Inequalities in Parental Spending on Young Children: 1972 to 2010

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This article investigates inequality in parental spending on young children over the period from 1972 to 2010. I find increased spending among parents at the top of the income distribution but little change among parents at the bottom of the income distribution. The gap in spending is equally attributable to increased spending on center-based care for preschool-age children and spending on enrichment goods and activities. The article examines potential causes of increased spending, including income, parental education, and wife's work status, using decomposition analysis. Results indicate that higher incomes are the largest cause of the increased gap in spending but that increases in wife's earnings, college completion, and wife's work hours are also important for growth in spending.

Keywords: *investment, children, child care, inequality*

In recent years, scholars and the public have grown more worried about rising income inequality in the United States, particularly because inequality is now higher than at any time since before the Great Depression (Piketty & Saez, 2003, 2013). For some, high inequality is worrying because it may negatively affect health, crime, social cohesion, and other outcomes in the present day (Fischer et al., 1996; Van de Werfhorst & Salverda, 2012). Yet for others, high current inequality is most problematic because it could lead to reduced social mobility in future generations by creating different opportunities for children at the top and bottom of the income distribution (cf. Neckerman & Torche, 2007). Increasing inequality may harden the class structure if it affords children different experiences that influence their future trajectories.

Some evidence suggests that the U.S. class structure is already more likely to reproduce inequalities than in the past. For example, Reardon (2011) finds that the income-based gap in achievement scores has increased over time. Scores for children at the 90th percentile of the income distribution increased between the mid-1970s and the mid-1990s, while scores for children at the 10th percentile of the distribution remained stagnant. Bailey and Dynarski (2011) find that high-income children's college entry and completion increased over a similar period. Increases in the income-based achievement gap are not solely the result of class differences in schooling, because the gap exists already when children enter kindergarten (Reardon, 2011). However, more recent evidence finds a narrowing of income-based gaps in school readiness since the 1990s (Reardon & Portilla, 2015). In general, strong associations between class and educational outcomes suggest low

intergenerational mobility, since achievement test scores help predict future earnings (Farkas, 1996; Farkas & Vicknair, 1996; Jencks & Philips, 1999).

In this article, I investigate trends in one potential explanation for the increasing size of the income-based achievement gap among children entering school: parental spending during the early years of childhood. Growing inequality in spending could link income inequality to a growing gap in childhood achievement if spending boosts achievement. Little evidence directly shows that spending on young children boosts later achievement, although, as I discuss in detail below, some evidence supports the assumption that spending might boost achievement.

It is unclear whether spending on young children has become more unequal. Existing evidence shows that the gap in parents' monetary investments in children has grown over the last half century between those at the top and bottom of the income distribution (Kornrich & Furstenberg, 2013). However, this evidence comes from spending on all children under the age of 25, and much of the increase in spending over time is on higher education and thus offers less information about trends for younger children. The growth of the income-based achievement gap among children just entering school suggests a need for attention to parental investments in young children as well.

Understanding the sources of shifting investments is also important. Income has increased at the top of the income distribution and could have led to increased spending. Yet changes in income may explain only some of the changes in parental expenditures. Increases in educational attainment, women's labor force participation, and both men's and women's work hours could lead to increased spending. For

example, high-income families may have less time to spend with children because they are more likely now than in the past to be dual-career families, in which both spouses work long hours and require more nonfamilial care. Beyond compositional changes, parents today may spend more because of changing norms regarding childhood education and development and a general diffusion of ideologies of intensive motherhood and concerted cultivation (Hertz, 1997; Lareau, 2003).

This article investigates changes in the income-based gap in monetary investments in children under the age of 6, when most children typically have entered school in the United States. I examine spending on day care, babysitting, and enrichment-related goods and services for children. I use data from the Consumer Expenditure Survey (CES) from 1972 to 2010 to track changes in expenditures. I find that inequality in spending grows substantially and that nearly all of the increase in the spending gap results from higher spending among high-income households. I use decomposition analysis to examine changes in spending over time, comparing the sources of shifts among those at the top and bottom of the income distribution. I find that the largest share of change is attributable to increases in income, with other increases in spending resulting from increases in women's work hours and earnings as well as parental education.

Spending as Investment in Young Children

A literature on spending on children has begun to document how parents use resources for and transfer resources to children of all ages (Folbre, 2008; Hao & Yeung, 2015; Kaushal, Magnusson, & Waldfogel, 2011; Kornrich & Furstenberg 2013; Schoeni & Ross, 2005). A human capital perspective considers investments in children to be one of the most important a society can make, as investments determine the future productivity, health, and well-being of a generation of workers (Becker, 1975; Folbre, 2008). The two primary forms of parental investment are time and money (spending on children).

