

Income Inequality and Class Divides in Parental Investments

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Abstract

Historic increases in income inequality have coincided with widening class divides in parental investments of money and time in children. These widening class gaps are significant because parental investment is one pathway by which advantage is transmitted across generations. Using over three decades of micro-data from the Consumer Expenditure Survey and the American Heritage Time Use Survey linked to state-year measures of income inequality, we test the relationship between income inequality and class gaps in parental investment. We find robust evidence of wider class gaps in parental financial investments in children—but not parental time investments in children—when state-level income inequality is higher. We explore mechanisms that may drive the relationship between rising income inequality and widening class gaps in parental financial investments in children. This relationship is partially explained by the increasing concentration of income at the top of the income distribution in state-years with higher inequality, which gives higher-earning households more money to spend on financial investments in children. In addition, we find evidence for contextual effects of higher income inequality that reshape parental preferences toward financial investment in children differentially by class.

Keywords

family, inequality, parenting

The past 40 years have witnessed historic increases in income inequality in the United States (Piketty and Saez 2003). Over the same period, existing class divides—by household income and by parents' educational attainment—in how much money parents spend on children and how much time parents spend in childcare have widened considerably (Altintas 2016; Kornrich and Furstenberg 2013; Ramey and Ramey 2010). These increasingly evident class divides in parental investments of time and money spark concern, because parental investment is an important factor in the intergenerational perpetuation of advantage (Downey, von Hippel, and Broh 2004; Potter and Roksa

2013; Waldfogel and Washbrook 2011). If affluent families are increasingly able to transmit their advantages to children, that bodes poorly for an open opportunity structure.

Many scholars have observed the correspondence in the timing of these two trends

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and have suggested that the rise in income inequality may be implicated in the growing class divide in parental investment (Duncan and Murnane 2011; Kalil 2014; Kaushal, Magnuson, and Waldfogel 2011; Kornrich and Furstenberg 2013; Park et al. 2016). However, researchers have yet to actually test the empirical relationship between income inequality and class gaps in parental investment, or to investigate the pathways by which any such relationship might be brought about. We would expect rising income inequality to increase class gaps in parental financial investments in children mechanically if rising income inequality simply means the affluent have more to spend. But, rising income inequality might also widen class gaps in investments in children if it reshapes parents' preferences for these practices differentially by class.

It is also possible that income inequality is not related to class gaps in parental investment. Indeed, recent work suggests a narrowing of gaps in early achievement by family income, and a narrowing or arrested divergence in some gaps in parenting practices, even as income inequality has continued to rise, raising questions about this often assumed empirical relationship (Kalil et al. 2016; Reardon 2011; Reardon and Portilla 2016).

We empirically investigate these questions. First, we merge 35 years of detailed micro-data from the Consumer Expenditure Survey (CEX) on parental expenditures on children with state-level annual measures of income inequality from the IRS and Census. Using a set of regression models with state and year fixed effects, we show that the gaps by family income in financial investment in children are wider when state-level income inequality is higher. Any such inequality effects could derive from the concentration of income among high-income households such that they had more to spend, or from contextual effects of income inequality on parents' decision-making about allocations of money. We develop and conduct a set of tests to adjudicate between these mechanisms, and we find evidence that this gap is the result of both

the mechanical concentration of income and changing parental preferences.

Simply having more income to spend would not necessarily lead to wider class gaps in parental investments of time in children, but the contextual effects of income inequality on decision-making and preferences certainly could. However, increasing work hours and time pressure on high-socioeconomic-status (SES) parents could also constrain any widening of these gaps. We draw on the American Heritage Time Use Survey (AHTUS) to examine how income inequality is related to class gaps in parental investments of time. We do not find robust evidence that high-income or highly educated parents increased or decreased their time investments in children in response to rising income inequality.

PARENTING AND CHILD WELL-BEING

Social scientists have long been concerned with how contextual factors shape economic and social attainment and mobility. Institutions of higher education, the labor market, and the criminal justice system powerfully bear on these processes, but early life conditions and contexts also appear to be enormously consequential (Heckman 2006). Children's environments are a product of the neighborhoods they live in, the schools they attend, and crucially, the families in which they grow up (Bronfenbrenner 1979; Duncan and Murnane 2011; McLanahan 2004).

A large body of research documents how parenting practices—time and money spent—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 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). These dynamics are evident in U.S. data, and also in samples from Denmark (Thomsen 2015), Australia

(Fiorini and Keane 2014), and the United Kingdom (Del Bono et al. 2014). Much of this research is observational, but Price (2010) and Villena-Roldan and Rios-Aguilar (2012) instrument for parental time and find positive effects on children's cognitive test scores. Additionally, indirect but quite convincing evidence for the importance of home settings on class gaps in achievement is also found in the seasonal learning literature, which shows class gaps in achievement widen most over the summer months (Alexander, Entwisle, and Olson 2007; Downey et al. 2004).

Furthermore, these effects appear to be substantively important. For instance, decomposing income-related gaps in achievement scores at kindergarten entry, Waldfogel and Washbrook (2011) find that parenting style and home learning environment are together more important than maternal education in explaining income-related gaps in scores on language, math, and literacy assessments.

CLASS DIVIDES IN PARENTS' INVESTMENTS OF MONEY AND TIME

Existing research also documents stark class differences in parenting practices. Examining parental investments of money and time along the axes of education and income shows clear stratification. There are substantial differences in parents' expenditures on children by parents' income group (Kaushal et al. 2011; Kornrich and Furstenberg 2013). For example, Kornrich and Furstenberg (2013) find that parents in the top decile of earners spent five times what parents at the median household income spent on children from 2006 to 2007—\$11,000 compared to \$2,220. One manifestation of these class divides is parents' expenditures on extracurricular enrichment through the "shadow education system" (Bray 1999; Park et al. 2016). For instance, children from higher-income families are much more likely to use paid private SAT preparation courses or tutors than are lower-income children (Buchmann, Condrón, and Roscigno 2010).

That higher-income households spend more on children is not surprising. Notably, however, these class gaps in parental investment appear to be widening over time. Using CEX data over 40 years, Kornrich and Furstenberg (2013) find that the gap in expenditures on children under age 25 between parents in the top 20 percent of families by income and those making less widened in the 1990s and 2000s. This widening gap appears to be the product of increases in spending by households in the top two income deciles. Some of that increase may be driven by rising college costs. But, in recent work, Kornrich (2016) finds a similar widening gap in expenditures among households with children under age 6 from 1980 to 2010, driven by the top 10 percent of households by income.

Parental time investments in children are also strongly patterned by socioeconomic status (Bianchi et al. 2004; Phillips 2011), with more educated parents and higher-income parents (Guryan, Hurst, and Kearny 2008) spending more time in childcare, and more educated parents more effectively targeting age-appropriate developmental care to children (Kalil, Ryan, and Corey 2012).

There also appear to be widening gaps by class in parental investments of time. Charting childcare time, Ramey and Ramey (2010) find that the gap between college-educated and less educated mothers widened substantially after the mid-1990s. These increases appear most pronounced for time in teaching and activities (Ramey and Ramey 2010) and for time mothers spend with children under age 5 (Hurst 2010; Sacks and Stevenson 2010). Extending the time series, Altintas (2016) finds that the gap in time spent in developmental childcare between college-educated mothers of young children and mothers who had no more than a high school degree grew significantly from the mid-1970s through 2013, with wide gaps emerging from 2003 to 2013. However, the trends in class gaps in parental investment in children are not without nuance. Research harmonizing multiple datasets (including NLSY-CS, PSID-CDS, and ECLS) finds widening class gaps in

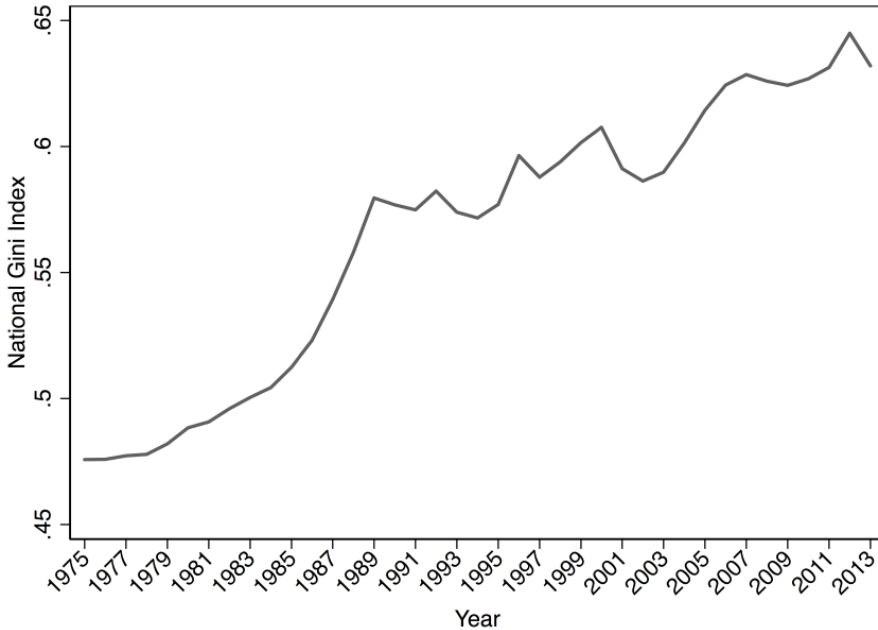


Figure 1. National Gini by Year (1975 to 2013)

formal childcare and book ownership (Bassok et al. 2016), as well as in daily reading; frequent teaching of letters, words, or numbers; frequent storytelling; and going to the zoo, a museum, or a play or concert (Kalil et al. 2016), but narrowing gaps in computer use; learning activities at home; out-of-home activities (Bassok et al. 2016); and library visits (Kalil et al. 2016), with some suggestion that class gaps stopped increasing by 2005 or 2007 (Kalil et al. 2016).

A BACKDROP OF RISING INCOME INEQUALITY

It is difficult to overlook the fact that these generally widening class gaps in parental investment have played out over exactly the same decades during which income inequality has increased dramatically. Figure 1 presents the large increase in national income inequality from 1975 to 2013 (the time period examined in our empirical analysis) as captured by the Gini index. Indeed, scholars have noted this correspondence and alluded to the possibility of a causal relationship between income inequality and widening class gaps in parental

investment (Duncan and Murnane 2011; Kalil 2014; Kaushal et al. 2011; Kornrich and Furstenberg 2013; Park et al. 2016). Rising income inequality could cause wider gaps in parental investments of money and time by increasing the amount of disposable income available to high-income households to spend or by changing high- or low-SES parents' decision-making about their allocations of money and time. Yet, even as income inequality has continued to rise through to the present, there is some evidence that class gaps in certain parenting behaviors have stopped widening (Bassok et al. 2016; Kalil et al. 2016), and recent work suggests a narrowing of the class gap in math and reading scores at kindergarten entry between 1998 and 2010 (Reardon 2011; Reardon and Portilla 2016).

