RSF

THE RUSSELL SAGE JOURNAL OF THE SOCIAL SCIENCES

RSF: The Russell Sage Foundation
Journal of the Social Sciences

*Wealth Inequality and Child Development:
Implications for Policy and Practice*

Mission Statement

RSF: The Russell Sage Foundation Journal of the Social Sciences is a peer-reviewed, open-access journal of original empirical research articles by both established and emerging scholars. It is designed to promote cross-disciplinary collaborations on timely issues of interest to academics, policymakers, and the public at large. Each issue is thematic in nature and focuses on a specific research question or area of interest. The introduction to each issue will include an accessible, broad, and synthetic overview of the research question under consideration and the current thinking from the various social sciences.

We invite scholars to submit proposals for potential issues to journal@rsage.org. Submissions should be addressed to Suzanne Nichols, Director of Publications.

To view the complete text and additional features online please go to **www.rsfjournal.org**.

Wealth Inequality and Child Development: Implications for Policy and Practice

ISSUE EDITORS
Christina Gibson-Davis, Duke University
Heather D. Hill, University of Washington

CONTENTS

Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being

CHRISTINA GIBSON-DAVIS AND HEATHER D. HILL

Wealth inequality—the unequal distribution of assets and debts across a population—has reached historic levels in the United States, particularly for households with children (Pfeffer and Schoeni 2016; Saez and Zucman 2016; Gibson-Davis and Percheski 2018). Among households with a resident child under eighteen (child households), levels of wealth inequality are higher than those of income inequality and higher than wealth inequality in other household types (Gibson-Davis and Percheski 2018). In 2019, among child households, those in the top 1 percent of the wealth distribution accounted for 43.5 percent, those in the bottom 50 percent for –0.36 percent.[1] Given low rates of intergenerational wealth mobility, children who grow up in low-wealth households are likely to have low wealth in adulthood (Pfeffer and Killewald 2018).

Wealth among U.S. child households is notable not only because of its unequal distribution but also because so many child households, particularly those headed by black and Hispanic adults, have so little wealth. Median wealth levels for child households are roughly half as high as those for the general population, and wealth levels for child households in the bottom half of the wealth distribution were –$233 in 2013 (Gibson-Davis and Percheski 2018). Lower-wealth child households are disproportionately nonwhite, with many black and Hispanic child households having next to no wealth. In 2019, median wealth levels were $63,838, $3,175, and $808 for white, Hispanic, and black child households, respectively. These levels reflect long-standing patterns of American structural inequality and institutional racism, under which black and Hispanic families have faced persistent discrimination in lending, credit, and housing markets (Oliver and Shapiro 1995; Darity and Mullen 2020).

As a society, we should be concerned about these trends because wealth may promote child flourishing (Yellen 2016). Disparities in wealth increase gaps in college attendance and completion, and levels of wealth affect early adult decisions regarding marriage and fertility (Conley 2001; Schneider 2011; Addo 2014; Pfeffer 2018). In addition, the importance of wealth is likely not confined to children at the cusp of

Christina Gibson-Davis is professor in the Sanford School of Public Policy at Duke University, United States. **Heather D. Hill** is professor in the Daniel J. Evans School of Public Policy and Governance at the University of Washington, United States.

1. Authors' calculations from the Survey of Consumer Finances. See table 3 for data on wealth percentiles and figure 2 for data on median math levels by race-ethnicity.

adulthood but may also operate throughout childhood in multiple domains to affect future life chances (Shanks et al. 2010; Diemer, Marchand, and Mistry 2020). For example, wealth has been positively associated with younger children's standardized test scores (Yeung and Conley 2008; Elliott, Destin, and Friedline 2011) and social-emotional functioning (Shanks 2007; Ream and Gottfried 2019).

Relative to the voluminous literature on income and child well-being, the literature on wealth and child outcomes is still in its infancy, with important contextual and policy issues unaddressed. The association between wealth and some outcomes, such as child health and parenting behaviors, has not been studied, and the moderating effects of race, ethnicity, age, or income have received scant attention. Literature on policies and practices that address economic inequities among child households has largely focused on income-based programs and has provided relatively little evidence as to how policies might address wealth inequities or low-wealth levels among child households.

To further our understanding of wealth and wealth inequality for child well-being, this volume features original theoretical and empirical work on the contours and consequences of wealth for children and their families. The first set of studies describe wealth inequality in the United States, comparing levels of wealth inequality for children across Western democracies and examining parental wealth investments on behalf of their children. The next set examines how wealth affects child health, behavior, and academic achievement, focusing on how wealth interacts with debt and asset composition and income instability. The final set describes current policies and practices that either directly or indirectly boost wealth acquisition among child households.

In this introduction, we lay the foundation for those articles by providing a descriptive and theoretical context for wealth among American children. We describe patterns and trends in wealth and wealth disparities among child households and highlight the extremely low-wealth holdings of African American and Hispanic households. We provide a conceptual framework for how wealth and wealth inequality might matter to children and describe how

three aspects of wealth—as a manifestation of resources, conveyance of psychological and economic security, and bestower of class and socioeconomic status—can explain its importance. Last, we briefly summarize the contributions of the articles in this issue before turning to some of their implications for research and policy.

Our conclusions are that growing wealth inequality and the large number of child households with little wealth are concerning aspects of the economic context of childhood in the United States. A relatively small group of parents—mostly white—control the lion's share of the wealth available to children (Gibson-Davis and Percheski 2018). As with wealth inequality in the population overall, the racial-ethnic disparities in wealth among child households are both profound and profoundly important to address. Our understanding of wealth and its importance to child development is growing but is still hampered by data and methodological challenges. To the extent that we have large-scale wealth policies in the United States, they mostly promote the accumulation of wealth among a small group of families. Interventions to build wealth among families with children or policies to redress wealth inequalities have been scattered and small in scale.

As this issue appears, the United States is still grappling with the economic fallout of the COVID-19 pandemic. Given that the pandemic's economic effects are disproportionately affecting black and Hispanic households (Hardy and Logan 2020; Federal Reserve 2020b), wealth disparities among child households will continue to grow in the 2020s and many child households will not have enough wealth for their children to flourish. We hope this volume as a whole will contribute to a deeper public understanding of the role of wealth ownership and inequality in child well-being and stimulate advocates and decision makers to create an evidence-based framework for wealth policy.