This article examines spending over time to see whether inequalities of spending on young children have increased and, particularly, whether high-income parents have increased spending, since increases in the income-based achievement gap were attributable mostly to higher test scores among high-income children (Reardon, 2011). I examine spending because it offers a potential mechanism to explain how increases in income have resulted in increases in achievement. Yet I am unable to directly test whether spending on young children increases cognitive and achievement-related outcomes over time, as these data do not contain measures of spending and achievement over the long period in question. An investigation of the changing gap in spending offers useful information about whether spending could plausibly be linked to changes in achievement over time.

Nonetheless, the assumption that spending could improve outcomes deserves some discussion. In this article, I examine two areas of targeted spending: child care and spending on achievement-related goods at home. The assumption that spending on child care increases achievement depends on two links: first, that spending increases the quality of care and, second, that quality improves childhood outcomes. Existing research provides some evidence that these links exist. Higher quality appears to lead to better outcomes, including cognitive skills, based on both observational and experimental evidence on child care uptake (National Institute of Child Health and Human Development Early Child Care Research Network [NICHD ECCRN], 2000; C. Ramey et al., 2000; Ruzek, Burchinat, Farkas, & Duncan, 2014; Schweinhart, Barnes, & Weikart, 1993). Attending center-based formal care is also positively related to achievement (NICHD ECCRN & Duncan, 2003). However, effect sizes are small, and children of mothers with low levels of education seem to benefit more from attending high-quality child care than children of mothers with high levels of education, suggesting fewer benefits of child care for high-income children (Barnett & Boocock, 1998; NICHD ECCRN & Duncan 2003). Higher costs—which translate into higher parental spending—are associated with higher quality, as indicated by smaller child-teacher ratios, small child group size, and more educational programs (Helburn & Howes, 1996; Powell & Cosgrove, 1992). Thus, shifts in child care spending might signal shifts in the quality of care and its effects on young children.

Similarly, for enrichment goods, increased spending would need to increase either the quantity or quality of these goods, and quantity or quality should improve childhood outcomes. Researchers have measured the presence of toys, games, books, and other items in the home that may stimulate child achievement, using the Home Observation for Measurement of the Environment Scale (Totsika & Sylva, 2004), and find that these predict better childhood outcomes (Bradley, Corwyn, McAdoo, & Coll, 2001; Danziger & Waldfogel, 2000). Although parents can purchase these items, continuous increases in, for example, the number of books in the home may not always lead to improvements in children's outcomes.

Parental Characteristics and Investments

Understanding the sources of changes in the gap in spending is also important. One likely reason parents spent more over time is that top incomes increased over the past 40 years. However, other family characteristics associated with spending have also changed, including wives' labor force participation and the size of families. In addition, parents today may be more interested in organized activities than in the past, and some of these shifts may be attributable to shifts in parental education (Lareau, 2003). Below, I discuss

family characteristics that predict parental spending on children; later in the article, I examine the effect of changes in these characteristics on changes in spending on children.

Income

Household income is important for parental expenditures on children because income sets bounds on expenditures. Because the goal in this article is to investigate whether gaps in parental spending on children mirror gaps in test scores, and Reardon (2011) examines spending at the 10th and 90th percentiles of the income distribution, I focus much of the analysis on relative income—membership in the top and bottom decile—rather than absolute income.

Maternal Employment and Earnings

One of the largest categories of expenditures for young children is child care. Although parents have a range of motives for spending on child care, its use is often necessary when there are no parental or other familial caregivers available. Shifts in labor force participation among women with young children since the early 1970s may help explain shifts in spending on children. I thus investigate the effects of women's participation in part-time and full-time work on spending on young children.

Maternal labor force participation may also influence spending because it shifts the distribution of income in the household. Women's share of earned income is typically associated with greater household spending on services that might replace women's household labor (Cohen, 1998; de Ruijter, Treas, & Cohen, 2005). In England, when control of money for a child benefit changed from the father to the mother, households spent more on children (Lundberg, Pollak, & Wales, 1997). This suggests that women are more likely than men to direct earnings toward children, so I investigate whether women's increased share of earnings is related to shifts in parental investments in children.

Family Structure and Size

Single-parent families are more common, and families have fewer children now than in the 1970s. Even net of income, family structure likely influences parental spending through a combination of capabilities and needs. Two-parent families can pool resources and share other expenses, freeing up funds for investment in children. Indeed, existing research finds that married-couple households spend more than other types of households on children (Ziol-Guest, Kalil, & DeLeire, 2004).

