3)	(12.3)	(0.060)
Income (in thousands)				2.64***	0.0044***
				(0.098)	(0.00030)
No HS		−66.2***	−66.1***	−26.9***	−0.31***
		(6.00)	(6.01)	(6.19)	(0.048)
HS no BA		*ref.*	*ref.*	*ref.*	*ref.*
BA+		326.4***	325.5***	204.7***	0.86***
		(7.87)	(7.87)	(7.85)	(0.041)
White		*ref.*	*ref.*	*ref.*	*ref.*
Black		−67.0***	−66.1***	−29.8**	−0.18**
		(10.0)	(10.0)	(9.64)	(0.057)
Hispanic		−82.8***	−79.1***	−34.4***	−0.23***
		(7.59)	(7.64)	(7.43)	(0.043)
Other Race		31.4	37.6*	46.3**	0.18*
		(17.4)	(17.5)	(16.7)	(0.078)
Age		9.04**	8.66**	−5.48	−0.10***
		(3.19)	(3.19)	(3.10)	(0.018)
Age × Age		−0.16***	−0.16***	−0.028	0.00056**
		(0.039)	(0.039)	(0.038)	(0.00021)
Number of kids	−102.0***	−87.6***	−87.3***	−88.5***	−0.61***
	(2.96)	(3.02)	(3.02)	(2.94)	(0.016)
Constant	575.1***	336.7***	345.7***	501.9***	5.60***
	(14.9)	(65.5)	(65.5)	(63.6)	(0.39)
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	107793	107793	107793	107793	107793

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4: Regression Models of Parental Investments among Stable Families Only

	Parental Expenditures				as % of Budget
	(1)	(2)	(3)	(4)	(5)
Married	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−165.0***	−72.1***	−72.3***	−45.8**	−0.23*
	(17.3)	(16.8)	(16.7)	(15.9)	(0.100)
Single	−160.1***	−76.9***	−75.3***	19.7	0.38***
	(11.2)	(11.3)	(11.3)	(11.3)	(0.074)
Grandparents present			−54.9**	−108.8***	−0.58***
			(17.9)	(18.0)	(0.085)
Income (in thousands)				2.58***	0.0043***
				(0.13)	(0.00042)
Household controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Month Fixed Effects	*No*	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*No*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	65676	65676	65676	65676	65676

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$
Note: In a stable family structure, the family appears in all four quarters of the CEX Interview survey and reports the same family structure in all four quarters.

Table 5: Regression Models of Parental Investments by Race/Ethnicity

	White, non-Hispanic		Black, non-Hispanic		Hispanic	
	(1)	(2)	(3)	(4)	(5)	(6)
Married	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−107.6***	−74.1***	−47.7	12.2	−30.0	−15.7
	(15.7)	(15.1)	(26.7)	(26.1)	(16.2)	(15.3)
Single	−73.2***	30.5**	−80.9***	38.8	−22.4*	41.6***
	(11.2)	(11.4)	(18.5)	(21.9)	(11.3)	(11.5)
Income (in thousands)		2.51***		3.57***		2.63***
		(0.11)		(0.48)		(0.20)
Grandparents present	−102.3***	−145.8***	−13.7	−92.0*	−52.8***	−98.3***
	(19.5)	(20.1)	(42.3)	(40.4)	(12.2)	(13.1)
Household controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	66708	66708	12591	12591	21137	21137