DEFINITION OF WEALTH

Wealth, also known as net worth, is a measure of assets minus debts. Assets can be classified as either liquid or nonliquid. Liquid assets can readily be converted into cash via a smoothly functioning market. Common liquid assets in-

clude savings or money market accounts, stocks or bonds, and mutual funds. Nonliquid assets require effort to sell and may be sold for less than their value if sold soon after they are acquired. The most common type of nonliquid asset is a home, but other examples include vehicles, ownerships in business, real estate other than a primary residence, and the pre-retirement value of retirement accounts such as 401(k)s or individual retirement accounts. Virtually all Americans (99 percent) report owning some kind of asset (Bhutta et al. 2019) with the most common being a transaction account, that is, checking or savings account (98 percent); owning a vehicle (85 percent); or homeownership (65 percent). Relatively few report owning stocks (15 percent), having business equity (13 percent), or having a savings bond (9 percent) (Bhutta et al. 2019).

Debt also has two primary classifications: secured (backed by collateral that can be collected if the debt is not paid) or unsecured (loaned without collateral). Typical secured debts include car loans and home mortgages; typical unsecured debt include credit card loans and medical debt. Debt has also conventionally been classified as to whether it is "good" or "bad" (Manning and Butera 2010). Good debt will increase future income or wealth. For example, taking on educational loans has conventionally been considered good debt, insofar as human capital acquisition leads to increased earnings, although the recent rise of nonprofit colleges has undermined this traditional classification (Baum 2016). Bad debt is used to acquire something that may depreciate, such as taking out a car loan or using credit cards for consumption purposes. More than three-quarters of Americans report being in debt (Bhutta et al. 2019) and, apart from medical debt, the most frequent types of debt are credit card (44 percent), mortgage (42 percent), and vehicle (37 percent).

Americans' wealth portfolios depend heavily on the value of their homes. The largest share of the average American asset portfolio comes from the value of a principal residence, which typically constitutes about 25 percent of gross assets (Wolff 2017). Similarly, mortgage debt on the principal residence is the largest category of debt, amounting to some 9 percent of the total (Wolff 2017). When limited to middle-class households, however, homeownership represents an even larger share of the asset and debt pie. For those in the middle three quintiles of wealth, the value of the home and the amount owed on a home are 66 percent and 60 percent of total assets and debts, respectively (Wolff 2017).

Wealth is related to, but conceptually distinct from, income. Wealth is a stock of resources; income is a flow of resources. As a store of value, wealth is what a household can access to meet unexpected expenses, buffer against income loss, or otherwise meet economic shocks, such as medical emergencies, that can deplete financial reserves. As a flow of resources, income can be used to fund day-to-day expenditures and is closely related to a household's consumption patterns. Wealth is usually built up over long periods, whereas income is used to finance the immediate flow of goods into the household. Unlike income, wealth can be inherited; the intergenerational wealth correlation varies by data sets and methods but is generally thought to be between 0.3 and 0.4 (Pfeffer and Killewald 2018). Because of these conceptual differences, it is perhaps not surprising that wealth and income in the United States are modestly correlated at 50 to 60 percent (Keister and Moller 2000; Killewald, Pfeffer, and Schachner 2017). Among child households, the correlation is 0.50 (Gibson-Davis and Percheski 2018).

WEALTH IN CHILD HOUSEHOLDS

We begin by describing wealth among child households, using data from the Survey of Consumer Finances (SCF), between 1989 and 2019. The SCF is conducted triennially by the Federal Reserve Board and includes an oversample of wealthy households, making it one of the premier sources of wealth data in the United States (Federal Reserve 2020a). Our analysis updates and expands directly on work by Christina Gibson-Davis and Christine Percheski (Gibson-Davis and Percheski 2018; Percheski and Gibson-Davis 2020). In keeping with that work, we defined child households as those containing at least one member under the age of eighteen (for the technical details on these analyses, see the appendix).

Table 1. Net Worth, 2019, by Presence of Child in the Household

	Net Worth		
Percentile	All Households	No Child	Child[a]
10th	−11,849	−8,000	−20,400
25th	1,600	3,700	300
50th	97,300	114,850	64,050
75th	372,420	425,000	265,400
90th	1,157,000	1,238,300	892,000

Source: Authors' tabulation based on the Survey of Consumer Finances (Federal Reserve 2020a).
Note: All estimates weighted.
[a] Household has at least one resident child under eighteen.

Wealth Levels

In 2019, child households had median wealth levels of $64,050, roughly half the size of the $114,850 for nonchild households (see table 1). Differences at the median are mirrored in the rest of the distribution; at every point on the distribution, child households had less wealth than nonchild households. Child households at the bottom of the distribution are particularly disadvantaged, both in absolute and relative terms: child household wealth at the 10th percentile was –$20,400 (signifying that these households owed more in debt then they had in assets), 250 percent lower than that of nonchild households (–$8,000).

Asset ownership does not differ substantially by the presence of a child, but debt ownership and amounts do (see table 2). Similar percentages of both child and nonchild households report having any asset, owning a home, having a retirement account, or owning stocks, bonds, or mutual funds. Median asset levels are also similar (about $200,000) but child households have higher median home values, whereas nonchild households have more in retirement and stock accounts. In contrast, child households are more likely to report being in debt than nonchild households (87 percent versus 72 percent), and, conditional on being in debt, have higher levels of median debt ($122,000 versus $47,500). Part of the reason child households are more indebted is their home debt: more than half of child households report owing money on their homes (versus one-third of nonchild households), with median loan amounts running some $160,000

(about 50 percent more than the median amount for nonchild households). Differences in credit card debt ownership and levels are relatively small, but child households are twice as likely to report owning money on education loans (31 percent versus 17 percent). Conditional on having educational loans, loan amounts are higher for nonchild households ($27,000 versus $18,000).