Children's characteristics can also influence parents' behaviors. The number of children is related to children's outcomes, like educational achievement and parental investment (Kuo & Hauser, 1997; though see Guo & VanWey,

1999). Smaller family sizes could lead parents to increase investments per child as they have more resources per child available. Beyond the number of children, the gender of children may also influence parental decision making. Since parents typically do not select children's gender, the gender of children offers a pseudoexperimental comparison, as parents react differently to boys and girls (Pollard & Morgan, 2002). In the 1970s, parents spent more on boys than on girls (Kornrich & Furstenberg, 2013). Much of this difference resulted from spending on higher education, so it is unclear whether this holds for younger children.

Parental Education

Finally, parental education may lead parents to choose more intense investments in children. Education may be associated with tastes for investments and use of formal child care. Rubin (1976) argued that working-class households distrusted many organized settings for their children, as they worried about what types of lessons children would learn in these settings. Similarly, recent research suggests the growing importance of ideologies of intensive parenting and "concerted cultivation," leading middle- and upper-class parents to devote substantial resources to their children, often in organized activities (Hertz, 1997; Lareau, 2003). If these ideologies are new, this should imply that parents increase spending not only because they have more education now than in the past but also because education is more strongly associated with spending on children. A similar explanation is that highly educated parents are concerned about increased competition for college spots, which may explain increases in time spent with children (G. Ramey & Ramey, 2010).

Data, Measures, and Methods

I use data from the CES, a nationally representative survey of spending conducted by the Bureau of Labor Statistics. The CES has been conducted quarterly between 1980 and the present day. Before 1980, surveys were conducted sporadically, with the most recent wave from 1972 to 1973. Although there are waves of the CES at earlier points in time, for example 1960 to 1961, these waves do not contain sufficiently detailed expenditure data to compare them with present data. For example, spending on child care—both nursery school and other domestic service—is combined with other household spending, such as on ice and paper supplies. Thus, I use data from the 1972-to-1973 survey and then rely on data aggregated for each year from 1980 to 2010.

Responses in the CES are collected in a diary and an interview format. I use data from the interview survey, in which households are asked about expenditures over the previous 3 months. The interview survey is useful for capturing expenses, like child care, which are large or regularly

occurring even if they are infrequent because the 3-month recall period typically will include an instance of spending if parents spend at all, and the large amount implies that they will remember spending even despite a long recall period. In addition, Bureau of Labor Statistics interviewers visit a household 3 months before the first data are recorded to ask the household to keep spending records. Thus, the interview survey should also capture spending on enrichment goods for children, even though expenses are smaller.

I use a sample of all households that have nonmissing values for total expenditures and that have any children present under the age of 6.

Spending Measures

Spending in the interview survey is measured by self-reports of expenditures over the past 3 months. I examine child care, which includes both day care and babysitting, and enrichment spending for children, which includes books, toys, games, and fees for enrichment activities largely intended for children. The appendix contains a list of these goods and services and the CES codes associated with them.

A challenge in measuring spending on children is the assignment of expenditures to family member, because the CES does not indicate the intended recipient of expenditures. This difficulty is minimized for child care because much, although not all, child care spending is for younger children. For spending on some goods, like books, toys, and games, assignment is more problematic since spending is likely to occur for both older and younger children. One possibility would be to restrict the sample to households that have no children age 6 or older. This would exclude a substantial share of the under-6 population. Preliminary analyses suggest that trends and levels of spending are similar when examining households with only children under the age of 6. I thus retain households with older as well as younger children.

For descriptive purposes, I present both spending per child and total spending. For spending per child, I use the number of children under age 6 in the denominator. I use the Consumer Price Index Research Series (CPI-U-RS) to express expenditures in 2012 dollars (Sahr, 2013).[1]

Independent Variables

Income. The CES includes measures of earned and unearned income as well as income before and after taxes. I use measures of total income before taxes after 1980, and the closest comparable measure—total family income—for 1972-to-1973 data. Because these measures are total income, they include welfare benefits, such as food stamps, which results in some equalization of income levels. Relying on after-tax income rather than pretax would likely result in greater equality due to progressivity in U.S. income taxes. I choose

the pretax measure of income because I expect that reporting will be more reliable than after-tax income. As with spending variables, I use the CPI-U-RS to inflate income to 2012 dollars. To ensure confidentiality, the CES censored data near the top and bottom of the distribution for 1972 to 1973. Thus, estimates of incomes for that year are not exact but are a rough average taking censoring into account. Few households have censored outcomes—only roughly 10% of households within either the top or the bottom decile in the 1972-to-1973 data have censored incomes.