We thus cannot assume that rising income inequality is responsible for widening class gaps in parental investment in children. Yet, no research has actually examined the empirical relationship between income inequality and class gaps in parental investment. Furthermore, research on the effects of aggregate income inequality on health and well-being should lead us to be cautious about connecting

inequality and class divides in parenting. A great deal of research shows that income inequality is associated with worse social outcomes (e.g., Wilkinson and Pickett 2009), but other scholars caution that this work may suffer from problems of omitted variables bias. These researchers have suggested more robust analysis strategies that rely less on cross-national, cross-sectional comparisons and more on within-state over-time changes in income inequality (Deaton and Lubotsky 2003; Evans, Hout, and Mayer 2004; Kenworthy and McCall 2008), with particular attention to how income inequality may widen class gaps or disparities in important behaviors (Neckerman and Torche 2007; Truesdale and Jencks 2016).

This research notes the possibility that state-level income inequality could be connected to class divides in parenting. However, we are aware of only one study that has attempted a more rigorous identification of the contextual effects of income inequality on class divides in human capital development, although this study focuses on educational attainment rather than parenting. Mayer (2001) uses data from the Panel Study of Income Dynamics (PSID) merged with state-level data on income inequality to show that income inequality widens the class gap in attainment by both increasing the attainment of high-income children and reducing that of low-income children.

We thus expect, all else being equal, to see an empirical relationship between state-level income inequality and class divides in parental financial investments in children:

Hypothesis 1: The gap between high- and lower-income-rank households in parental financial investments in children will be wider when state-level income inequality is higher.

MECHANISMS CONNECTING INCOME INEQUALITY AND PARENTAL INVESTMENT

Evidence of a relationship between income inequality and class gaps in parental investment would naturally raise the question of what

mechanisms might underlie such a relationship. In the broader literature on inequality effects, scholars have outlined a set of likely mechanisms by which income inequality might affect social outcomes (Evans et al. 2004). Two general classes of these mechanisms could explain a relationship between income inequality and the class gap in parental investment—rising income effects and contextual effects. We also discuss a third type of intermediary process that could affect parental time with children—the scarcity of time.

Rising Income Effect

One pathway by which inequality could shape class divides in parental investment is through rising income for the highest-SES families. Rising inequality concentrates income among the highest earners, which means they simply have more to spend generally, including on children (Kornrich and Furstenberg 2013). This pathway is akin to what Evans and colleagues (2004) term the mechanical consequence of income inequality.

Higher-income-rank households might then increase spending across the board, including on investments in children. Such a rising income effect would likely be most pronounced for parental financial investments in children rather than investments of time. Could this aspect of rising income inequality explain rising class gaps in parental financial investments in children? Although Mayer (2001) finds little evidence that higher household income explains the relationship between state-level income inequality and class gaps in educational attainment, Kornrich (2016) decomposes the increase in expenditures on children from 1980 to 2010 within the top income decile and shows that a third of the increase is due to higher incomes within the decile. That this effect could be mechanical is not to discount it. If rising income inequality means affluent households have still more money to spend, and they spend it in ways that widen the gap in parental financial investments in children, that is notable and important.

If rising income for high-income-rank households partially or fully explains a relationship

between state-level income inequality and widening class gaps in parental investments, then we would expect that simply controlling for household income would attenuate or eliminate any significant interaction of state-level income inequality and household income-rank for high-income-rank households.

Hypothesis 2: The gap between high- and lower-income-rank households in parental financial investments in children will be wider when state-level income inequality is higher, but this gap will significantly attenuate or disappear after controlling for household income in dollars.

We expect that the interaction of household income-rank and state-level income inequality predicts parental financial investments in children (Hypothesis 1). But, the implication of the rising income pathway is that higher-income-rank households are simply spending more in general, including on children. If true, then we should see a similar interaction between income-rank and inequality in predicting expenditures on other goods. We construct a conservative test of this proposition, and we test if that interaction also predicts parental expenditures on consumption goods for children. Specifically, we contrast our key measure—parental expenditures on childcare, lessons, and schooling—with parental expenditures on children’s clothing and furniture. If rising income is the main pathway, then we would expect the following:

Hypothesis 3: The gap between high- and lower-income-rank households in parental expenditures on children’s consumption goods will also be wider when state-level income inequality is higher.

Contextual Effects on Parents’ Preferences

A second pathway by which income inequality might shape class gaps in parental financial investments in children is through changes in attitudes, beliefs, expectations, or culture. Here, income inequality shapes class gaps not because of the mechanical

concentration of income, but rather through “contextual effects” on how parents think about the world (Evans et al. 2004; Neckerman and Torche 2007). There are good reasons to suspect that rising income inequality may have reshaped parents’ calculus and that this process may have played out differently by class. Furthermore, unlike the rising income mechanism, the contextual effects of income inequality might widen class gaps in parental investments of both money and time.

One of the major causes of increasing inequality in the United States has been the polarization of the labor force. Employment growth since 1979 has been highest in jobs that require relatively high levels of skill and pay high wages, and in jobs that require relatively low levels of skill and pay low wages, while growth in jobs in the middle of the skill and wage distribution has been negative (Autor 2010). This polarization has led to an increase in the wage premium paid to college-educated workers (Goldin and Katz 2010). The strengthening of the link between education and wages could have led parents to prioritize enrichment activities that may better prepare children for success in college and the workforce.

More specifically, rising income inequality and a building sense of a winner-take-all economy (Hacker and Pierson 2010; Lin 2015) may have heightened anxiety among high-SES parents about their ability to transmit their socioeconomic advantages to their children, which in turn may have led to disproportionate increases in investments in their children. In interviews with Silicon Valley parents, Cooper (2014) finds that upper-class parents frequently report concerns that increasing economic polarization will make it more difficult for their children to have meaningful, well-paying careers unless they obtain high levels of education, preferably at elite institutions. This anxiety could lead upper-class families to increase their investments in children to prepare them for increasingly competitive admissions processes, as hypothesized by Ramey and Ramey (2010). In contrast, middle- and lower-class parents interviewed by Cooper (2014) reported little concern about

any potential effects of increasing income inequality on their children. If rising inequality creates class gaps in parental anxiety about their children's future socioeconomic status, this could lead to increases in the class gap in parental investments in children.¹

Such anxieties and preferences could be magnified by playing out in a time when residential segregation by income has been sharply increasing (Reardon and Bischoff 2011). This increase in residential segregation has been particularly steep among families with children (Owens 2016) and has consequences for the income segregation of schools and districts (Owens, Reardon, and Jencks 2016). High-SES parents are increasingly surrounded by like-minded peers, which might intensify their motivation to invest in their children (Blalock 1984).

Empirical evidence supports the idea that some parents engage in a style of parenting that prioritizes the careful creation of cultural and human capital in young children out of concern with increasing inequality in the market. Ethnographic research shows that high-SES parents connect their intensive parenting with their desire to increase their children's chances of attending a selective college and achieving occupational success in an increasingly competitive world (Lareau 2002; Levey Friedman 2013). Among high-SES parents, the rise of parenting practices geared toward the cultivation of children's talents—what Lareau (2002) calls “concerted cultivation”—reflects changing parental preferences for childrearing. These behaviors also appear to have effects on child development and achievement (Bodovski and Farkas 2008; Cheadle 2008; Greeman et al. 2011) and to account for class gaps in achievement (Cheadle 2009; Potter and Roksa 2013).

The rising income pathway suggests that inequality widens class gaps by increasing the spending power of high-income-rank households, whereas the contextual effects pathway suggests that inequality widens class gaps by differentially changing parents' preferences for investment in children. We test this idea by taking the percentage of income spent on investment in children as the dependent variable and assessing if class gaps in the

proportional allocation of income to investment widen with income inequality. We control for household income in dollars to isolate the contextual effect of increased inequality from any luxury good dynamics in which the preference for investment spending increases with income. If the contextual effect pathway matters, then we would expect the following:

Hypothesis 4: After controlling for household income, the gap between high- and lower-income-rank households in financial investments in children as a share of income will be wider when state-level income inequality is higher.

So far, we have focused on the relationship between income inequality and parental household income-rank. Although the literature on class gaps in parental financial investments in children almost always operationalizes class in terms of parental income, the contextual effects pathway would lead us to expect that parental investments might also be shaped by the interaction of income inequality and parental education.² Educational attainment is an important predictor of parental investment in children, with parents with more education more likely to invest in their children's human and social capital (Bianchi and Robinson 1997). Lareau (2002) defines class as a function of parental occupation and finds stark differences in adherence to the “concerted cultivation” versus “natural growth” models of parenting between parents of different occupational levels. Subsequent work, however, has found that parental education is a much stronger predictor of parental investments of money and time in children than is parental occupation or parental income (Cheadle and Amato 2011).

Parental behavior may be shaped by educational attainment because education imparts aspirations for children's educational and career success (Davis-Kean 2005; Sewell, Haller, and Ohlendorf 1970), which would then drive increased investment in children by parents with more education. If the gap between parents of different educational levels in investments in children is driven by

such aspirations, then it is plausible that this gap would increase with rising income inequality. Increases in income inequality reflect a strengthening of the link between educational attainment and income; parents who hold higher aspirations for their children to achieve upward mobility may therefore increase their investments in children in response to higher inequality.

Hypothesis 5: The gap between households with more and less educated parents in parental financial investments in children will be wider when state-level income inequality is higher.

Furthermore, this relationship should be robust to controlling for household income:

Hypothesis 5a: After controlling for household income, the gap between households with more and less educated parents in parental financial investments in children will be wider when state-level income inequality is higher.

And, if educational attainment and state-level income inequality really interact to shape parental preferences, then we would expect the following:

Hypothesis 5b: After controlling for household income, the gap between households with more and less educated parents in parental financial investments in children as a share of income will be wider when state-level income inequality is higher.

In summary, the “contextual effects pathway” is qualitatively distinct from the “rising income” explanation described earlier. Rather than simply restructuring income such that high-income-rank households have more money to spend (in general and on children), here income inequality reshapes preferences around parental investments in a class-biased manner. Both mechanisms can be understood as expressions of the effect of income inequality on class gaps in parenting, and both may lead to the same increasing stratification in parental investment in children, but the social processes are quite different.

One clear implication of the differences in underlying social processes is that investments of time and of money in children may respond similarly to contextual effects of income inequality, even as they are differentially affected by the rising income effects of income inequality. Just as rising income inequality might change high-SES families’ conceptions of parenting to encourage greater financial investment in children, so too might rising income inequality change high-SES parents’ preferences for spending time performing childcare if parents view such time as investment in children. Based on that logic, we would expect the following:

Hypothesis 6a: The gap between high- and lower-income-rank households in parental investments of time in children will be wider when state-level income inequality is higher.

Because intensive parenting practices are thought to be a function of parents’ educational attainment (Cheadle and Amato 2011), we would also expect the following:

Hypothesis 6b: The gap between households with more and less educated parents in parental investments of time in children will be wider when state-level income inequality is higher.