Lower levels of wealth for child households, relative to those without resident children, is consistent with the life-cycle model, the conventional lens used to understand life course dynamics in wealth (Ando and Modigliani 1963). The model, which connects individuals' debt and asset patterns to expectations of future income, predicts that younger-aged households (typically those with resident children) will have lower levels of wealth than older (typically those without resident children). Young adults, who may have high education debt and low current earnings, will not save but will instead borrow against future income. Adults in middle to late-middle age, at the peak of their earnings capacity, will pay down debts and accrue assets and savings at an increased pace. Older adults (usually interpreted to be those over the age of sixty-five, or past the typical age of retirement) will spend down their savings to support consumption in the absence of labor-market activity (Modigliani 1988). The life-cycle model can also partly explain low levels of intergenerational wealth mobility. Wealth that is not used in one generation is passed to the next, providing that generation with a "leg up" on asset accumulation, relative to households

Table 2. Select Asset and Debt Holdings, by Presence of Child in the Household, 2019

Assets	Any		Home		Retirement		Stocks or Bonds	
	Has	Median	Has	Median	Has	Median	Has	Median
All households	.99	201,200	.65	225,000	.50	65,000	.25	22,000
Without resident child	.99	200,620	.65	210,000	.48	73,000	.26	28,000
With resident child	.99	204,250	.65	250,000	.55	53,000	.24	10,000

Debts	Any		Mortgage		Credit Card		Educational	
	Has	Median	Has	Median	Has	Median	Has	Median
All households	.77	65,000	.42	135,000	.45	2,700	.21	22,000
Without resident child	.72	47,500	.36	109,000	.43	2,500	.17	27,000
With resident child	.87	122,000	.55	160,000	.52	3,000	.31	18,000

Source: Authors' tabulation based on the Survey of Consumer Finances (Federal Reserve 2020a).
Note: Medians expressed in dollars. Median conditional on having the asset or debt. Results weighted.

that did not receive an inheritance (Gale and Scholz 1994).

Wealth Inequality

As measured by the Gini coefficient, child households in the United States have more and faster growing wealth inequality than households without a child present (see figure 1). From 1989 through 2019, wealth inequality rose for all households, particularly during the Great Recession (2007–2009) and immediately after. However, across all years, child households, relative to households without a resident child, had higher levels of inequality, with larger year-over-year increases in the Gini, especially during the Great Recession. As a result, the relative gap in the Gini coefficient between households with and without a child increased between 1989 and 2019. In 2019, the Gini coefficient for child households was 0.90 and for households without a resident child, 0.86. Notably, this pattern does not hold for income inequality: across the period, the income Gini for child households was lower than that of nonchild households. Income inequality has also fallen for child households over time.

As shown in table 3, the wealth distribution for child households is extremely top heavy, with net worth increasingly concentrated among the very wealthiest. In 2019, the top 10 percent of the wealthiest child households accounted for 82 percent of all wealth among child households, the top 1 percent accounting

for 43.5 percent. Relative to 1989, wealth in the top decile increased by 14 percentage points, with most of that increase (11 percentage points) occurring in the top percentile. The increasing concentration among the top decile was at the expense of those in the bottom 90 percent, where the concentration of wealth fell steadily over time. Declines in wealth were particularly pronounced for households in the bottom 50 percent of the distribution—wealth shares never rose above 1 percent and by 2019 were negative. Notably, the distribution of wealth among nonchild households is less extreme than among child households. Across years, relative to the top 10 percent of child households, the top decile of nonchild households accounted for a smaller fraction of overall wealth. Although wealth share in the bottom 50 percent of nonchild households declined (from 2.2 percent in 1989 to 0.96 in 2019), wealth shares for the group were nevertheless positive (albeit very small).

The extreme and growing concentration of wealth seen among child households does not extend to income. The top 10 percent of richest households account for a smaller share of income (47 percent in 2019) than the top 10 percent of wealthiest households do for wealth (82 percent). And, unlike share of wealth, shares of income by place in the distribution remained relatively stable over time. Finally, in contrast to child households in the bottom 50 percent of the wealth distribution, which had no wealth,

Figure 1. Gini Coefficient, Net Worth and Income, 1989–2019
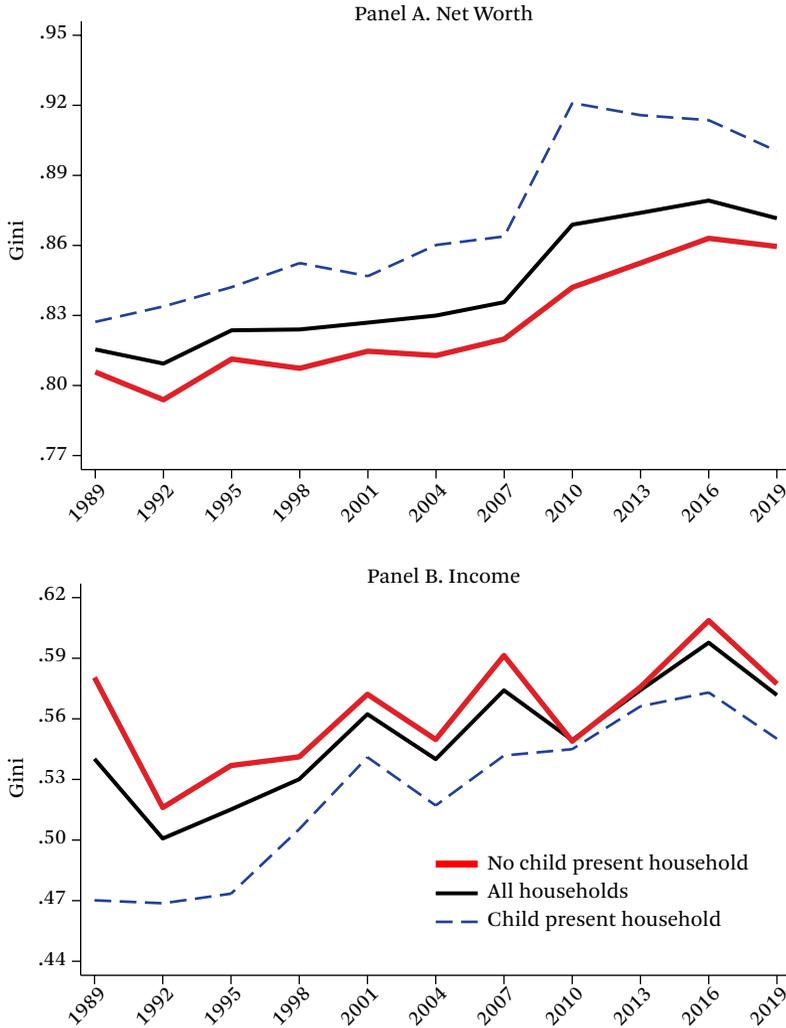
Panel A. Net Worth

Panel B. Income

No child present household
All households
Child present household

Source: Authors' tabulation based on the Survey of Consumer Finances (Federal Reserve 2020a).

those in the bottom 50 percent of the income distribution accounted for approximately 14 percent of the income pie. Relatively larger increases in wealth inequality than in income inequality for child households is consistent with trends for the general population (Gibson-Davis and Percheski 2018; Wolff 2018) and may reflect the snowballing effect of income inequality (Saez and Zucman 2016). Those with the highest incomes save at disproportionately high rates, leading to higher asset accumulation. These assets beget more income (in the form of capital income, such as a stock divi-

dend), further exacerbating disparities in wealth and income shares (Saez and Zucman 2016; Saez 2017).