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 2: Predicted Parental Expenditures by Family Structure and Race/Ethnicity
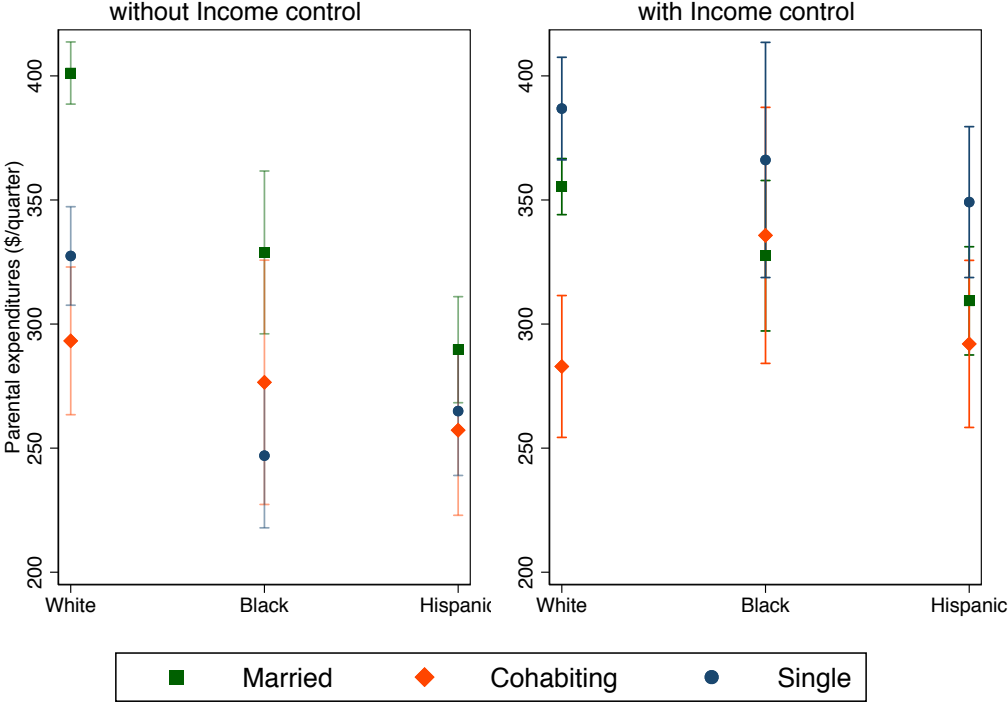
Table 6: Regression Models of Parental Investments Separated by Expenditure Type

	Lessons		School		Childcare	
	(1)	(2)	(3)	(4)	(5)	(6)
Married	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−8.20***	−3.35	−30.0***	−20.7***	−41.5***	−25.0**
	(1.86)	(1.82)	(4.08)	(3.98)	(9.78)	(9.62)
Single	−4.32**	10.2***	−3.41	24.5***	−59.3***	−9.84
	(1.63)	(1.75)	(4.21)	(4.37)	(6.30)	(6.38)
Income (in thousands)		0.42***		0.80***		1.42***
		(0.024)		(0.060)		(0.078)
Grandparents present	−5.45	−13.3***	−4.59	−19.7**	−55.3***	−82.2***
	(2.90)	(2.90)	(6.10)	(6.31)	(10.4)	(10.4)
Household controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	107793	107793	107793	107793	107793	107793

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$

Appendix

Table A1: Descriptives by Family Structure for Stable Families

	Married mean	Cohabiting mean	Single mean	All mean
Parental financial investments	394.2	229.2	234.1	358.6
Income (in thousands)	101.5	67.8	45.2	90.2
Grandparents present	0.039	0.043	0.070	0.045
No HS	0.067	0.095	0.15	0.082
HS no BA	0.43	0.70	0.63	0.48
BA+	0.50	0.20	0.22	0.44
White, non-Hispanic	0.68	0.53	0.49	0.64
Black, non-Hispanic	0.072	0.17	0.29	0.12
Hispanic	0.18	0.27	0.18	0.18
Other, non-Hispanic	0.067	0.025	0.035	0.059
Age	41.6	38.2	39.7	41.1
Number of kids	1.99	1.90	1.75	1.95
Observations	51428	3060	11188	65676

Table A2: Descriptives by Family Structure and Race/Ethnicity

| | Married | Cohabiting | Single | All |
	mean	mean	mean	mean
White, non-Hispanic				
Parental financial investments	443.3	259.4	308.3	412.9
Income (in thousands)	109.4	73.4	51.9	98.7
Grandparents present	0.020	0.027	0.041	0.024
No HS	0.023	0.041	0.074	0.032
HS no BA	0.42	0.72	0.65	0.47
BA+	0.56	0.24	0.28	0.50
Age	41.6	38.1	40.4	41.2
Number of kids	1.93	1.76	1.61	1.88
Observations	53128	3414	10166	66708
Black, non-Hispanic				
Parental financial investments	321.7	213.2	180.0	247.2
Income (in thousands)	84.3	54.1	36.6	59.8
Grandparents present	0.047	0.035	0.053	0.049
No HS	0.023	0.064	0.15	0.087
HS no BA	0.55	0.75	0.69	0.63
BA+	0.42	0.18	0.16	0.28
Age	41.2	36.4	36.8	38.8
Number of kids	2.02	2.07	1.92	1.98
Observations	5496	1076	6019	12591
Hispanic				
Parental financial investments	210.4	163.7	162.6	197.3
Income (in thousands)	67.1	55.3	37.2	60.3
Grandparents present	0.078	0.085	0.13	0.088
No HS	0.26	0.22	0.32	0.27
HS no BA	0.52	0.68	0.59	0.54
BA+	0.22	0.10	0.100	0.19
Age	39.5	36.0	37.6	38.9
Number of kids	2.16	2.05	1.98	2.12
Observations	15314	1663	4160	21137