Scarcity of Time

The contextual effects of income inequality may operate similarly for financial and time investments in children, but class gaps in time investments in children might actually decline with income inequality if the driver of income inequality, and so of income gains for higher-income-rank and highly educated households, is that higher-SES parents are working more. There is good evidence that labor income makes up a large share of the income of top earners (Piketty and Saez 2003), that married couples are increasingly homogamous with respect to socioeconomic status (Mare and Schwartz 2006), and that many high-income-rank households are composed of dual-earners (Pew Research Center 2015). Long work hours have become much more common over

time (Jacobs and Gerson 2004), and the expectation and reality of long work hours are institutionalized in many highly paid managerial and professional occupations (Cha and Weeden 2014; Clarkberg and Moen 2001; Sharone 2004). These work time dynamics accord with the idea of high-SES families increasingly experiencing a subjective sense of “time squeeze” (Schulte 2014), particularly around the interaction of work hours and time with children (Milkie et al. 2004). If income inequality is in part the result of higher-income-rank households working more, those households may spend more dollars on investment in children but spend fewer minutes in childcare themselves.³ This suggests that controlling for time spent in paid work should reveal a wider SES gap in parental time investments in children when state-level income inequality is higher:

Hypothesis 6c: After controlling for parental time in paid work, the gap between high- and lower-income-rank households (and households with more and less educated parents) in parental time investments in children will be wider when state-level income inequality is higher.

Additionally, we might expect parents who spend more money on their children will invest less of their time in children if they are spending money to outsource time spent with children. In general, rising incomes at the top mean higher-income-rank households are better able to hire lower-income workers to perform services. Jencks and colleagues (1972) make this point explicitly, remarking that a defining feature of income inequality is that it enables the rich to hire the labor of the less affluent. In recent work, Schneider and Hastings (2017) find that higher-SES women do less housework than lower-SES women, and the gap in housework time between them is wider in more unequal contexts, a phenomenon they attribute to inequality allowing high-SES women to outsource undesirable housework. For similar outsourcing to occur for parental time investments in children, we would have to assume that parents prefer to substitute external

childcare for their own childcare time. This could occur if increasing inequality makes high-SES parents more likely to outsource time investments in children to developmental experts (e.g., tutors, piano teachers, coaches) who are able to enrich children in a way parents cannot.

In summary, parents’ and children’s time is limited. Parents’ financial investments may expand readily with rising incomes or changing preferences, but their time investments may be constrained by the corresponding rise in either their own work hours or their children’s time spent in expert-guided and paid-for activities. Looking across these three intermediary processes, both rising income and changing preferences should widen class gaps in parental financial investments in children, yet only changing preferences should widen class gaps in time investments on children, and a growing scarcity of time might actually constrain the widening of that class divide.

DATA AND ANALYSIS

We test these hypotheses by leveraging geographic and temporal variation in income inequality within the United States to estimate how class gaps in parents’ investments of time and money are affected by state contexts of inequality. We merge state-level data on income inequality from the IRS and Census at the state-year level with data from the Consumer Expenditure Survey and the American Heritage Time Use Survey. We then use state and year fixed-effects models to estimate if class gaps in parental investments are larger in state-years with higher aggregate income inequality. We begin by describing the Consumer Expenditure Survey data that we use to test most of the hypotheses, and then we briefly describe the American Heritage Time Use Survey data that we use to test Hypotheses 6a, 6b, and 6c.

Data: Consumer Expenditures Study

We use data from the Consumer Expenditure Survey (CEX) from 1980 to 2014 to assess

how class gaps in parents' financial investments in children have changed with rising inequality. The CEX collects information on the expenditures, income, and characteristics of a nationally representative sample of households in the United States. We use data from the interview surveys, which are collected quarterly for each household (technically, a consumer unit) for 12 consecutive months. We organize the data into a household-quarter structure (a household could be present between one and four times in the final dataset).⁴ We limit our sample to households with children where at least one parent is over the age of 24 (to allow for normative age completion of schooling) and neither parent is over the age of 65 (to exclude parents who are retired). In all, we analyze expenditures for children from 221,959 household-quarters.⁵

CEX measures of parental investments. We focus on three forms of parental investments: (1) lessons—fees for recreational lessons and other instruction, (2) schooling—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 (3) childcare—all costs for babysitting, nannies, daycare centers, and nursery schools.⁶

Our primary measure is the total sum of these three categories.⁷ We also create a measure of parental financial investments in children as a share of income, which we use to test Hypotheses 4 and 5b. Finally, we conduct analyses examining each category of expenses separately, which we discuss in the text and are presented in the online supplement.

Other expenditures targeted to children recorded in the CEX include spending on clothes, children's furniture and equipment, toys, books, games, electronic equipment, travel, and sporting goods. These expenses are sometimes considered "enrichment" (e.g., Kaushal et al. 2011; Kornrich 2016) and some, such as toys, books, and games, could reasonably be seen as an investment in children. Other items, such as clothes and furniture, beyond a certain level of necessity, seem more like "consumption" by adults. Given these

considerations, we do not include this class of expense items in our preferred measure. However, we do create a separate measure of parental expenditures on the "consumption goods" of children's clothing and furniture and we examine the relationship between class divides in parental expenditures in these categories to test Hypothesis 3.

CEX measures of parents' income-rank and education. We use the report of household income over the prior 12 months that is obtained in the fourth-quarter interview. If a household did not appear in the last quarter, we use the average income from the quarters we observed. We categorize households into their income group within their state-year of observation. We classify households as falling into the 25th percentile of income and below, the 26th to 75th percentiles, the 76th to 90th percentiles, and above the 90th percentile. Prior work on income and expenditures on children shows a particularly large separation between the expenditures of the top income decile and the remaining groups (Kornrich 2016; Kornrich and Furstenberg 2013), so this measure is designed to capture similar dynamics.

The categorization was done by first estimating incomes for the 25th, 75th, and 90th percentiles of households with children for each state-year using micro-data from the Census (1970 to 2000) and the American Community Survey (2001 to 2014). We used linear interpolation to approximate these percentiles in intercensal years before 2000. Then, for each CEX respondent household's income, we assigned them to the appropriate income group using the percentile cutoffs for their corresponding state and year.⁸

Figure 2 shows trends over time in our measure of household financial investments in children by household income-rank. The gap in parental financial investments in children between households in the top decile of income and households in the lower quartile of income dramatically increased, from less than \$200 per quarter in 1980 to over \$500 per quarter in 2014. This increase is almost entirely due to an increase in investment spending by parents in

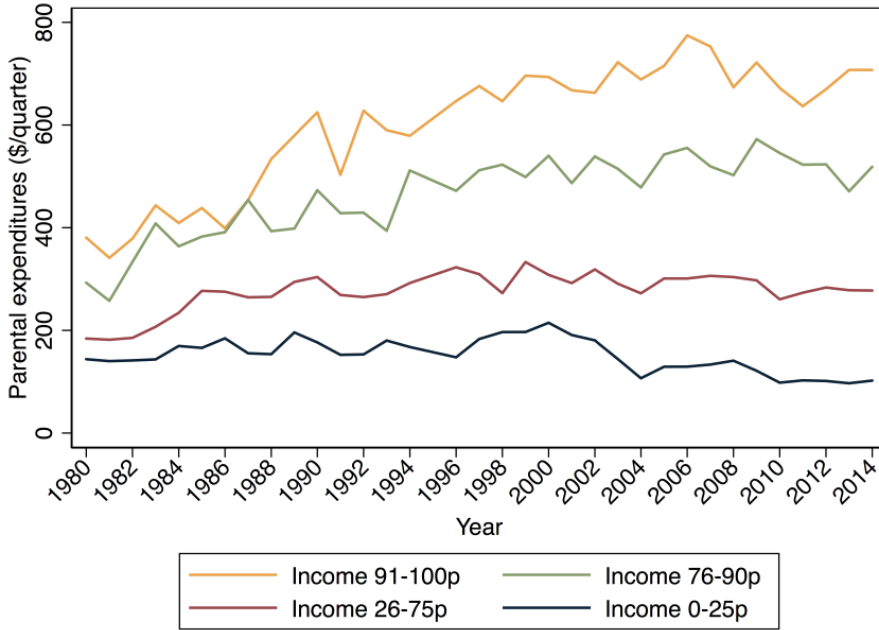


Figure 2. Parental Financial Investments in Children per Quarter by Household Income Percentile Rank
 Note: Dollar values in year-2014 dollars.

top-decile households. This widening income gap in household financial investments in children is consistent with expenditure gaps found in Kornrich and Furstenberg (2013) and Kornrich (2016), and it occurred at the same time as the national increases in income inequality seen in Figure 1.

For Hypothesis 5, 5a, and 5b, we test how class gaps by parental education, rather than household income-rank, may vary by state-level income inequality. We measure the educational attainment of the most highly educated parent in the household. We code this measure as a bachelor’s degree or more, high school or some college, or less than high school.⁹

CEX control variables. We also construct a set of controls: household size, family structure, age of the oldest parent and age-squared, race of each parent with flags for single-parent households, and work hours of each parent. We include the educational attainment of the most highly educated parent in the household as a control in models in which class is defined by income-rank, and we include income-rank as a

control in the models in which class is defined by educational attainment. We also include a measure of annual household income to assess if any effects of income inequality on financial investments in children operate through a rising income effects channel (Hypothesis 2). We also use this measure in the model that interacts education and income inequality (Hypothesis 5a) and as a control in the models estimating how income inequality shapes class gaps in the share of income invested in children (Hypotheses 4 and 5b).

Data: American Heritage Time Use Study

We use data from the American Heritage Time Use Study (AHTUS) to estimate how class divides in parents’ time investments in children are affected by state contexts of inequality. We use data from the 1975, 1994–1995, 1998–2001, and 2003–2014 surveys.¹⁰ Each of these studies assembles a nationally representative sample of households and then collects a comprehensive single-day time

diary from a chosen adult in the household. We combine data from these sources, as harmonized by the Centre for Time Use Research at Oxford and accessed using the AHTUS Extract Builder (Fisher et al. 2015). Dropping cases that are flagged as “low-quality time diaries” or have missing values of variables used in our model leaves an analysis sample of 33,787 mothers and 23,833 fathers between the ages of 25 and 65.

AHTUS measures of parents’ time. We construct our main measure of maternal and paternal time investments in children age 0 to 18 by summing time where the parent diarist reports doing childcare for children living in the household as their primary activity. This includes time in basic care (care of infants, general care of older children, and medical care of children), play, teaching (supervising children, helping with homework, and reading to or talking with children), and management (including coordination of activities and travel relating to childcare).

Although we believe time in which parents are performing childcare as their primary activity is the most developmentally enriching time from the child’s perspective, we also test the robustness of our main measure of parental time investments with several other measures. First, following Kalil and colleagues (2012), we construct measures of time in age-appropriate childcare activities by age of the youngest household child. This measure reflects time in basic childcare and in play for respondents with a child under age 2 in the household, time spent in learning activities for respondents with a child age 3 to 5 in the household, and time spent in management for parents with a child age 6 to 13. Second, we construct expanded measures of parental time that include all time spent in the presence of a child under the age of 18 living in one’s own household, although we can only construct this measure for the 2003 to 2014 surveys that are part of the American Time Use Survey (ATUS). Third, we test whether management is fundamentally different than other forms of childcare by creating a measure of primary childcare that excludes management.