Why is wealth inequality more extreme in child households than other households? It is likely that the factors that have led to increases in wealth inequality for U.S. households more generally—a shifting labor market, changes in tax codes that favor wealth accumulation, and growing levels of household indebtedness (Saez and Zucman 2016, 2019)—have been particularly acute for child households. Child households typically rely on earnings as their primary

Table 3. Share of Wealth, by Presence of a Child in the Household, Wealth Percentiles, and Year

	All Households				No Child Present				Child			
	0–50	51–90	91–99	100	0–50	51–90	91–99	100	0–50	51–90	91–99	100
Wealth												
1989	1.68	29.0	38.1	31.2	2.22	28.8	38.9	30.0	0.64	30.8	36.1	32.4
1995	1.90	27.0	34.0	37.1	2.56	27.4	33.5	36.5	0.90	26.2	35.9	37.0
2001	1.72	26.7	38.2	33.4	2.38	27.2	37.7	32.7	0.76	25.8	39.2	34.2
2007	1.50	25.3	38.4	34.8	2.32	25.8	39.1	32.8	0.18	24.3	36.7	38.9
2013	–0.07	22.8	40.4	36.8	0.76	24.5	40.1	34.6	–1.41	18.9	40.2	42.3
2019	0.55	21.1	39.9	38.5	0.96	22.2	40.3	36.6	–0.36	18.4	38.5	43.5
Income												
1989	15.7	42.0	25.3	17.0	19.4	44.8	23.8	12.1	13.8	39.4	26.4	20.3
1995	16.8	43.9	25.0	14.3	19.1	45.4	24.9	10.6	15.9	42.3	24.9	16.9
2001	15.0	39.6	25.4	20.0	16.1	40.4	24.9	18.6	14.7	38.7	25.7	21.0
2007	14.6	38.3	25.8	21.3	16.3	39.2	25.3	19.2	13.8	37.4	26.2	22.7
2013	14.5	38.6	27.2	19.7	15.0	38.2	27.2	19.5	14.4	38.7	27.2	19.7
2019	14.6	38.9	27.4	19.1	15.7	39.5	26.9	17.9	14.3	38.6	27.4	19.7

Source: Authors' tabulation based on the Survey of Consumer Finances (Federal Reserve 2020a).
Note: Estimates represent share of wealth attributed to percentile group. Estimates weighted.

source of income, but globalization and a skill-based workforce have caused wages to stagnate for lower- and middle-class workers as they sky-rocketed for upper-class workers (Autor, Katz, and Kearney 2008; Autor 2014). When coupled with a tax code that has become increasing regressive, top earners can save more of their incomes, have bigger stores of reserves to deal with unexpected expenses, and have more after-tax monies to invest in assets (Saez 2017; Saez and Zucman 2019). Wealth inequality has also risen because Americans are taking on increasingly large levels of debt (Saez 2017). Mortgage debt has increased over time, though it has slowed in recent years (Haughwout et al. 2019) and pressure to buy more expensive homes may be more acute for child households than those without children, as school choice is closely tied to neighborhood location. The proportion of adults of childbearing age who have taken on education loans has also risen (Houle 2014; Addo, Houle, and Sassler 2019) because adults increasingly take on education loans to finance higher education for themselves.

Two other factors may explain greater wealth inequality among child households than other households. First, the effects of the Great Recession were particularly large on younger household heads with fewer years of labor-market experience and households of color (Hoynes, Miller, and Schaller 2012; Pfeffer, Danziger, and Schoeni 2013), characteristics that may describe a substantial fraction of child households. Second, child households have become increasingly diverse in terms of race-ethnicity and family structure (England, Wu, and Shafer 2013; Child Trends 2016), both of which are strong predictors of wealth (Oliver and Shapiro 1995; Yamokoski and Keister 2006; Percheski and Gibson-Davis 2020).

Demographic Disparities in Wealth

Consistent with previous work (Percheski and Gibson-Davis 2020), wealth levels among child households are characterized by alarmingly large racial and ethnic disparities (figure 2). In 2019, white child households had median wealth levels of $63,838, compared with black child household levels of $808. Expressed as a ratio, these estimates indicate that, at the median, for every dollar of white child household wealth, black child households had 1 cent. Relative to African Americans, Hispanic child households had substantially higher levels ($3,175), but still only 5 cents for every dollar of white wealth.