Table A3: Regression Models of Parental Investments by Education

	No Bachelors		Bachelors	
	(1)	(2)	(3)	(4)
Married	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−49.1***	−28.0**	−165.7***	−117.9***
	(9.72)	(9.56)	(34.4)	(31.9)
Single	−52.4***	11.8	−108.1***	45.3*
	(6.26)	(7.01)	(22.9)	(22.5)
Income (in thousands)		2.04***		2.96***
		(0.14)		(0.12)
Grandparents present	−37.3***	−80.2***	−130.1***	−175.7***
	(9.09)	(9.70)	(36.0)	(35.1)
Household controls	*Yes*	*Yes*	*Yes*	*Yes*
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Observations	62377	62377	45416	45416

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$
Note: Households were coded for education based on whether the most educated parent had received at least a bachelors degree.

Table A4: Regression Models of using Logged Parental Investments

	Parental Expenditures			
	(1)	(2)	(3)	(4)
Married	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−1.04***	−0.50***	−0.50***	−0.40***
	(0.056)	(0.057)	(0.057)	(0.055)
Single	−0.82***	−0.24***	−0.23***	0.060
	(0.034)	(0.034)	(0.034)	(0.035)
Grandparents present			−0.38***	−0.54***
			(0.059)	(0.058)
Income (in thousands)				0.0084***
				(0.00026)
No HS		−0.86***	−0.86***	−0.74***
		(0.043)	(0.043)	(0.042)
HS no BA		*ref.*	*ref.*	*ref.*
BA+		1.14***	1.13***	0.75***
		(0.030)	(0.030)	(0.031)
White		*ref.*	*ref.*	*ref.*
Black		−0.69***	−0.68***	−0.57***
		(0.043)	(0.043)	(0.042)
Hispanic		−0.79***	−0.77***	−0.63***
		(0.036)	(0.036)	(0.035)
Other Race		−0.36***	−0.33***	−0.30***
		(0.059)	(0.059)	(0.057)
Age		0.16***	0.16***	0.11***
		(0.014)	(0.014)	(0.013)
Age × Age		−0.0019***	−0.0018***	−0.0014***
		(0.00016)	(0.00016)	(0.00016)
Number of kids	−0.23***	−0.13***	−0.13***	−0.13***
	(0.013)	(0.012)	(0.012)	(0.012)
Constant	4.16***	0.39	0.45	0.94***
	(0.062)	(0.29)	(0.29)	(0.28)
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Observations	107793	107793	107793	107793

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$
Note: A value of zero for logged parental expenditures is assigned to respondents
with no parental expenditures for a given quarter, since the log of zero is undefined.

Table A5: Between Effects and Random Effects Versions of Main Models

	Between effects model		Random effects model	
	(1)	(2)	(3)	(4)
Married	$ref.$	$ref.$	$ref.$	$ref.$
Cohabiting	−85.3***	−53.9***	−79.2***	−42.1***
	(13.4)	(12.9)	(12.5)	(12.1)
Single	−64.2***	31.2***	−67.7***	22.7**
	(8.37)	(8.27)	(8.08)	(7.98)
Grandparents present	−59.3***	−112.2***	−65.7***	−107.5***
	(15.4)	(14.9)	(13.8)	(13.4)
Income (in thousands)		2.69***		2.66***
		(0.050)		(0.049)
No HS	−71.5***	−30.6**	−65.5***	−27.4*
	(12.1)	(11.7)	(11.6)	(11.2)
HS no BA	$ref.$	$ref.$	$ref.$	$ref.$
BA+	330.2***	204.0***	315.4***	196.3***
	(7.07)	(7.21)	(6.80)	(6.93)
White	$ref.$	$ref.$	$ref.$	$ref.$
Black	−63.7***	−23.8*	−64.7***	−24.1*
	(10.2)	(9.90)	(10.0)	(9.68)
Hispanic	−84.1***	−37.0***	−85.3***	−38.1***
	(8.84)	(8.56)	(8.58)	(8.32)
Other Race	26.5*	40.7***	27.5*	39.4***
	(12.8)	(12.4)	(12.4)	(12.0)
Age	8.93**	−5.04	10.5***	−3.07
	(3.25)	(3.15)	(3.14)	(3.04)
Age × Age	−0.15***	−0.026	−0.17***	−0.048
	(0.039)	(0.038)	(0.038)	(0.036)
Number of kids	−87.4***	−87.7***	−91.1***	−91.0***
	(3.22)	(3.11)	(2.99)	(2.90)
Constant	301.1***	456.5***	306.4***	436.5***
	(70.0)	(67.6)	(64.9)	(62.7)
Month Fixed Effects	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Observations	107793	107793	107793	107793