Income is one of the most frequently missing variables in the data. In a given year, roughly 10% to 20% of respondents do not report income. In the descriptive results I present, I exclude these households and generate income decile cut points using only households that reported income. Because respondents report a range of correlated variables, including total expenditures, I use multiple imputation for missing income for the regression-based analyses. To impute missing household and individual incomes, I use PROC MI as implemented in SAS using Markov chain Monte Carlo imputation. To impute missing incomes, I include measures of husband's and wife's age, education, weeks and hours worked, total children, and total household income (in the case of missing individual incomes). I also include total household expenditures, which are highly correlated with income and provide useful additional information about missing income data. In generating imputations, it is often useful to set a "seed" to begin the imputation process so that results are identical in each imputation, rather than relying on the seed set by the system clock. I use the number 88888 as a seed, and I generate five imputations.

Women's work status. I use two dichotomous variables to control for wife's time in addition to her monetary contributions. These variables measure whether a woman is at work part- or full-time, with the reference category being a household in which the woman reports no paid work.

Women's share of income. To gauge the effect of women's provision of income to the home, I measure the proportion of reported earned income from women. For single-mother households, I set the measure to 100%. For single-father households, I set the measure to 0%.

Family structure. I use three dichotomous variables to examine family structure, using two-parent households as the reference category: one for single-mother families, one for single-father families, and a final category for all other families. The last category includes, among others, households in which multiple generations reside in one household.

Children's characteristics. I control for a number of characteristics of children. I include a measure of the age of the

youngest child and a squared term to capture nonlinearities, as the relationship may not be linear. I also include a measure for the total number of children, because more children may create more demands on parental income. Since parents are now likely to support children even after they leave the home, this measure includes children ages 0 to 24. I also include a measure of the gender of children in the home.

Education. Because education may change parental incentives to spend on children, I also control for parents' educational level. I rely on mother's education where possible. For the 1972-to-1973 data, only the father's education is listed when both parents are present, so I use father's education for those years. For single-parent households, I use the education of the parent in the household. I include variables for some college and for a college degree or higher, with the reference category those who completed high school or less. I do not differentiate between the completion of college and advanced degrees because the latter category does not exist in the 1972-to-1973 data.

Methods

I first present descriptive evidence on spending over time for households at different points in the income distribution. To extend these descriptive results, I investigate why spending changes in the richest and the poorest households. To do so, I use a variant of a regression-based decomposition analysis (Blinder, 1973). Decomposition analysis allows the examination of sources of differences between two samples. My primary interest is in how changes in household characteristics have produced changes in spending. I use data from all years to generate a regression model for spending on children and estimate the contribution of changes in characteristics between the early 1970s and the late 2000s. I do so by subtracting the average characteristics for families in the latter period from the earlier period and multiplying this difference by the regression coefficient from the pooled model.

Spending: Trends Over Time and Sources

I begin by showing trends in parental spending on young children from 1972 to 2010, combining spending on babysitting, day care, and enrichment goods in Figure 1. Panel A shows spending per child, Panel B shows total spending, and Panel C shows total spending on a logged scale to better highlight percentage changes rather than changes in the total amount spent. Figure 1 shows spending for six groups: among households in the top decile, the ninth decile, and each of the quintiles below. Because there are not substantial differences in trends over time for the bottom eight deciles, I cluster these into four quintiles.

For both total spending and spending per child, the most striking pattern is the separation between rich and poor households in spending on young children. Households in the top decile triple their total spending, increasing from $3,000 in the early 1970s to $9,000 in 2010, with steady increases across the entire period. Spending in the second decile and second quintile also increased, although mostly between the early 1970s and the early 1990s. After the 1990s, spending fluctuated between roughly $4,500 and $6,000 for the second decile and between $3,000 and $4,000 for the second quintile. For the remainder of the income distribution, spending increases are smaller and appear to occur only before the mid-1980s. For the third and fourth quintile, spending increased from the early 1970s through the mid-1980s, after which spending remained at roughly $2,200 and $1,500, respectively. These increases are more visible in Panel C, which highlights percentages changes due to the change in scale. The bottom quintile, finally, shows practically no increase over time, although spending is admittedly higher in the early 1980s than in the 1970s.

The effect of the Great Recession also seems visible throughout the income distribution. Spending declined between 2006 and 2008 for those at the top of the income distribution, as measured by total spending, whereas the timing was somewhat later across the rest of the income distribution, but there were noticeable decreases between 2008 and 2010 for nearly all other income groups. These patterns hold for both spending per child and total spending, although the trend is more pronounced when examining total spending. The sharper increase in total spending compared to spending per young child suggests that, over time, higher-income parents have relatively more young children present compared to middle-income and lower-income parents.