Figure 2. Median Net Worth and Income, Select Characteristics, Child Households, 2019
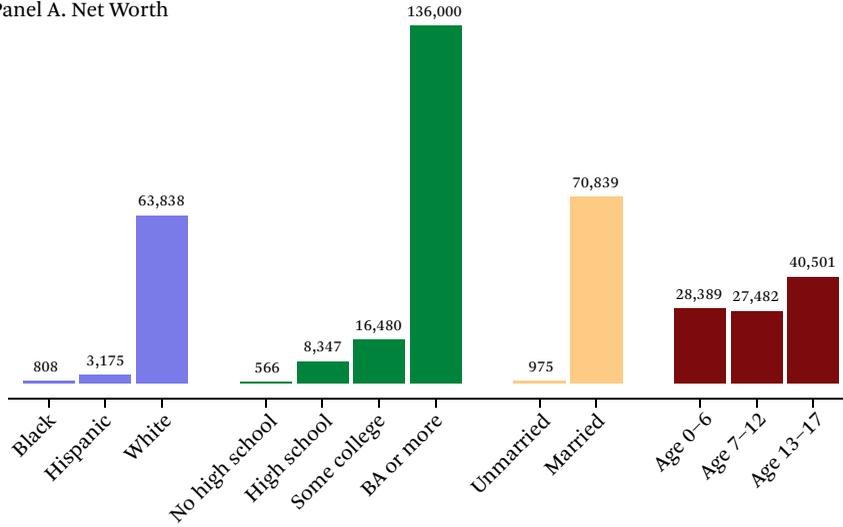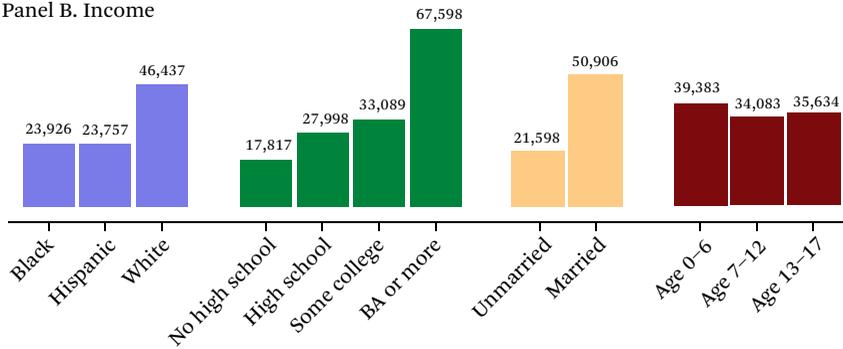
Panel A. Net Worth

Panel B. Income

Source: Authors' tabulation based on the Survey of Consumer Finances (Federal Reserve 2020a).
Note: Age refers to age of oldest child.

Educational gaps in wealth were also large; those with a bachelor's degree had median wealth levels 240 times as high as those without a high school degree ($136,000 versus $566). Differences by marital status were less pronounced than education, but still quite large: children living with married parents had median wealth levels ($70,839) seventy-two times as high as those living with unmarried parents ($975). Differences by age of the oldest child are relatively smaller and, most likely reflecting that older households' heads have older children, indicate that wealthiest child households are those with teenagers. Wealth disparities by socioeconomic characteristics exceed those seen for income (figure 2, panel B).

Notably, racial-ethnic differences in wealth persist even after adjusting for socioeconomic status, as proxied by educational attainment (figure 3). Among households where the head has a high school degree or less, white child households have median wealth levels thirty-two times higher than those of black or Hispanic child households. Among those with bachelor's degree or more, white child households have wealth levels that are six and a half times as high. The racial-ethnic discrepancy in wealth levels among the most educated is so vast that black and Hispanic child households with at least a bachelor's have wealth levels ($23,336) that only slightly exceed that of whites that did not graduate high school ($22,917).

Figure 3. Median Net Worth and Income, Race-Ethnicity and Education, Child Households, 2019
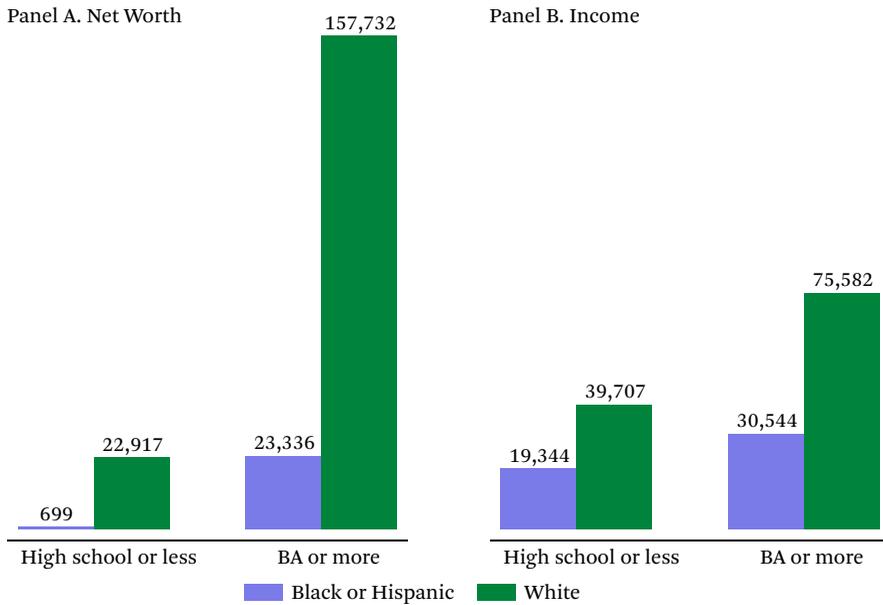
Panel A. Net Worth

Panel B. Income

Source: Authors' tabulation based on the Survey of Consumer Finances (Federal Reserve 2020a).

With regard to specific asset types (table 4), white child households are far more likely to hold each asset and to have much higher median values if they do, compared to black and Hispanic child households. White child households have median asset levels that are fourteen times as high as that of black households and six times as high as Hispanic families. Notably, the share of child households receiving an inheritance are substantially higher for white (21 percent) child households than black (3 percent) or Hispanic (7 percent) child households.

White child households have three to four times higher levels of debt than black or Hispanic households as well as high levels of mortgage debt. However, white child households are the only subgroup with a positive asset-to-debt ratio (about 2, or $2 in assets for every dollar of debt). Black child households have 59 cents for every dollar of assets, and Hispanic child households almost break even ($0.93 asset to $1 debt). Relative to white and Hispanic child households, black child households report relatively low levels of mortgage and credit card debt, but high levels of education debt.

The vast wealth advantage that white parents enjoy reflects not only modern day struc-tural and cyclical economic changes but also U.S. history and the effects of past public policies (Oliver and Shapiro 1995; Conley 1999; Darity and Mullen 2020). The amassing of wealth among white families began with the institution of slavery and the appropriation of Native lands. It continued during Reconstruction with the failure of the Freedmen's Bureau to reallocate land to free slaves and then with federally supported covenants and "redlining" against nonwhite and non-Christian families during the suburbanization of America in the post–World War II era (Oliver and Shapiro 1995; Conley 1999; Rothstein 2017).