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$

Table A6: Regression Models of Parental Investments by Mother's Race/Ethnicity

	White, non-Hispanic		Black, non-Hispanic		Hispanic	
	(1)	(2)	(3)	(4)	(5)	(6)
Married	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−106.1***	−71.5***	−80.8**	−19.9	−17.1	−0.93
	(15.0)	(14.4)	(26.5)	(26.0)	(18.6)	(17.8)
Single	−73.4***	28.5*	−67.4***	48.9*	−23.5*	41.4***
	(11.2)	(11.4)	(18.8)	(22.3)	(11.5)	(11.6)
Income (in thousands)		2.49***		3.49***		2.58***
		(0.11)		(0.51)		(0.20)
Grandparents present	−106.3***	−148.7***	−3.65	−80.7	−48.4***	−92.8***
	(18.3)	(19.1)	(43.7)	(41.8)	(13.2)	(13.5)
Household controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	66635	66635	11823	11823	21326	21326

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$
Note: We coded race/ethnicity based on the mother's race/ethnicity, except for single-parent households where we use the race/ethnicity of the one parent present.

Table A7: Regression Models of Parental Investments by Either Parent's Race/Ethnicity

	White, non-Hispanic		Black, non-Hispanic		Hispanic	
	(1)	(2)	(3)	(4)	(5)	(6)
Married	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*	*ref.*
Cohabiting	−103.9***	−70.3***	−51.2*	9.07	−32.2	−16.3
	(14.5)	(13.9)	(25.8)	(25.3)	(17.1)	(16.2)
Single	−73.5***	29.6**	−77.3***	40.7	−34.0**	35.3**
	(11.1)	(11.2)	(18.1)	(21.4)	(11.5)	(11.6)
Income (in thousands)		2.51***		3.50***		2.63***
		(0.11)		(0.46)		(0.19)
Grandparents present	−104.2***	−145.9***	−15.9	−88.4*	−55.2***	−97.5***
	(18.6)	(19.2)	(41.8)	(39.7)	(13.3)	(13.6)
Household controls	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*	*Yes*
Observations	70316	70316	12942	12942	23750	23750

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$
Note: Households were coded for each race/ethnicity category if either parent was labeled as being that race/ethnicity (e.g., a household would be Hispanic if either parent was Hispanic; Black, non-Hispanic if either parent was Black, non-Hispanic, etc). This means some households appear in more than one model.

Table A8: Regression Models of Parental Investments with Interactions

	Parental Expenditures			
	(1)	(2)	(3)	(4)
Married		*ref.*	*ref.*	39.1***
				(10.7)
Cohabiting		−49.1***	−23.8	*ref.*
		(10.3)	(18.2)	
Single		24.8**	28.4*	58.7***
		(7.75)	(13.4)	(11.3)
Income (in thousands)	2.60***	2.64***	2.65***	2.64***
	(0.095)	(0.098)	(0.10)	(0.098)
Married × Income (in thousands)			*ref.*	
Cohabiting × Income (in thousands)			−0.38	
			(0.29)	
Single × Income (in thousands)			−0.057	
			(0.28)	
No HS	−23.2***	−26.9***	−27.3***	−2.35
	(6.22)	(6.19)	(6.19)	(19.9)
HS no BA	*ref.*	*ref.*	*ref.*	*ref.*
BA+	205.5***	204.7***	204.8***	139.3***
	(7.85)	(7.85)	(7.82)	(32.3)
Married × No HS				−23.0
				(21.0)
Married × HS no BA				*ref.*
Married × BA+				64.2
				(33.1)
Cohabiting × No HS				*ref.*
Cohabiting × HS no BA				*ref.*
Cohabiting × BA+				*ref.*
Single × No HS				−29.2
				(21.7)
Single × HS no BA				*ref.*
Single × BA+				91.2*
				(38.6)
Household controls	*Yes*	*Yes*	*Yes*	*Yes*
Month Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Year Fixed Effects	*Yes*	*Yes*	*Yes*	*Yes*
Observations	107793	107793	107793	107793

Standard errors in parentheses
* $p < .05$, ** $p < .01$, *** $p < .001$