Figure 2 shows changes in which goods rich parents spent more on over time compared to poorer parents. To illustrate these changes, I compare parents in the top decile to those at the bottom decile, highlighting the differences on day care, enrichment goods, and babysitting between those at the top and bottom of the income distribution. Increased spending on day care and enrichment goods nearly equally account for increases in spending from the 1970s until the late 1990s. After the late 1990s, enrichment spending fluctuates, whereas spending on day care seems to continue to increase. In the early 1970s, rich parents spent little more than poorer parents on day care. Day care did not constitute the largest share of the gap until the early 1990s. After this, spending by richer parents on day care continued to increase, and the gap between rich and poor households grew. Over time, it appears parents made a large switch from babysitting to day care, with substantial growth between the early 1970s and the mid-1980s. One potential interpretation is that parents are more likely to report care services for children as "day care" despite few structural changes in the care setting. However, shifts in the number of workers in care occupations suggest that actual changes occurred in care. For example, Kornrich (2012) finds that the number of workers

Panel A: Spending per young child

Panel B: Total spending on young children

Panel C: Total spending on young children, log scale
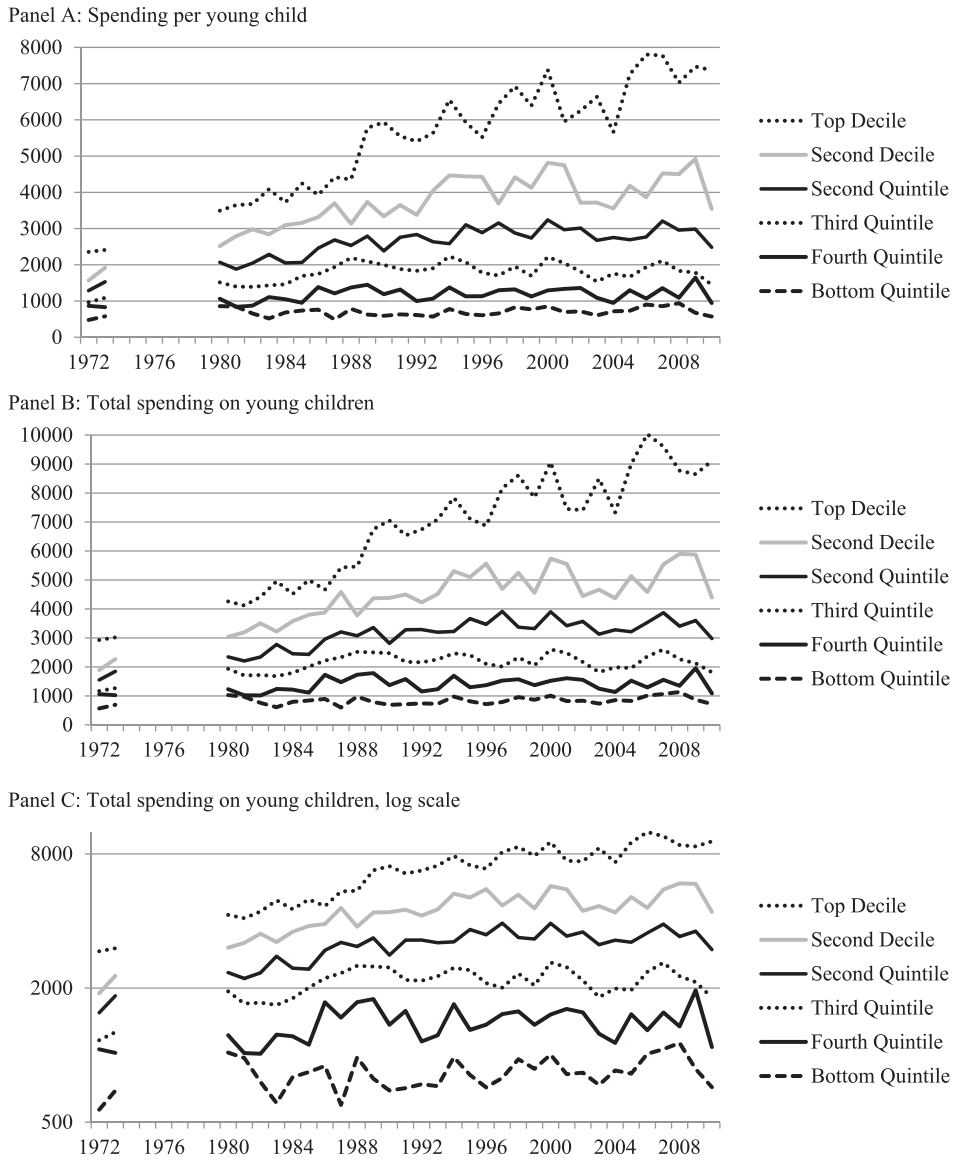