These historical forces are the antecedents of contemporary barriers to wealth accumulation among Americans of color (Darity and Mullen 2020). Despite antidiscrimination laws, households of color continue to face discrimination in obtaining credit, purchasing homes, and securing loans (Oliver and Shapiro 1995). Residential segregation results in black and Hispanic families occupying neighborhoods that have lower housing values and higher rates of vacancy and foreclosure (Massey 2015). Redlining has been replaced by "reverse redlining," in which lenders target racial minority

Table 4. Select Assets and Debts, Child Households, by Race and Ethnicity

Assets	Any		Home		Retirement		Stocks or Bonds		Inheritance	
	Has	Median	Has	Median	Has	Median	Has	Median	Received	Median
White	1.00	291,901	.77	260,000	.66	65,000	.32	10,000	.21	55,000
Black	.99	20,970	.40	177,000	.37	15,700	.12	9,000	.03	23,000
Hispanic	.97	45,900	.48	200,000	.30	21,000	.05	3,300	.07	35,000

Debts	Any		Mortgage		Credit Card		Educational	
	Has	Median	Has	Median	Has	Median	Has	Median
White	.93	147,100	.67	164,000	.53	3,500	.34	17,200
Black	.76	35,000	.31	136,000	.48	1,900	.39	22,000
Hispanic	.78	49,000	.39	145,000	.55	2,000	.17	14,000

Source: Authors' tabulation based on the Survey of Consumer Finances (Federal Reserve 2020a).
Note: Medians expressed in dollars. Median conditional on having the asset or debt. Results weighted.

households for subprime loans and other predatory loan practices (Rugh and Massey 2010; Faber 2013). Policies associated with mass incarceration and the use of fines and fees in the criminal justice system disproportionately affect black families and impede wealth accumulation by lowering family incomes, imposing legal costs, and incurring debts (Harris, Evans, and Beckett 2010; Sykes and Maroto 2016; Nepomnyaschy et al. 2021, this issue). Black and Hispanic children are also disadvantaged in that they are less likely to receive inheritances or in-vivo transfers from their parents (Killewald and Bryan 2018; Pfeffer and Killewald 2019). Relative to whites, black and Hispanic parents provide fewer monetary resources to their adult children (Fingerman et al. 2011; Hardie and Seltzer 2016), likely because parents of color have fewer financial resources to offer (Oliver and Shapiro 1995). Although inheritances explain only a small fraction of the intergenerational transmission of wealth (Pfeffer and Killewald 2018), racial and ethnic differences in parent-to-child transfers of wealth contribute to and compound the difficulties black and Hispanics face in accumulating wealth (Pfeffer and Killewald 2019).

HOW WEALTH MATTERS TO CHILDREN
Research on wealth and its consequences for child well-being has largely concentrated on outcomes in young adulthood, and in particular, wealth's association with educational attainment (Shanks 2007; Elliott, Destin, and Friedline 2011; Jez 2014; Doren and Grodsky 2016; Ream and Gottfried 2019; Diemer, Marchand, and Mistry 2020). After adjusting for household income, household wealth is positively associated with years of completed schooling, high school graduation, college attendance, and college completion (Conley 2001; Belley and Lochner 2007; Pfeffer 2011; Jez 2014; Doren and Grodsky 2016). Many of these studies rely on wealth data collected in the 1970s and 1980s, before wealth inequality began to rise overall and among child households. However, Fabian Pfeffer's (2018) recent study on wealth and educational attainment by birth cohort suggests that wealth may be an increasingly important predictor of human capital acquisition. Comparing children born in the 1970s with those born in the 1980s, he finds that the difference in college attainment between the lowest and highest quintiles of wealth had increased by nearly 10 percentage points. The wealthiest children born in the 1980s were 40 percentage points more likely to graduate from college than their least wealthy peers.

A smaller literature has examined wealth as a predictor of outcomes for children under the age of eighteen. Studies published before this issue indicate that parental wealth is positively correlated with standardized test scores and academic achievement (Orr 2003; Yeung and

Figure 4. Hypothesized Mechanisms for the Effects of Household Wealth on Child and Adolescent Outcomes

Household Wealth

Sources of wealth: Intergenerational transfers; investing, saving, and borrowing behaviors; disposable income

Components of wealth: Assets, debt, and access to credit

Resources
Insurance-security
Class status

Primary Mechanisms

Time and money investments

Subjective financial well-being

Future expectations for child

Parental stress and cognitive load

Secondary Mechanisms

Early childhood

Quality of childcare and preschool

Quality of health care and nutrition

Environmental chaos

Parental warmth and sensitivity

Middle to late childhood

Quality of K–12 education

Neighborhood safety and norms

Choices about extracurricular contexts

Outcomes

Cognitive development

Social-emotional development

Educational achievement

Health and health behaviors

Conley 2008; Friedline, Masa, and Chowa 2015), an association that cannot be explained by income alone (Yeung and Conley 2008; Diemer, Marchand, and Mistry 2020). A handful of studies examine children's social-emotional functioning, finding that more wealth is associated with higher sociability in eight-grade students (Ream and Gottfried 2019) and fewer behavior problems in three- through twelve-year-olds (Shanks 2007).

Enhancing this narrow research base is new work presented in this volume demonstrating the importance of wealth in buffering the adverse effects of low income on child achievement (Miller et al. 2021), the negative associations between wealth and child body mass index (BMI) (Boen, Keister, and Graetz 2021), and the adverse repercussions of fathers' child support arrears for children's socio-behavioral outcomes (Nepomnyaschy et al. 2021). It also offers evidence that, despite wealth's strong association with cognitive outcomes, black-white and Hispanic-white disparities in test scores remain even in same-wealth families, in part because of demographic and wealth composition differences (Conwell and Ye 2021). These studies represent important contributions to our understanding of the importance of wealth for children. Nevertheless, relative to the voluminous literature on income and child development (Duncan and Brooks-Gunn 1997; Duncan, Magnuson, and Votruba-Drzal 2014; Shonkoff 2018), the literature on wealth and child development is in its nascent stage.

Conceptual Framework

Despite the relative paucity of empirical studies on wealth inequality and child development, it is theoretically likely that wealth is a determinant of many aspects of child well-being. In figure 4, we describe the potential mechanisms linking wealth with child outcomes. We begin by listing three key meanings of wealth for families: resources, insurance-security, and class status.

First, although wealth represents a stock of resources, it can contribute to both income and expenses. Some assets produce interest or dividends, which are returned to the owner as income, and parents can use this to provide additional resources to their child. For instance, interest on a savings account might be treated by parents the same as any other income source. Conversely, debt may constrain parental investments, if paying back loans depletes financial resources or compromises parenting ability by increasing levels of anxiety and stress.