Finally, it is possible that by only observing the time investments of one parent, we overlook inequalities in the total time that all parents invest in children. This may be important because rising income inequality is associated with increases in dual-earner households (Pew Research Center 2015), marital homogamy (Torche 2010), and class gaps in family structure (Cherlin, Ribar, and Yasutake 2016; Martin 2006), all of which may affect class gaps in total parental investments of time received by children. Although we only have reports from a single diarist in each household, we estimate total parental time investments received by household children by using matching to construct synthetic parental dyads. Our method is explained in greater detail in Part A of the online supplement.

AHTUS measures of parents’ income-rank and education. The data on household income and parental education is more limited in the AHTUS than in the CEX. Because the AHTUS surveys collected income data in categories and used somewhat different categories over time, the harmonized measure of income divides respondents into income quartiles. In the CEX, we are able to isolate respondents above the 90th percentile by income, but in the time diary data we are limited to the 75th percentile and cannot include a control for dollars of household income (which is less important than in the expenditure models, because rising income effects are less likely to play a central role for parental time).¹¹ Furthermore, the CEX differentiates between associate degrees and bachelor’s degrees in measuring educational attainment, but the AHTUS does not. We code the educational attainment of diarists in the AHTUS as having an associate degree or more, high school or some college, or less than high school. Figure 3 shows trends over time in the AHTUS in maternal and paternal investments of time in children by household income-rank. In 1975 to 1976, there was no apparent class gap in maternal investments of time; by 1994 to 1995, mothers in households in the top income quartile reported investing more time in children than did other mothers. The gap in

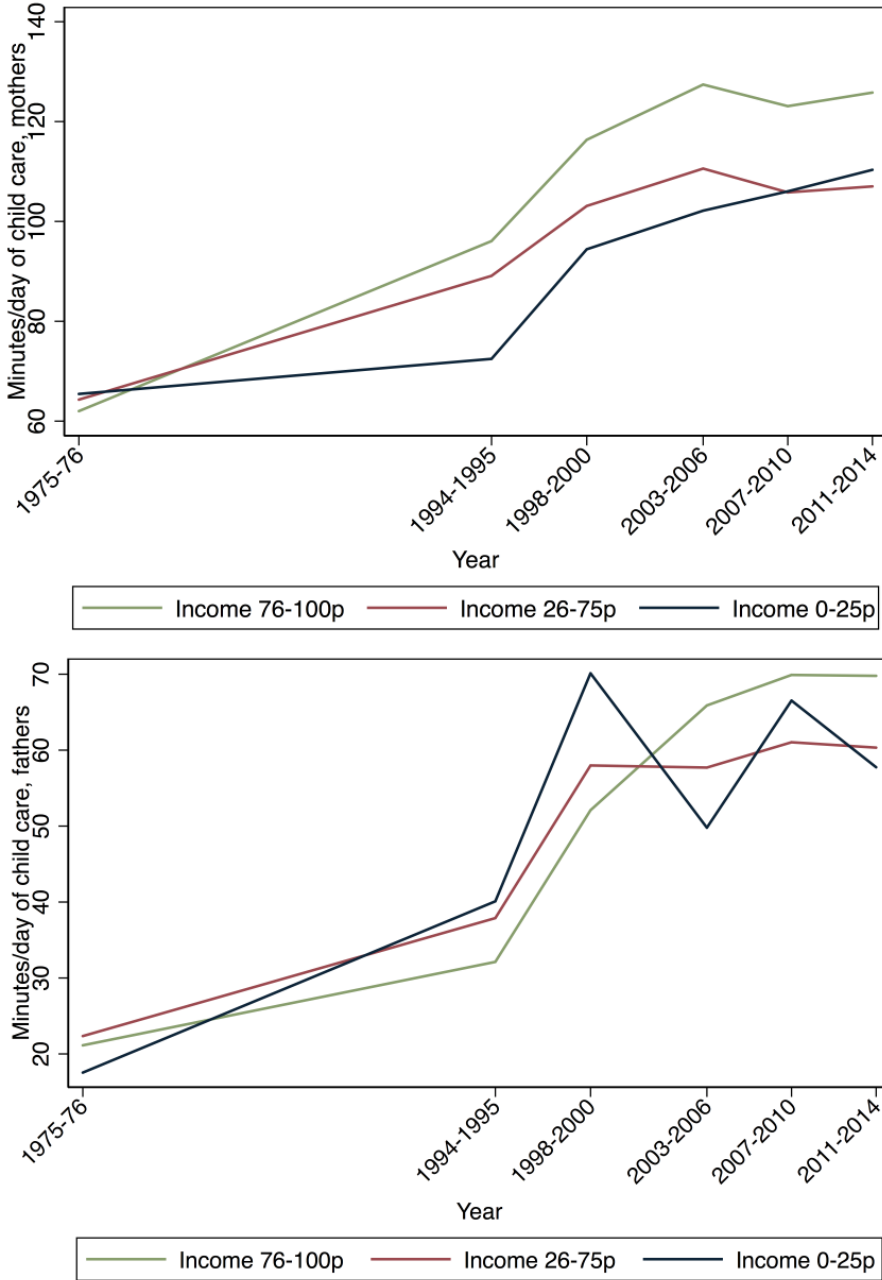


Figure 3. Maternal and Paternal Time Investments in Children by Year

Note: Graphs present average values across each time-use survey used in our models, except with the ATUS grouped into three four-year time spans (2003–06, 2007–2010, 2011–2014) to smooth trends.

maternal investments of time between mothers in households in the top income quartile and other mothers appears largest in the late 1990s and early 2000s, and then slightly narrows in the late 2000s and early 2010s. Since

1975 to 1976, fathers in households in the top income quartile have had larger increases in their time investments in children than fathers in households in lower income quartiles. Until 2000, fathers in the top income quartile

invested less time in their children than did other fathers; since 2003, though, they have invested more time in their children than have other fathers. Overall, there appear to be increases in gaps in parents' time investments between households in the top income quartile versus other quartiles, but these trends are nowhere near as pronounced as the increases in class gaps in parents' financial investments in children.

AHTUS control variables. We also construct controls for family structure (married or cohabiting versus other), number of children in the household under age 18, number of adults in the household, age of the respondent and age-squared, race of the diarist (white versus other), and a flag indicating whether the diary day is a weekend. In addition, we control for time in paid work (both outside and inside the home) in models predicting the effects of income inequality on income-based class gaps in parents' time with children to test whether the relationship between income inequality and increased work hours among high-SES parents affects class gaps in parenting time (Hypothesis 6c).

Data: Income Inequality and State-Level Controls

Each set of micro-data is matched to year-specific state-level measures of income inequality based on the year of interview and the state in which the CEX or AHTUS respondent resides. Two important considerations guide the choice of measure: the level of aggregation and the metric.

There is real ambiguity in the literature on the effects of income inequality with respect to what level of aggregation should be used to measure inequality. Most studies that seek to estimate the effects of income inequality on social outcomes take the nation as the unit of aggregation and then generally make cross-national comparisons. However, there is little theoretical basis for using the nation as the unit of aggregation, and there is a serious risk that other national-level variables confound

any relationship between income inequality and outcomes of interest.

An alternative is to use state-level measures of income inequality. States are appealing because they represent a useful sub-national aggregate that may inform parents' reference groups and purchasing markets. Compared to the nation, states provide more variation in the independent variable and allow for stronger causal inference. Additionally, unlike smaller geographic areas (e.g., counties or MSAs), states' geographic boundaries are consistent over time.

Intuition may suggest that smaller geographic areas might better proxy for the reference groups that drive contextual effects of income inequality, but the empirical literature suggests that income inequality is more weakly associated with many social outcomes at the sub-state level than at larger levels of aggregation (Wilkinson and Pickett 2009). Interestingly, the same holds true for measures of marriage markets—state-level aggregates perform better than smaller aggregations (Brien 1997).

Furthermore, from a purely practical standpoint, there is no consistent sub-state annual time-series data on income inequality. Such measures must be created by interpolating from decennial census data for the years before the ACS. More to the point for this project, no sub-state geographic identifiers are available in the AHTUS or the CEX, either in public or restricted data.

In terms of metric, we focus on the Gini because it assesses inequality across the entire income distribution and is the most commonly used measure of inequality. Our measure of the Gini is constructed using data published in the IRS's Statistics of Income and calculated as a state-year time-series by Frank (2014). Thus, it is a measure of the inequality of Adjusted Gross Income (including wages, salaries, capital income, and entrepreneurial income) of tax filers. In Figure 4, we plot the annual series of state Gini from 1975 to 2013. Although inequality grew in all states, there is considerable variation between different states and within states over time.

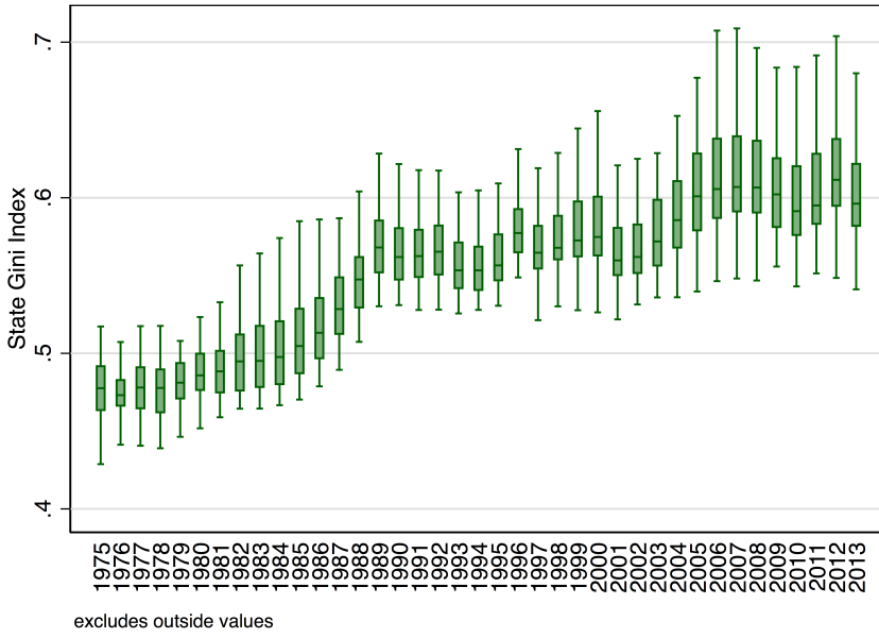


Figure 4. Box Plot of State-Level Gini by Year (1975 to 2013)

As a robustness check, we also re-estimated our models using the top 10 percent income share, top 1 percent income share, Atkinson index, and Theil’s entropy index from the IRS data. A key strength of the IRS data is that it much more accurately accounts for top incomes, which are both top-coded out and susceptible to self-reporting error in the ACS, Census, and CPS, but we also check the robustness of our results to using the Gini constructed by merging the results from the Census and ACS and filling in missing years with linear interpolation. All of these models produced substantively similar results. The full set of models estimated with the top 10 percent income share is shown in Tables 1, 2, and 3 of the online supplement; models with the other inequality metrics are available upon request.