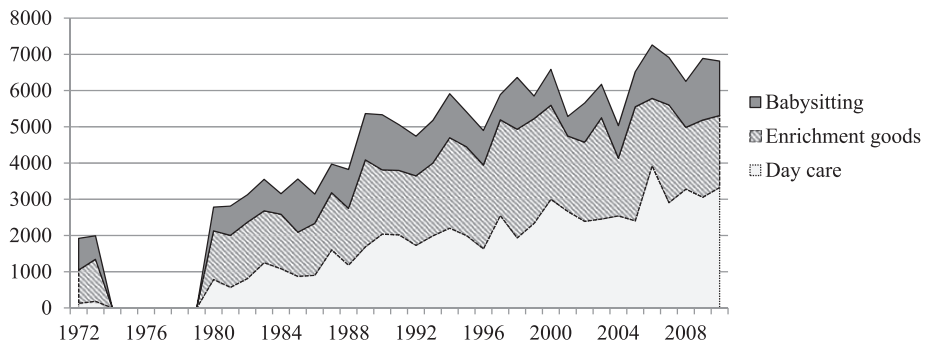FIGURE 1. *Spending on children by income decile.*

FIGURE 2. *Components of 90-10 spending gap per child.*

TABLE 1

Characteristics of Households in the Bottom and Top Income Deciles

Characteristic	1972–1973		2008–2010	
	Bottom decile	Top decile	Bottom decile	Top decile
Income (US$)	12,145	124,246	8,495	206,464
Two-parent family	41.7	99.2	30.2	93.9
Single father	1.5	0.3	2.3	0.8
Single mother	54.2	0.5	44.9	0.4
Other family	2.6	0	22.6	4.7
Wife's work hours	12.3	15.9	15.7	29.5
Husband's work hours (where present)	32.3	39.7	27.8	46.5
Education				
No high school degree	56.8	11.0	37.6	1.7
High school graduate	34.8	20.2	28.2	8.0
Some college	5.6	18.4	26.0	18.4
College and greater	2.8	50.4	8.2	71.8

identified as babysitters or home care workers declined from roughly 500,000 in 1970 to about 250,000 in 1980, but the number of non-home-based child care workers increased from about 230,000 to nearly 1 million.

It is useful to compare shifts in spending to estimates of change in the income-based achievement gap among young children. Reardon (2011) shows that the income-based achievement gap increased from the 1970s until roughly 2000, largely because of increased achievement among those at the top of the income distribution. Yet between 1998 and 2010, income-based achievement gaps declined slightly but significantly (Reardon & Portilla, 2015). Although it is suggestive at best, trends in spending on enrichment goods seem to match these patterns slightly better than those on day care, as the gap in spending on enrichment goods increases until near the late 1990s and then appears to decline or at least remain steady, whereas spending on day care continues to increase. Obviously, other factors, such as shifts in parenting styles, family structure, or parental education, could also account for shifts in test scores. Nonetheless, these data on trends in spending gaps are useful for understanding how young children's environments have changed over time and across the income distribution.

To understand why the gap in spending increases, I examine sources of change in the spending patterns of those at the bottom and top of the income distribution. First, I highlight differences between the characteristics of high-income and low-income households in the sample. Table 1 shows snapshots of household characteristics from the bottom quintile and top decile of the income distribution in the early 1970s and late 2000s.

The two groups have very different characteristics. First, income differences between the top decile and the bottom quintile are high and have increased over time. For those in the bottom quintile, average incomes were around $19,000 in the early 1970s, and declined to roughly $10,000 by the late 2000s. In contrast, top incomes increased by nearly $60,000. Family structure differences are also striking. In both periods, nearly all households in the top decile of earners are two-parent families. For households in the bottom decile, two-parent families were rare, at 52% in the early 1970s, and became rarer, at 37% in the 2000s. The number of single-mother families increased only slightly among households in the bottom decile. There was a larger increase in families that did not fit into standard classifications but instead fell into the *other* category, which includes households with other nonspouse adults living in the household. This could include cohabiting partners but also adult children living with their parents or other household arrangements, such as roommates.

Finally, rich households today are more likely than in the past to have college degrees or higher. Low-income households also have higher completed levels of education, although they are still unlikely to have completed college degrees. Thus, the average characteristics of low-income households with young children are more different from high-income households with young children today than in the past. It is worthwhile emphasizing the sharp contrasts in income, household structure, and a range of other household characteristics across the income distribution.

Changes in high-income parents' characteristics are suggestive of reasons they increased spending. Decomposition analysis allows a more precise estimate of the importance of different characteristics. Results from decomposition analyses are presented in Tables 2 and 3 for households in the top decile and the bottom quintile of the income distribution.