Second, wealth can provide a family with the real and psychological security of having insurance against crises (Shapiro 2004; Pfeffer 2018). This security comes in large part from wealth being less attached to labor-force participation than income (Shanks and Destin 2009) and therefore providing a buffer against unexpected changes in job status, earnings, or health crises (Sherraden 1991; Shapiro 2004). The insurance function of wealth may also allow parents to take financial risks (such as investing in education) that will pay off in the long run.

Third, far more than income, wealth expresses class status. As Dalton Conley (1999) notes, wealth both represents and determines class: assets and debt are the visible evidence of class status and the mechanisms used to change it. In fact, the value of one's home and the real and perceived quality of the neighborhood in which one resides is probably the strongest demonstration of class and mobility. The typical connotation of the American dream—of "making it"—is a house on a leafy street with a picket fence. For immigrants, homeownership is also evidence of incorporation in the economy and culture of the arrival country (Myers and Lee 1998; Sánchez 2018; Agius Vallejo and Keister 2019). This symbolism gives wealth particular meaning for the subjective experience of social and economic position, opportunity, and belonging. In addition, symbols of class status shape how individuals—including children—are treated by others and perceive themselves in ways that influence behavior, academic achievement, and health (Goodman et al. 2000; Destin et al. 2012; Destin 2013; Mistry et al. 2015).

How do the resources, security, and status provided by wealth affect family life and other contexts of child development? We hypothesize a set of primary and secondary mechanisms that could mediate relationships between family wealth and child outcomes (see figure 4). Our model is informed by the theories linking

family income to child development (McLoyd 1990; Conger and Elder 1994; Mayer 1997; Bradley and Corwyn 2002; Yeung, Linver, and Brooks-Gunn 2002). Two of the mechanisms—parental investments and parent stress—are those most commonly associated with income effects on children. However, the other two—subjective financial well-being and future expectations—are likely to be particularly salient for understanding the role of wealth in child development.

Time and Money Investments

Liquid wealth can be used like income to invest in food, housing, health care, and schooling, which can then benefit children in a variety of ways. The need to pay down debt can constrain the use of income for basic needs, but mortgages and educational debt may represent investments in better quality neighborhoods or careers. The influence of wealth via parental investments would most likely be seen in the quality of child care and education, the neighborhood context in which families live, and the degree of instability or "chaos" experienced at home and in the community (Shanks 2007; Evans and Wachs 2010). The evidence that liquid wealth is more predictive than illiquid wealth of school-age children's test scores (Yeung and Conley 2008) supports the notion that parents are using wealth for consumption related to child development. As indicated by scholarship on poverty (see Yeung, Linver, and Brooks-Gunn 2002), the effects of wealth that operate through parental investments may be stronger for health and cognitive development than for social and emotional outcomes. Wealth may also affect the choices that parents make about work outside the home, which could influence both the quantity and quality of parent-child time.

Parental Stress and Cognitive Load

Akin to the strong theoretical connections between income and parental stress (McLoyd 1990, 1998; Conger and Elder 1994), wealth and parental stress are likely also linked. Levels of wealth could inform a parents' comprehensive assessment of the resources available to provide basic needs, achieve goals, and support family processes. In fact, though untested, the

ability of wealth to offer insurance against income losses suggests that it may be far more effective at reducing parental stress about finances than income is. Even nonliquid wealth, such as homeownership or the ownership of a retirement fund, is likely to shape the sense of day-to-day sufficiency of resources. Substantial evidence shows that parental stress leads to less warm and sensitive parenting, which in turn is associated with children's behavior problems (Conger et al. 1994; McLoyd 1998; Mistry et al. 2002).

Also, recent developments in behavioral science focus on the way in which income poverty increases cognitive load and demands attention, improving some cognitive functions and demeaning others. For example, some studies find associations between having insufficient resources and poor performance on intelligence tests, better memory for costs, and a greater ability for considering financial trade-offs (Mani et al. 2013; Shah, Shafir, and Mullainathan 2015; Shah et al. 2018). Having no or negative wealth could further add to cognitive load; savings or assets could reduce it. As insurance against income losses, assets could reduce the cognitive demands of being poor or low income.

Subjective Financial Well-Being

We hypothesize that wealth could also affect parent and child subjective financial well-being (SFWB). Consistent with scholarship, we define SFWB as a broad set of emotions and attitudes about current and future finances, including future orientation and optimism, risk aversion, and sense of financial control (Vera-Toscano, Ateca-Amestoy, and Serrano-Del-Rosal 2006; Zyphur et al. 2015). SFWB is an inherently comparative concept, in which individuals compare their circumstances both with others and with their experiences and expectations (Vera-Toscano, Ateca-Amestoy, and Serrano-Del-Rosal 2006). Although untested, SFWB among child households could more likely be affected by wealth than income or other measures of socioeconomic status. Higher net worth may increase parents' future orientation and optimism while decreasing their risk aversion, all of which could lead to reduced stress and greater investments in children. Higher debt,

however, could increase future orientation in a way that increases stress and decreases optimism.

Future Expectations for Children

More than income, wealth may influence parent and child expectations about children's education and future trajectories. In a process he calls "the construction of future possibilities," Michael Sherraden (1991, 152) hypothesizes that assets promote future orientation by creating real and perceived opportunity, which is internalized by both children and their parents. Empirical studies provide support for Sherraden's hypothesis: homeownership and other assets are often more predictive of parental expectations for their children's education than income is (Zhan and Sherraden 2003). Experiments in psychology also suggest that wealth may positively shape children's aspirations for college or other goals (Destin and Oyserman 2009). The positive relationship between wealth and college outcomes is likely mediated through parental expectations (Shanks and Destin 2009; Elliott, Destin, and Friedline 2011), and parental expectations may be a stronger explanatory factor for the effects of wealth on educational attainment than parental investments (Diemer, Marchand, and Mistry 2020). Consistent with this mechanism, Jin Huang and colleagues (2021, this issue) provide evidence that child development accounts raise parental expectations about their child's educational future.