We also include several time-varying state-level independent variables in our models: the unemployment rate and the median income (both lagged one year as with our inequality measure) and the percent black and percent foreign-born. The state-level unemployment rate comes from the Bureau of Labor Statistics, and the remaining measures come from the Census and the ACS.

Analytic Methods

We estimate linear regression models that examine the association between state-level income inequality and class divides in parents’ investments while accounting for other individual- and state-level covariates that may confound this relationship. Formally, consider person i living in state s surveyed in year t . The individual-level regression equation is as follows:

$$\begin{aligned}
 Y_{ist} = & \beta_0 + \beta_1 Inequality_{s,t-1} + \beta_2 Class_{ist} \\
 & + \beta_3 Inequality_{s,t-1} \times Class_{ist} \\
 & + \beta_4 Z + \gamma_s + \theta_t + \epsilon_{ist}.
 \end{aligned}
 \tag{1}$$

In our baseline model, Y_{ist} is the measure of parental financial investments in children (logging this measure produces substantively identical results), $Class_{ist}$ is a categorical measure of household income-rank, and $Inequality_{s,t-1}$ is the lagged state-level Gini coefficient. Z is a vector of individual and state-level controls, and γ_s and θ_t specify full sets of state and year indicators (i.e., two-way fixed effects). All models adjust the standard errors for clustering within states. Following

Table 1. Summary of Key Hypotheses and Measures

Hypothesis	Summary	Y_{ist}	$Class_{ist}$
<i>Test of Relationship between Income Inequality and Class Gaps in Financial Investment in Children</i>			
1	Household income-rank gap in investment \$ wider when inequality higher	\$ Investment in children <18	Household income-rank
<i>Tests of Rising Income Pathway</i>			
2	Less/no widening of household income-rank gap in investment \$ with inequality when control for \$ income	\$ Investment in children <18	Household income-rank
3	Household income-rank gap in consumption \$ wider when inequality higher	\$ Consumption for children <18	Household income-rank
<i>Tests of Contextual Effects Pathway</i>			
4	Widening of household income-rank gap in investment as % of income with inequality, controlling for \$ income	\$ Investment in children <18 as % of income	Household income-rank
5	Gap by parental education in investment \$ wider when inequality higher	\$ Investment in children <18	Parental education
5a	Gap by parental education in investment \$ wider when inequality higher, controlling for \$ income	\$ Investment in children <18	Parental education
5b	Gap by parental education in investment as % of income wider when inequality higher, controlling for \$ income	\$ Investment in children <18 as % of income	Parental education
<i>Tests of Relationship between Income Inequality and Class Gaps in Time Investments in Children</i>			
6a	Household income-rank gap in time with children wider when inequality higher	Investments of time in children	Household income-rank
6b	Gap by parental education in time with children wider when inequality higher	Investments of time in children	Parental education
6c	Widening of household income-rank gap in time with children with inequality when control for time working	Investments of time in children	Household income-rank

Note: Hypotheses 1 through 5b use micro-data from the CEX. Hypotheses 6a, 6b, and 6c use micro-data from the AHTUS. All models measure inequality using the Gini coefficient and include a full set of individual-level and state-level controls in addition to state and year fixed effects.

the advice of Balli and Sorenson (2013) on interaction terms in fixed-effects models, we demean both income inequality and each indicator variable of class before creating the interaction term. In general terms, our analytic approach is similar to that of Mayer (2001), Bloome (2015), and Kearney and Levine (2014).

Given our interest in the class divide in parental investments, our focus is on β_3 , the coefficients of the interaction term between income inequality and the class indicators. As inequality increases, we expect the class divide in parental investment to increase.

Equation 1 describes our empirical test of Hypothesis 1, that gaps in parental financial investments in children will be wider between higher- and lower-income-rank households when state-level income inequality is higher. In Table 1, we note how this equation is modified to test each hypothesis.

RESULTS

Figure 5 plots our measure of household financial investments in children across observed levels of state income inequality by household state-level income-rank for the

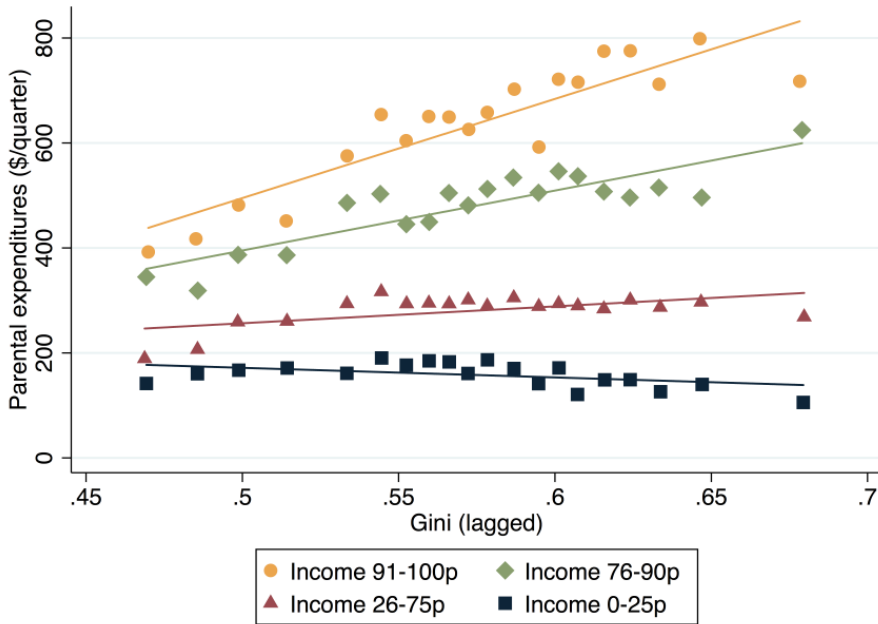


Figure 5. Binned Scatterplot of Household Financial Investments in Children by Household Income Percentile Rank and State-Level Gini

pooled CEX data. The lines plot the relationship between financial investments (the y -axis) and inequality (the x -axis) for different household income-rank groups. The line on the bottom plots financial investments in children for households in the bottom quartile of household incomes; the second line from the bottom plots financial investments for the middle two quartiles of household income. For both of these groups—the bottom 75 percent of households by income—financial investments in children are essentially flat if not declining across increasing levels of income inequality. The top line plots financial investments for households in the top decile of incomes and the line below it for those between the 76th and 90th percentiles. Financial investments in children are slightly upwardly sloping for parents between the 76th and 90th percentiles with inequality. We see a more pronounced upward slope for the top decile of households by income. For these most affluent parents, financial investments in children rise with higher income inequality.

Income Inequality and Class Gaps in Financial Investments in Children

These figures suggest a positive relationship between income inequality and the income gap in household-level financial investments in children, but they do not account for the demographic composition of households, for state-level confounders, or for time. Model 1 of Table 2 presents estimates from our first regression model (Equation 1). This model adjusts for household characteristics and state-level confounders, and it includes state and year fixed effects. The estimates of key interest are the interaction terms between household income-rank and state-level income inequality. All coefficients from the model are reported in Table 4 of the online supplement.

Relative to households in the middle two quartiles of income, those in the top 10 percent of households by income increase their spending on investment in children as income inequality rises ($\beta = 1599, p < .001$). We also find a positive significant coefficient on the

Table 2. Relationship between State-Level Income Inequality and Gaps by Household Income Percentile Rank in Financial Investments in Children (CEX 1980 to 2014)

	(1)	(2)	(3)	(4)
	Main Model of Investment	With Income Control	Model of Consumption	Model of Investment/Income
Gini index × income group 0 to 25p	-608.7*** (74.6)	-562.4*** (73.5)	79.8 (40.1)	-.071*** (.011)
Gini index × income group 26 to 75p	ref.	ref.	ref.	ref.
Gini index × income group 76 to 90p	772.3*** (135.3)	576.5*** (136.8)	-189.3** (54.8)	.012 (.0063)
Gini index × income group 91 to 100p	1599.1*** (218.5)	839.9*** (210.3)	-396.1*** (106.7)	.045*** (.0066)
Gini index	335.7 (167.2)	389.5* (153.1)	21.2 (76.7)	.024* (.012)
Income group 0 to 25p	-74.4*** (4.01)	-11.6* (5.48)	-26.3*** (1.63)	.0096*** (.00069)
Income group 26 to 75p	ref.	ref.	ref.	ref.
Income group 76 to 90p	142.5*** (7.73)	75.1*** (7.20)	38.7*** (2.36)	.00030 (.00039)
Income group 91 to 100p	265.3*** (18.0)	81.3*** (18.1)	92.7*** (6.11)	.0034*** (.00078)
Income dollars (in thousands)		1.25*** (.091)		-.000081*** (.0000057)
Individual controls	Yes	Yes	Yes	Yes
State controls	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	221,959	221,959	221,959	205,571

Note: State-clustered standard errors are in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

interaction between households in the 76th to 90th percentiles of household income and state-level income inequality ($\beta = 772$, $p < .001$). The predicted effect of increased inequality on the gap in parental financial investments between these households and the baseline group is notably smaller than for households in the top income decile. The class divide in investment with inequality extends downward as well. Households in the bottom quartile of income spend significantly less relative to those in the middle quartile as inequality increases ($\beta = -609$, $p < .001$).¹²

To visualize these relationships, Figure 6 plots the predicted financial investments in children from Model 1 for each household income-rank group. Along the x -axis we show

the predicted level of financial investments if a state was two standard deviations (approximately a .1 change of the Gini) below the mean, at the mean, and two standard deviations above the mean in terms of the Gini. Because each indicator of income group is also demeaned at the state level for the fixed-effects model, we predict the level of financial investments at the average state-demeaned level for respondents from each income group. This figure illustrates how the effects are not just statistically significant but are also substantively large. Whatever the level of income inequality, higher-income-rank households spend more than lower-income-rank households. For example, all else being equal, at two standard deviations below the