TABLE 2

Effects of Changing Characteristics on Changing Spending in the Top Decile of Earners, 1972 to 2010

Parameter	Coefficient	Mean, 1972–1973	Mean, 2008–2010	Change due to change in means	Percentage of spending difference ($3,820)	Rank
Intercept	–2067.11					
Age of youngest child	1598.58	2.48	2.43	–88.21	–0.75 (combined)	13
Age of youngest child squared	–227.44	9.12	8.85	59.42		
Household income (in 1,000s)	22.92	124.25	181.02	1300.92	34.06	1
Percentage of earnings from wife	2189.31	0.10	0.31	458.61	12.01	2
Wife works part-time	1361.45	0.27	0.32	68.11	1.78	6
Wife works full-time	1633.50	0.17	0.32	245.59	6.43	5
Reference person attended some college	–252.55	0.18	0.22	–8.55	–0.22	10
Reference person is college graduate	1578.20	0.50	0.70	303.65	7.95	3
Single-mother household	1977.05	0.01	0.01	3.06	0.08	9
Single-father household	2397.35	0.00	0.01	13.72	0.36	7
Other household	–215.31	0.00	0.06	–13.76	–0.36	11
Mixed gender of children	–224.13	0.20	0.28	–19.08	–0.50	12
Children only girls	–50.23	0.60	0.47	6.47	0.17	8
Number of children in home	–318.52	2.95	2.17	246.94	6.46	4
Total explained					67.46	
Unexplained					32.54	

These decomposition analyses show only the effects of changes in average group characteristics. They do so by estimating the change that would occur based on a regression coefficient estimated using pooled data from 1972 to 2010. I do so since the effects of changes in household characteristics are of greatest interest.

Table 2 shows coefficients for a regression estimated within the top decile of households for all years from 1972 to 2010, followed by the group mean for various characteristics in the early 1970s and 2010. I then show the change attributable to a change in the mean of these variables and the portion of the overall changes in spending attributable to each characteristic. As Table 2 shows, the most important change in the characteristics of high-income households has been in levels of household income. The increase of nearly $60,000 between the 1970s and the late 2000s is predicted to increase spending by $1,300 over this time period, which accounts for 34% of the total increase in spending, which was $3,820. The second largest shift comes from the increase in the share of earnings that comes from the wife, which increases from near 10% to roughly 31% of household income and accounts for near 12% of the increase in spending. Three remaining variables explain around 6% or 7% each of the increase in spending: increase in wife's full-time work, college completion, and decreases in the number of children in the home. The remaining variables contribute only negligible amounts to the increasing gap. A substantial portion of the increase—nearly one third—remains unexplained by the variables in this model. One possible interpretation of increases in spending beyond those explained by composition is that norms surrounding spending caused similar households to spend more. This may reflect changes in beliefs about the value of early childhood education or the importance and availability of enrichment goods. Of course, as with all regression analyses, these figures represent associations rather than causal estimations, and so the decomposition analysis can only suggest which changes in independent variables are associated with changes in spending.

The decomposition for households in the bottom quintile of the income distribution, in Table 3, shows substantial differences. First, the total change in spending to be explained is much lower: Spending increased only $152 between 1972 to 1973 and 2008 to 2010 for households in the bottom quintile. Several variables predict substantial proportions of this change: wife's increased share of earnings predict a roughly $140 increase; increases in wife's education predict an additional $130, combining the increases due to attending some college and completing college; and declines in the number of children predict an increase of roughly $35. These variables predict increases greater than the actual increase in spending among this group. This occurs in part because several changes lowered

TABLE 3

Effects of Changing Characteristics on Changing Spending in the Bottom Quintile of Earners, 1972 to 2010

Parameter	Coefficient	Mean, 1972–1973	Mean, 2008–2010	Change due to change in means	Percentage of spending difference ($152)	Rank
Intercept	351.08					
Age of youngest child	178.36	1.91	2.09	32.90	12.52 (combined)	5
Age of youngest child squared	−18.70	6.38	7.12	−13.83		
Household income (in 1000s)	5.07	18.74	10.01	−44.23	−29.02	13
Percentage of earnings from wife	377.23	0.06	0.42	138.28	90.73	1
Wife works part-time	295.08	0.19	0.06	−38.38	−25.18	12
Wife works full-time	676.71	0.01	0.03	8.33	5.46	6
Reference person attended some college	455.21	0.08	0.26	82.87	54.37	2
Reference person is college graduate	1139.54	0.04	0.08	47.79	31.35	3
Single-mother household	−92.14	0.35	0.37	−1.78	−1.17	10
Single-father household	217.63	0.01	0.02	2.50	1.64	7
Other household	−170.18	0.12	0.24	−20.10	−13.19	11
Mixed gender of children	−13.62	0.27	0.26	0.15	0.10	9
Children only girls	−19.08	0.58	0.47	2.02	1.33	8
Number of children in home	−76.70	2.85	2.39	34.99	22.96	4
Total explained					151.90	
Unexplained					−51.90	

spending: Household income drops in this sample, leading to predicted lower spending of $44, and declines in wife's likelihood of working part-time are associated with lower spending. Even with these taken into account, the regression model still overpredicts spending by nearly 50%. This may be attributable to other unexplained increases in demands on households that lower similar households' ability to spend on young children over time.