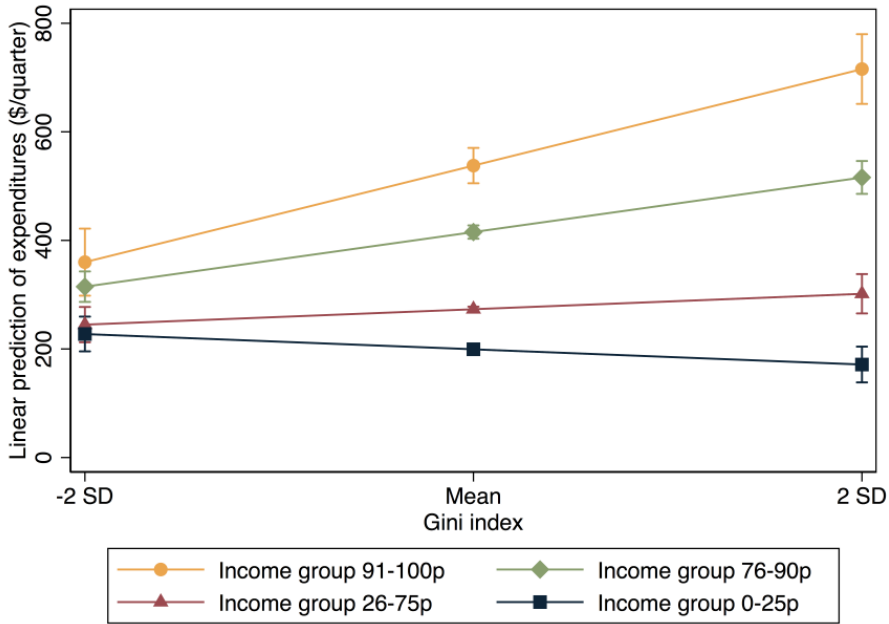


Figure 6. Predicted Household Financial Investments in Children by Household Income Percentile Rank and by State-Level Gini (error bars represent 95 percent confidence intervals)

mean level of inequality, parents in the top decile would spend a little less than \$400 per quarter on investment, on average, compared to about \$300 for the 75th to 90th percentile and about \$200 by parents in the bottom three quartiles. When the Gini is two standard deviations above the mean, parents in the top decile would spend, on average, over \$700, compared to about \$400 for parents in the 75th to 90th percentiles and still roughly \$200 by parents in the bottom three quartiles. This widening gap is not simply between the most affluent and the poorest (although there certainly is a widening gap between those groups). Rather, when state-level income inequality is higher, the highest income households diverge even from those in the 76th to 90th percentiles of household income—who in turn also diverge from the bottom 75 percent. In summary, the evidence for Hypothesis 1 is quite strong. Household income-rank gaps in financial investments in children are wider when income inequality is higher.

Rising Income Effects

This relationship between gaps in parents’ financial investments in children and income inequality could come about through two possible pathways. Income inequality could lead to these increased class divides by concentrating income such that high-income-rank households have more to spend—what we call the rising income pathway—or by changing parents’ preferences or parenting cultures differentially by class—what we call the contextual effects pathway.

We now turn to our tests of the rising income pathway hypotheses in Models 2 and 3 of Table 2. We first discuss how controlling for household income in dollars (Hypothesis 2) affects our results and then examine the relationship between income inequality and income-rank gaps in expenditures on children’s consumption goods (Hypothesis 3).

If the relationship between income inequality and household income-rank gaps in financial investments in children is at least partially

driven by the greater availability of income for those at top ranks, then the key interaction coefficients should significantly attenuate or be reduced to zero after controlling for household income. Model 2 presents the key coefficients after controlling for household income in dollars. We see that the coefficients on the key interactions are attenuated for high-income households—by about 50 percent for households in the top income decile, and by roughly 30 percent for households between the 76th and 90th percentiles of income—but very little for households in the lowest income quartile. Furthermore, there is a statistically significant change between the coefficients in Model 1 and Model 2 of the interaction terms with state-level income inequality for the top two income groups ($p < .05$), but not the interaction term between the bottom income quartile and income inequality.¹³

That this attenuation only occurs for higher-income households makes sense, because the rising income pathway suggests that increased income inequality may increase the income gap in parents' financial investments in children because higher-income households have more money to spend. Furthermore, the interactions of the household income-rank and state-level income inequality remain highly significant and substantively large, suggesting that controlling for household income does not fully explain the relationship between state-level income inequality and class gaps in parents' financial investments in children.¹⁴ We thus find partial support for Hypothesis 2: the rising income pathway partially explains the relationship between state-level income inequality and gaps in parents' financial investments in children.

Model 3 presents the test of Hypothesis 3, which predicts that, if all income inequality effects flow through the rising income pathway, then we should also see a relationship between income inequality and income-rank gaps in expenditures on children's consumption goods—high-rank households have more income and so spend more in general. Model 3 tests this proposition by substituting a measure of expenditures on consumption for

children as our dependent variable. We do not see support for Hypothesis 3. In fact, the coefficients are actually negative and significant for households in the 76th to 90th percentile group and in the top decile of income. Rather than gaps in expenditures on consumption widening with rising income inequality, as we saw for gaps in financial investments, gaps in consumption actually narrow slightly with rising income inequality. These results are more consistent with income inequality specifically affecting parents' investments in children, rather than simply expenditures on children more generally.

Contextual Effects

Model 4 of Table 2 reports the results of our test of Hypothesis 4: if the contextual effects of income inequality lead to widening gaps in parental investment, then we should see evidence of changes in the allocation of income such that high-income-rank households spend a larger *share* of income on investment in children. We would find evidence of this re-allocation to investment if the interaction between household income-rank and state-level inequality was significant in predicting the share of income spent on investment in children. We further control for household income in this model to help rule out the possibility that allocations change nonlinearly with income. In accord with this expectation, in Model 4 the coefficients on the interaction between household income-rank and state-level income inequality all have the same signs as in Model 1. The coefficients are significant for both the top and bottom income groups, and marginally significant in the 76th to 90th percentile group. In short, the gap in the proportion of income spent on investment in children, not just the gap in total amount spent, is wider when state-level income inequality is higher.

These results do not speak directly to how class gaps in allocations of spending on children might shift between consumption and investment goods with rising income inequality. However, based on the (strongly) positive coefficients in Model 1 and the negative

Table 3. Relationship between State-Level Income Inequality and Gaps by Parental Education in Financial Investments in Children (CEX 1980 to 2014)

	(1)	(2)	(3)
	Main Model of Investment	With Income Control	Model of Investment/Income
Gini index x no HS	-333.9*** (80.0)	-259.6** (78.8)	.0060 (.0089)
Gini index x HS no BA	ref.	ref.	ref.
Gini index x BA+	784.2*** (123.8)	572.6*** (115.4)	.016* (.0069)
Gini index	346.0* (158.2)	404.9** (144.9)	.031** (.011)
No HS	-39.6*** (7.17)	-38.5*** (6.70)	-.0082*** (.00040)
HS no BA	ref.	ref.	ref.
BA+	151.7*** (8.27)	144.6*** (7.85)	.0080*** (.00034)
Income dollars (in thousands)		1.36*** (.089)	-.000071*** (.0000056)
Individual controls	Yes	Yes	Yes
State controls	Yes	Yes	Yes
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	221,959	221,959	205,571

Note: State-clustered standard errors are in parentheses.

* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

coefficients in Model 3, it is clear that class gaps in the share of spending on children that goes to investment goods is also widening with income inequality.

Hypotheses 5, 5a, and 5b turn from household income-rank gaps in financial investments in children to gaps by parental educational attainment. These models allow us to test if gaps in financial investments in children by parental education also widen with income inequality. Such widening would be significant evidence for the contextual effects pathway, particularly if such widening appeared in models that also adjust for household income in dollars (Hypothesis 5a) or that take financial investments as a share of income as the dependent variable (Hypothesis 5b). Because parental education and household income are strongly correlated, both of these tests effectively separate out the rising income mechanism that could otherwise explain the relationship

between income inequality and education-based gaps in parental investments in children.

Table 3 presents models that test these hypotheses. In Model 1, the interaction between households in which the most highly educated parent has at least a bachelor's degree (relative to the reference group of households where the most highly educated parent has completed high school but has not received a bachelor's degree) and state-level income inequality is positively and significantly related to parental investment in children ($\beta = 784, p < .001$). Furthermore, the coefficient on the interaction between education and income inequality is negative for households in which the most highly educated parent does not have a high school degree ($\beta = -334, p < .001$). Model 2 includes a control for household income in dollars in an effort to further separate any effects along the pathway of rising income differences from those of the contextual effects of income

inequality. After controlling for household income, there remains a significant and positive relationship between state-level income inequality and wider class gaps (as measured by parental education) in parental investment in children. The coefficients on the interactions between parental education and state-level income inequality do attenuate in Model 2 by roughly 30 percent, a statistically significant difference ($p < .05$). However, the interaction terms in Model 2 remain large and statistically significant, suggesting that the gaps are explained by more than just the increased incomes of more educated households.

Finally, Model 3 of Table 3 takes financial investments in children as a share of household income as the dependent variable. We test Hypothesis 5b by examining whether educational gaps in the allocation of income toward financial investment in children are wider when state-level income inequality is higher. This is in some ways the most rigorous test of the contextual effects pathway. The interaction of having attained at least a bachelor's degree is positive and statistically significant ($\beta = .016$, $p < .05$). Even after controlling for income, highly educated parents allocate a greater share of income toward financial investments in children when state-level income inequality is higher. However, we see no difference between parents with no high school degree and those with a high school degree but no college degree.

We also tested the robustness of these models to coding parental education by taking the education of the least educated parent in the household and by coding the number of parents with a college degree in the household. These results, presented in Tables 5 and 6 in the online supplement, show similar evidence of a widening gap in investment spending with income inequality.

Disaggregation of financial investments in children. Our preferred models take the sum of all financial investments for children of all ages. We also test how the results vary when we disaggregate financial investments into spending on lessons, on schooling, and on childcare. Table 7 in the

online supplement presents these results, showing estimates from Model 1. The association between inequality and class gaps in investment appears across categories. High-income-rank households spend more on childcare when inequality is higher, but they also spend more on school and, importantly, on the lessons that most directly capture the activities of the "shadow education system." These patterns are especially notable for households in the top income decile.

In Table 8 in the online supplement, we use the preferred combined measure of financial investments in children, but disaggregate by age of child. For each age group, we find similar patterns of widening class gaps in investment as inequality increases, although the effects are largest for households with the youngest children, which is consistent with the earlier results, as these families are the primary users of paid childcare. Tables 9, 10, and 11 in the online supplement further disaggregate by the age of child and type of investment. Unsurprisingly, we see strong effects for households with young children in childcare and for older children in expenditures on schooling. We find effects for all ages in lessons. Childcare appears to be the biggest driver of our findings, but even when completely excluding childcare or households with young children, we still find widening class gaps as inequality increases.

Income Inequality and Class Gaps in Time Investments in Children

We now test whether rising income inequality is related to increasing class gaps in parents' time investments in children, as suggested by our final set of hypotheses. This could be so if the contextual effects of inequality change high-SES parents' preferences to invest more time in children, much as they appear to have changed high-SES parents' preferences to spend more money (in absolute and relative terms) on investment goods for their children. On the other hand, any such effects could be offset or outweighed by rising inequality leading high-SES parents to work more or outsource more developmental care.

Table 4. Relationship between State-Level Income Inequality and Class Gaps in Parents' Time Investments in Children (AHTUS 1975 to 2014)

	Mothers				Fathers			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Gini index x income group 0 to 25p	1268.3 (839.4)		1248.3 (764.6)		91.2 (1288.8)		92.1 (1234.5)	
Gini index x income group 26 to 75p	ref.		ref.		ref.		ref.	
Gini index x income group 76 to 100p	-80.8 (760.6)		-131.7 (667.1)		520.9 (688.3)		396.0 (605.2)	
Gini index x no HS		286.6 (1904.4)		644.9 (1877.7)		-728.4 (1094.3)		-578.4 (1072.6)
Gini index x HS no AA		ref.		ref.		ref.		ref.
Gini index x AA+		-291.7 (854.7)		-404.3 (775.0)		-43.1 (687.0)		-238.1 (693.0)
Gini index	1223.7 (698.8)	1220.2 (697.3)	1344.5* (655.2)	1339.8* (654.4)	-33.8 (695.9)	-20.9 (694.4)	16.5 (657.1)	25.9 (655.4)
Income group 0 to 25p	-3.66 (6.58)	-3.12 (6.47)	-12.8 (7.03)	-12.3 (6.87)	-4.64 (6.55)	-4.72 (6.61)	-10.5 (6.99)	-10.5 (7.02)
Income group 26 to 75p	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
Income group 76 to 100p	20.9*** (5.67)	20.9*** (5.57)	20.4*** (5.24)	20.5*** (5.18)	6.76 (4.02)	6.75 (3.96)	9.22** (3.42)	9.15** (3.36)
No HS	-4.33 (8.67)	-4.39 (8.64)	-11.6 (8.50)	-11.7 (8.46)	-4.66 (4.90)	-4.84 (4.91)	-3.52 (4.13)	-3.65 (4.16)
HS no AA	ref.	ref.	ref.	ref.	ref.	ref.	ref.	ref.
AA+	11.7* (5.71)	11.6* (5.67)	15.8** (5.02)	15.7** (5.01)	10.2** (3.62)	10.0** (3.64)	12.2*** (3.45)	12.1** (3.47)
Minutes in paid work			-0.16*** (.0073)	-0.16*** (.0073)			-0.096*** (.011)	-0.096*** (.011)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	33,787	33,787	33,787	33,787	23,833	23,833	23,833	23,833

Note: State-clustered standard errors are in parentheses.
* $p < .05$; ** $p < .01$; *** $p < .001$ (two-tailed tests).

Table 4 presents the results of our tests of Hypotheses 6a, 6b, and 6c from the AHTUS data, for both mothers and fathers. Models 1 and 2 present the coefficients on the interaction of respondent class and state-level inequality for maternal time, where class is operationalized through household income-rank for Model 1 (Hypothesis 6a) and through mother's educational attainment in Model 2 (Hypothesis 6b). Models 3 and 4 build on Models 1 and 2 by controlling for time spent in paid work to test Hypothesis 6c, which predicts that increased work hours for high-SES parents are an important mediator of the relationship between income inequality and

class gaps in parents' time with children. Models 5 through 8 test these same hypotheses for fathers.

Models 1, 2, 5, and 6 show that, for both mothers and fathers and for both measures of class, class gaps in time parents invest in their children are not significantly related to income inequality. Models 3, 4, 7, and 8, which predict the relationship between income inequality and gaps by household income and parental education in parental investments of time after controlling for time parents spend in paid work, show that time in paid work does take away from parents' investments of time in children. But, even

after accounting for paid work, the coefficients corresponding to the interaction between household income-rank and state-level inequality and parental education and state-level inequality are not significant. This suggests that, if income inequality does shape high-SES parents' preferences to invest more time in their children in the same way it shapes preferences to invest more money in their children, these effects may be countered by pressures on high-SES parents to outsource childcare to developmental experts, but not by time pressures introduced by parents' work obligations.

We also test the robustness of these results to focusing only on the ATUS data (2003 to 2014), which have more fine-grained measures of income and education and so permit us to isolate the top decile of households by income as well as by respondents who hold bachelor's degrees. Examining the key interactions for both mothers and fathers shows mixed results (see Table 12 in the online supplement). Coefficients for the interaction between top decile households and state-level income inequality are not significantly different from zero, suggesting that income inequality does not induce parents in the highest-income households to invest significantly more (or less) time in children relative to middle-income households. Mothers with bachelor's degrees, however, appear to invest less time in their children with higher income inequality. We find some suggestive evidence that education-based gaps in parental time investments in children have narrowed with increasing inequality in recent years, but this evidence is not robust and does not match the pattern we observe over the longer time frame.

Alternative measures of time investments in children. We also tested the sensitivity of these results to several alternative constructions of parental time investments. First, we re-estimated the models using time in age-appropriate childcare activities (as defined by Kalil et al. 2012). Second, we re-estimated the models using total time with household children in place of our measure of primary childcare time—here we are limited to using the years covered by the ATUS. Third, we

re-estimated the models excluding time spent in management activities (waiting and travel). These results are presented in Tables 13, 14, and 15 in the online supplement. Across all these models using alternative definitions of parental time investments in children, we find the same pattern of null results: the coefficients are inconsistent in size and sign and only rarely statistically significant.

Finally, although there is no evidence of a relationship between income inequality and class gaps in parental time investment from individual mothers or fathers, such a relationship could still exist if we consider the combined time investments that children receive from all household parents. As described in more detail in Part A of the online supplement, we used matching to construct synthetic couples (either coresident or non-coresident) and then re-estimated how inequality shapes class gaps in total parental childcare time. We report the tests of Hypothesis 6c in Table 16 of the online supplement, using total parental time investments received by household children as the dependent variable. We measure education here as the level of education of the most highly educated parent, and time in work as the average of minutes in paid work of the ego and their matched alter. These results match the pattern of mostly null findings we see in the analysis of ATUS data discussed earlier and presented in Table 12 of the online supplement.

In summary, although we observe a negative relationship between income inequality and education-based gaps in parental investments of time in children in some models, we do not find this relationship when considering the entire span of our data, and this negative relationship is not robust to various model specifications. We also find no evidence for a relationship between income inequality and income-based gaps in parental investments of time in children.

DISCUSSION

In popular discourse, income inequality and relative intergenerational mobility are often conflated. Rising income inequality may make

mobility more salient, but it does not necessarily shape the degree of intergenerational mobility (Beller and Hout 2006). Income inequality could have this effect, however, and a number of scholars have shown a strong association between high income inequality and low mobility in cross-national data—the Great Gatsby Curve (Corak 2013). Some studies show evidence of a similar relationship when comparing between U.S. Commuting Zones (Chetty et al. 2014), but other work suggests no relationship when comparing across states (Bloome 2015).

Our results suggest that income inequality may indeed lay a foundation of unequal investment in children that could manifest in differential adult attainment. We provide evidence of one pathway by which income inequality may ultimately reduce intergenerational mobility—by increasing inequality in parents' investments in children's development. We show that when state-level income inequality is higher, household income-rank gaps in financial investments in children are indeed significantly and substantively wider. By exploiting over-time and between-place variation in income inequality within the United States, we isolate the role of income inequality in driving these class divides from time-invariant unobserved characteristics of places and from period effects as well as a set of time-varying confounders. The gap in financial investments in children between the rich and the rest is wider when income inequality is higher.

Our work does not directly assess if these widening gaps in parental investments ultimately led to less intergenerational mobility. But, the large literature on the beneficial effects of parental investment give us good reason to expect these inequalities in investment are an important link in the chain connecting income inequality and intergenerational mobility. Furthermore, it is plausible that these class gaps in parental investment could lead to greater income inequality in future generations through greater gaps in the human capital of adult children by parents' class. Given that we measure income inequality in our models with a one-year lag, it is unlikely that

we capture the relationship through which class gaps in parental investments could affect income inequality. However, this does not mean such a relationship does not exist, and future research could use data that track individuals from childhood through their prime earning years to test for this relationship.

We next investigated the mechanisms that might explain this relationship between income inequality and class gaps in parental financial investments in children. Perhaps the most natural reason why these gaps would be larger when income inequality is higher is that higher inequality within a state means the rich have more dollars available to spend relative to others. Such effects would be very “real,” even though they are essentially mechanical. Our tests of this “rising income pathway” provide evidence that higher income explains some, but by no means all, of the relationship. The widening of the class gap with income inequality appears even after controlling for household income in dollars. Furthermore, although the gap in spending on investment in children is wider in more unequal state-years, the gap in spending on children's consumption is not. High-income-rank parents are not simply spending more in general, but appear to be targeting their expenditures toward investment in children.

We then tested several hypotheses relating to the “contextual effects” explanation: when state-level income inequality is higher, the preferences or parenting cultures of higher-SES parents might change to prioritize investment in children. High-SES parents may be driven to more and more investment by a sense that increasing inequality makes the stakes ever higher, and thus the situation demands increased investments of time and money in children. This rising anxiety may be magnified by parallel increases in income segregation. Our results suggest that changing parental preferences toward investment in children is an important mechanism connecting inequality and class gaps in investment. First, we find evidence of re-allocations of spending by higher-income-rank households when state-level income inequality is higher. The share of

income spent on investment in children by high-income-rank households is higher when state-level income inequality is higher, net of household income in dollars. These gaps in investment are also evident by parental education, controlling for income, which accords with the “contextual effects” pathway.

Finally, we tested if rising income inequality similarly translates to wider class gaps in parents’ time investments in children. The contextual effects mechanism led us to hypothesize that these gaps would be wider. However, the magnitude of any such effect compared to the effects on class gaps in financial expenditures on children is likely constrained by the temporal reality that high-earning parents may work long hours, and highly scheduled children may have little available excess time to spend with their parents. Empirically, we do not find robust evidence that income inequality has affected the class gap in parental time investments in children, even after accounting for the likely relationship between income inequality and increased time spent working by high-SES parents.

This result does not necessarily imply that income inequality does not lead to increased pressures for high-SES parents to engage in time-intensive parenting with their children. Instead, it suggests that the effect of such pressures on time investments in children may be counteracted by the outsourcing of developmental care. Indeed, in some robustness models using recent ATUS data, we find a negative relationship between income inequality and education-based gaps in parenting, suggesting that increasing inequality may have encouraged highly educated parents to pay for external enrichment activities for their children in recent years. This would concord with research showing that parents’ education is the dominant predictor of engagement in practices associated with “concerted cultivation” (Cheadle and Amato 2011). However, we again emphasize that this relationship is not found in all models, and our main models show no robust relationship between income inequality and class-based gaps in parental time investments in children.

This null effect of income inequality on class gaps in parental time investments in children is not evidence of less inequality in child investment. Rather, it suggests that even in the face of considerable time pressures, high-SES parents did not reduce their time investments in children. The net effect across investments of time and money of rising income inequality is thus to widen class gaps in investment in children.

Our findings have implications for several areas of sociological research. First, sociologists of the family have charted just how historically contingent popular definitions of “good” parenting are (e.g., Hays 1998; Wrigley 1989). Recent influential work on parenting practices finds a class-specific manifestation of “good parenting” in the contemporary period, in which high-SES parents make extraordinary investments of money and time in their children (Lareau 2002). However, scholars disagree about the origins of this practice (Sherman and Harris 2012); some situate parents’ motivation in parental education and culture (Kalil 2015), whereas others point to more structural economic drivers (Sherman and Harris 2012). Our work shows how intertwined these explanations really are—income inequality powerfully shapes how high-SES parents invest in their children. But, these effects are not simply economic. Rather, contexts of higher income inequality really do seem to reshape parents’ preferences for investment in children.