Tables 2 and 3 show that many of the determinants of spending on young children are similar for rich and poor households: Wife's education, labor force status, and earnings are all positive. Yet the effects are much larger for high-income households. This likely reflects greater income availability, which increases a wife's ability to make choices about how to spend in response to these household characteristics. Overall, the regressions suggest both the direct importance in changing household income for the rich, because it is the single largest predictor of increased spending and because it may make spending choices possible for the highest-income households that lower-income households are not able to make.

Conclusion

The goal of this article was to investigate whether parental investments in children had become more unequal. The article found that inequality across the income distribution in parental spending on young children has grown steadily over the years since the early 1970s, largely because of greater spending by the rich, particularly on enrichment goods and day care. Results from a decomposition analysis suggest that the largest share of change is attributable to increased income at the top of the income distribution, although wife's increased share of income, full-time work, and education are also important determinants.

This article thus extends existing research in two ways. First, it shows that inequality in parental spending on young children increases similarly to parental spending on older children. One key difference is that Kornrich and Furstenberg (2013) find that spending per child increases across the income distribution, whereas this article suggests change primarily in the top two income deciles. Second, it investigates which independent variables are responsible for these increases. Although this article examine household characteristics, changes in context may also be important. Today's parents have more choices for how to

spend on young children. There are specialized Montessori schools, bilingual schools, and other programs focused on athletic, musical, or other skills for young children.

This article began by noting that changes in spending are of interest because they might offer at least a partial explanation for changes in the income-based achievement gap. To the extent that high-income children's test scores at entry to school have increased, and spending on children during early childhood has increased among the same group, there is a plausible link between the two. This may be particularly salient for spending on enrichment goods and services, which began to stagnate or decline at a similar point (the late 1990s), as did high-income children's test scores (Reardon & Portilla, 2015). For lower-income children, whose test scores have not grown as quickly, trends in spending are also roughly flat. Of course, there could be other reasons that children of high-income parents do better now than in the past. Parents appear to be more interested in strategies of concerted cultivation (Lareau, 2003) and also spend more time in direct interaction with their children than they did in the past (Bianchi, 2000; Gauthier, Smeeding, & Furstenberg, 2006). Future research that can attempt to investigate the effects of additional spending on future child outcomes might offer useful insights on some of these issues.

One limitation is that measuring investment through spending may misrepresent investment, since higher spending might not always mean more investment. Two alternatives to spending stand out: Parents might rely on kin care, which may be high quality, and low-income parents may take advantage of subsidized programs, like Head Start, that do not entail spending. For kin and other unpaid care, the evidence above on the use of child care suggests that, on average, high-quality center-based child care will lead to better outcomes. In the case of subsidized programs, although it is not the main focus of this article, increases in the percentage of low-income young children in these programs might explain why there is little increase in spending. Indeed, the size of Head Start has expanded, from 379,000 spots in 1972 and 1973 to slightly over 900,000 spots in 2008 through 2010, and this has expanded coverage from roughly 10% of children under age 6 in the early years to near 15% of children in this age group in recent years. If these programs offer the same high-quality care as those that high-income children attend, then increased high-income spending on child care would obviously offer little leverage for understanding increasing test scores for high-income children. Whether the quality of public and private programs has remained similar over time is another important area for investigation.

Appendix

Codes for Expenditures Included in Home Enrichment Spending

290420 Infants' furniture
320130 Infants' equipment
590211 Magazine subscriptions
590212 Magazines, nonsubscription
590220 Books through book clubs
590230 Books not through book clubs
600210 Ping-Pong, pool tables, other similar recreation room items, general sports equipment, and health and exercise equipment
600310 Bicycles
600410 Camping equipment
600420 Hunting and fishing equipment
600430 Winter sports equipment
600901 Water sports equipment
600902 Other sports equipment
610110 Toys, games, hobbies, tricycles, and battery-powered riders
610120 Playground equipment
610130 Musical instruments, supplies, and accessories
620211 Admission fees for entertainment activities, including movie, theater, concert, opera, or other musical series (single admissions and season tickets)
620221 Admission fees to sporting events (single admissions and season tickets)
620310 Fees for recreational lessons or other instructions
660310 Encyclopedia and other sets of reference books
690111 Computers, computer systems, and related hardware for nonbusiness use
690112 Computer software and accessories for nonbusiness use

Acknowledgments

Note

1. The Consumer Price Index Research Series is a new Consumer Price Index series incorporating methodological improvements, such as the use of rental equivalence for homeowner costs and quality adjustments for prices (Stewart & Reed, 1999).

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