Second, scholarship on the family and stratification has focused on financial investments in children (e.g., Kornrich and Furstenberg 2013) and on time with children (e.g., Kalil et al. 2012), and research in the sociology of education has explored the “shadow education” system. This work shows cross-national growth over time in the dedication of private expenditures to extracurricular enrichment (e.g., Bray 1999), and recent work has begun to examine the macro-social correlates of this phenomenon (Park et al. 2016). Our results disaggregating financial investments into a component that includes lessons and activities shows that class divides in this form

of investment in “shadow education” are indeed shaped by macro-social context—in particular, by income inequality, as hypothesized by Park and colleagues (2016).

Third, as Cherlin and colleagues (2016) note, there is a surprising dearth of studies that examine the relationship between income inequality and outcomes of interest using individual-level data. Yet, these designs are perhaps best suited to approximate causal effects of income inequality (Evans et al. 2004). Our research contributes to this body of evidence. We answer the recurrent calls of those who have synthesized the literature on income inequality to both investigate how income inequality shapes class disparities and the mechanisms by which income inequality may affect behavior (Neckerman and Torche 2007; Truesdale and Jencks 2016). In doing so, we show that inequality functions to perpetuate stratification, rather than simply to depress the well-being of everyone.

Our work is subject to some important qualifications. First, even as we have homed in on the relationship between income inequality and class gaps in parental investment by using state and year fixed-effects models with rich controls, we do not have a way of more cleanly identifying the effects of income inequality. This distributional parameter is not randomly assigned and arises from the complexity of economic, political, and social processes—factors that are difficult to measure well and could confound the relationships we observe. However, scholars have yet to identify a convincing instrument for income inequality, and it seems unwise to rule out any investigation of these questions on those grounds.

Second, we observed household financial investments in children and saw that income-rank gaps in spending rise with income inequality, but we cannot observe what those investments actually yield. The assumption is that more money spent on lessons, daycare, or school translates to some developmental benefit. But, we are not able to observe that directly. It is possible that higher-income-rank households simply waste their money more when state-level income inequality is higher,

overpaying for child-oriented services of the same quality that they could pay less for in more equitable contexts. This concern is accentuated by recent evidence that suggests class gaps in achievement in kindergarten actually narrowed between 1998 and 2010 after increasing for several decades (Reardon and Portilla 2016). This turn-about does not mean that parental investments in children are immaterial or that the relationship between income inequality and class gaps in parental investment is spurious. Rather, we agree with Reardon and Portilla (2016) that public investments in low-income children, including preschool and health insurance coverage, may have effectively offset class gaps in parental investment. Together, this research suggests a new line of inquiry that might examine how public and private investments in children interact to shape inequality in early achievement. We focused on total parental investments of time and money in children, but future work could usefully disaggregate the estimates by child age and type of investment.

Third, we draw on data from the AHTUS to assess whether class gaps in parental time investments widen in line with those in money. We find no evidence of widening gaps in time, but no robust evidence of narrowing gaps either. We thus conclude that the “net” investment gap in children widened with income inequality. However, the estimates for time and money are based on separate datasets and different people. We do not, however, know of any data source with enough substantive, temporal, and geographic coverage to permit the joint evaluation of these two processes. However, the planned release of a new cohort of the Child Development Supplement, combined with the consumption data in the PSID, might allow researchers to look at these two forms of investment jointly.

Fourth, we focused on state-level income inequality as the key metric and level of aggregation. Although we find strong evidence that state-level inequality is related to class gaps in parental investment, it is also possible that other levels of aggregation might capture distinct and important influences of income

inequality. For instance, state-level inequality appears to shape parents' preferences and parenting cultures, but it is also possible that national-level inequality operates in this contextual fashion, with high-SES parents altering their behavior in reference to and in competition with others not just in their state, but around the country. Conversely, it is also possible that smaller aggregates, such as cities or even neighborhoods, might better capture the social influence of income inequality. These aggregates are not limited by geography. It is possible that inequality within social networks or occupations might also have an important influence. Future research that systematically tests these alternative aggregations would be valuable. However, it is difficult to do so, as we lack consistent data on income inequality for many of these units of aggregation, because we lack the ability to link these aggregates to micro-data, and because using these aggregates forestalls our ability to use models (e.g., with state and year fixed effects in the case of national aggregates) that reduce the risk of estimating a spurious association.

Finally, our data are subject to some notable limitations. For the CEX, we are not able to include respondents in some states with small populations because the BLS disclosure guidelines prohibit release of their state identifiers. Because these cases are disproportionately rural, the most conservative interpretation of our results would be that they more accurately apply to urban and suburban areas. Also, although we focus only on parental investments, we recognize that children may receive support from extended families and other social networks. Unfortunately, although the CEX records spending directed to people outside the home, we do not know to whom the investments are directed, and so we are unable to explore this possibility. For the AHTUS, the number of time diaries in years before 2003 is comparatively very small (5 to 6 percent of the total sample), and this may make it difficult to precisely estimate the relationship between inequality and class gaps in time investments in children, given that the most dramatic state-level increases in inequality occurred in the 1980s and 1990s.

In summary, we provide new evidence that rising income inequality is reshaping parenting practices in the United States along class lines. Rising income inequality appears to have increased the class gap in parents' financial investments in children—money spent on childcare, lessons, and schooling. We find evidence that this is due to the mechanical concentration of income and changing parental preferences. Our evidence for the latter helps tell the origin story of the much-discussed rise in concerted cultivation among high-SES parents in the United States. These widening class gaps in financial investments do not appear to have been offset by narrowing class gaps in parental time investments in children. As inequality rose, so did the class gap in parents' developmental investment in U.S. children, a finding that has troubling implications for intergenerational mobility.

Data Note

Data and code for the analyses in the article and the supplement are available on the authors' websites.

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Notes

1. Additionally, high-SES parents could increase their investments in children more than lower-SES parents do because their investments of time and money in children are more effective (Guryan et al. 2008; Hsin 2009; Villena-Roldan and Rios-Aguilar

- 2012) or because high-SES parents may be more informed about the benefits of such investments (Kalil et al. 2012).
2. This literature on class and parental investment does not engage with the classic sociological operationalizations of class as measured by occupational prestige, type, or SEI (e.g., Blau and Duncan 1967; Hodge, Siegel, and Rossi 1964; Wright 1997). Rather, as described earlier, this research generally measures socioeconomic status or class through parental income or education. As Hout (2008) notes, these variables are highly correlated with Americans' own self-reported subjective class status and with other markers such as occupation and wealth.
 3. Along similar lines, economic theory predicts that increasing wages at the top of the income distribution (Lemieux 2008) has led to high-wage workers facing greater opportunity costs of performing unpaid childcare, and thus increased substitution of work time for childcare time. Ramey and Ramey (2010) note that this substitution effect may counteract an income effect, whereby higher wages for top-earning parents lead these parents to "consume" more time with their children. They find that the rise in household income from 1965 to 2008 explains little of the subsequent rise in childcare time among all parents from 1965 to 2008, although they do not examine the effects of uneven growth across the distribution of household income on class gaps in childcare time.
 4. The start-month for a quarter is determined by the first month of interview. Consequently, quarters can span more than one calendar year. In such cases, we assign the quarter to the year during which most of the quarter occurred (e.g., a quarter of Nov. 2011/Dec. 2011/Jan. 2012 would be assigned to 2011, but a quarter of Dec. 2011/Jan. 2012/Feb. 2012 would be assigned to 2012).
 5. State-level identifiers were not available for 1995, so this year is not included in our analysis. State-level identifiers were also missing for the first quarter of 1984, but we are able to identify a household's state if they appeared in a later quarter in 1984. In addition, the CEX did not provide state identifiers on some respondents due to concerns that state identifiers could be used in conjunction with the other geographic characteristic variables (population of sampled area, urban versus rural, and census region) to identify geographic areas with populations less than 100,000—violating standards mandated by the Census Disclosure Review Board. As a result, we are missing state-level identifiers for about 15 percent of observations, primarily from less populated states.
 6. It is possible that the prices of certain investment goods—school, childcare, lessons—are higher when income inequality is higher. Any such price differences should not influence the within-state comparison between high-SES and low-SES parents. However, higher prices in high-inequality state-years could affect between-state comparisons in so far as high-SES parents may get less quantity of the service for the same expenditures. Yet, these higher prices could also reflect higher demand in high-inequality state-years. To the extent that higher prices reflect higher wages for care workers and so attract potentially higher-skilled workers, high-SES parents in high-inequality states may also be purchasing higher-quality services. These wages could also be a function of high-SES parents in high-inequality states demanding not just more, but better quality, services—music lessons from a concert-level pianist as opposed to an amateur.
 7. All expenditures and income measures are adjusted to 2014 real dollars using the CPI-U-RS series. We divide expenses per household by the number of children between the ages of 0 and 18 in the household, generating a per child expenditure measure (using the total expenses per household produced substantively the same results, both with and without controlling for number of children). We also exclude the small portion of expenditures directed toward people outside the home (additional analyses where we include gifts in our measure of investment yield substantively identical results). To avoid unduly influential outliers, for each expenditure category we drop the top 1 percent of expenditures (among those with any expenditures in that category).
 8. We also examined the results when simply calculating CEX respondents' income percentiles within the CEX data for each year and then assigning them to the corresponding income group. This approach is effectively the same as categorizing them into their income group at the national level. The results were substantively the same as those presented here. By placing respondents into their state-level group, we effectively assign some respondents from higher-income states into lower income groups, and some respondents from lower-income states into higher income groups, but the vast majority of respondents are the same income grouping at both the national and state level.
 9. We also test the robustness to using measures coding (1) education of parent in household with lowest educational attainment and (2) number of parents with a college degree in the household (coded as 0, 1, or 2). Results from these models, which are very similar to results from our preferred models, are included in the online supplement.
 10. We do not use data from the 1965 survey, because it was fielded mostly in Michigan, or the 1985 survey, because it does not contain any geographic identifiers. We also drop data from the 1992 to 1993 surveys because no data on household income was collected.
 11. We can construct state-specific household income-ranks in the CEX data, but this income binning means we cannot do so for the AHTUS data. We check the robustness of the results by limiting the sample to the

- 2003 to 2014 ATUS, which have more fine-grained income categories, and re-estimating the models using the state-specific income-ranks as in the CEX. We follow Hout's (2004) method to estimate the dollar amount of diarists' household incomes from the income categories provided in the ATUS. We access ATUS data using the ATUS Extract Builder (Hofferth, Flood, and Sobek 2017). These results are presented in Table 12 of the online supplement.
12. A negative interaction term does not necessarily imply that parental investments decline in absolute terms for the bottom income quartile as inequality increases, only that they decline relative to the reference category—the middle two income quartiles.
 13. We use the `-kbb-` Stata module to test if the difference between the estimated coefficients in the two nested models (one with a control for income and one without) is statistically significant.
 14. We also tested including both the linear and quadratic terms for income and found that doing so makes no substantive difference.

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