Potential Moderators

Informed by life course and developmental theory, our model hypothesizes that some mechanisms are likely more relevant during certain developmental stages than others. For example, although wealth could reduce parental stress and improve parental warmth and sensitivity at any point, those effects might be most important in early childhood when children are developing secure attachments and foundational cognitive and behavioral skills. Likewise, parental optimism, and parent and child expectations about the future, may be of particular significance as children begin the transition to young adulthood and make choices about their post-secondary-education paths. The few studies on wealth effects by child age have provided conflicting evidence as to whether effects vary by age (Yeung and Conley 2008; Diemer, Marchand, and Mistry 2020). In one of the first studies to use a developmental lens to examine changes in wealth and outcomes at different points in childhood, Portia Miller and colleagues (2021, this issue) hypothesize that the effects would grow with age but find consistent beneficial effects of wealth on cognition and behavior regardless of age.

Other potential moderators include family size, wealth composition, and wealth levels. Given the same wealth, a larger family will have fewer resources per child than a smaller family. Yet some of the hypothesized benefits of wealth, including insurance and class status, are not divisible. For instance, class status is likely determined by total wealth and attributed equally to all children regardless of number. Among other things, these attributes of wealth make it unclear whether it should be adjusted for family size in studies describing wealth during childhood (for a larger discussion on whether estimates of wealth should be adjusted by household size, see Killewald, Pfeffer, and Schachner 2017). Also, different components of wealth (debt, homeownership) may have different qualitative meaning to families, suggesting that a family's wealth composition may moderate the effects of wealth on children. For instance, unsecured debt has been associated with negative child outcomes in part because it increases stress (Berger and Houle 2019). However, debt may also signify increased opportunity for children, as would happen if parents take on increased mortgage debt to secure access to higher quality schools or safer neighborhoods (Conwell and Ye 2021, this issue). Finally, the marginal value to parents and children of an additional $1 in wealth likely diminishes because wealthy families may derive less utility from increases in net worth than less affluent ones. The association between wealth and child well-being may also be nonlinear if families have achieved a specified threshold of wealth (for example, to weather a short-term job loss or to fund a college degree). To date, however, we are not aware of any studies that have investigated the marginal utility or threshold effects of wealth.

CONTRIBUTIONS TO THIS VOLUME

The volume begins with two articles describing the contours of wealth for American child households. First, to understand child household wealth inequality in the global context, Fabian Pfeffer and Nora Waitkus conducted the first cross-national comparison of wealth among children using the Luxembourg Wealth Study. Consistent with the life-cycle hypothesis of wealth accumulation (Modigliani 1988), they find that across the fourteen countries studied, children have higher levels of wealth inequality than the elderly. Additionally, the degree of wealth inequality experienced by a country did not correlate with their level of income inequality. Notably, the United States stands out in this analysis for having exceptionally high levels of wealth (and income) inequality among child households.

The next study describes a uniquely twenty-first-century dimension of wealth inequality—"financially intensive parenting"—a term Nina Bandelj and Angelina Grigoryeva coin to describe how some American parents are increasingly directing more resources toward child-centric savings and borrowing. Their analyses using the SCF show that parental investing, saving, and borrowing for children differ by family wealth and parent race-ethnicity. White parents with wealth above median levels accumulate relatively high levels of child-centric assets, whereas black and Hispanic parents across the wealth distribution accumulate (by comparison) fewer child-centric assets, and for black parents, higher levels of educational debt. They conclude that increasing disparities in financially intensive parenting likely contribute to inequality in educational opportunities for children by economic circumstances and race-ethnicity.

Moving from contours to consequences, the next set of studies considers how wealth and its unequal distribution may contribute to child well-being. Evidence of the protective effects of wealth is found in Courtney Boen, Lisa Keister, and Nick Graetz's examination of the associations between wealth and child BMI using the Panel Study of Income Dynamics (PSID). They find that higher levels of parental wealth, even after adjusting for a host of conventional socioeconomic status markers (such as maternal education, income, health insurance status), were associated with lower BMI and decreased obesity risk. The results were consistent across types of assets and debts, except for home equity, which was negatively associated with child BMI. The effects of wealth on child BMI operate not only directly, as they do in adults, but also indirectly through household spending and family stress processes. This study offers important new evidence on the linkages between wealth and population health disparities.

Using the National Longitudinal Survey of Youth 1979 (NLSY79), Jordan Conwell and Leafia Zi Ye investigate racial and ethnic gaps in achievement for households with the same levels of wealth. They find that, in families with the same net worth, black and Hispanic children have lower standardized math and reading scores relative to white children. Racial disparities in achievement for same-wealth families were explained both by racial-ethnic differences in the demographics of same-wealth families and in the composition of wealth. Notably, relative to white families with the same net worth, black and Hispanic families had fewer liquid assets and less "good" debt, such as housing debt. These results highlight the nuanced ways in which economic and racial-ethnic disadvantage may intersect and the potential benefits of certain types of debt for purchasing "developmentally advantageous school and neighborhood contexts."

Further underscoring the importance of debt type is the study by Lenna Nepomnyaschy and colleagues, which examines unsecured debt, including credit card debt, loans, and child support arrears, among children with nonresident fathers. Using the Fragile Families and Child Wellbeing Study, the authors find that nonresident fathers' child support arrears, which are often not measured in other surveys about wealth, were a large proportion of nonresident fathers' debt. In addition, child support arrears were associated with decreased socioemotional functioning for nine- and fifteen-year-olds. Notably, these negative associations did not hold for other types of unsecured debt, suggesting that child support arrears play a unique (but heretofore overlooked) role in the lives of low-income children.

Consistent with the hypothesis in the con-

ceptual framework that wealth serves as a source of security, Portia Miller and coauthors provide the first evidence that wealth may be protective for low-income children. In their investigation of the associations between parental wealth and child outcomes at three developmental stages (preschool, middle age, and adolescence), wealth was positively correlated with cognitive achievement and negatively correlated with behavioral problems at all three time points. The estimated effects of wealth were also larger than the effects of income. Notably, among households with low levels of income, wealth was associated with better outcomes for children, perhaps because these families could draw on the resources that wealth offers. An implication of their work is that children in families that are both low wealth and low income are at particular risk of poor outcomes.

The final set of studies examine policies that, either directly or indirectly, promote asset accumulation. Jin Huang and colleagues describe one of the few U.S. policy models for increasing savings in low-income child households, Child Development Accounts (CDAs), illustrated by the Saving for Education, Entrepreneurship, and Downpayment program in Oklahoma (SEED OK). After summarizing the impacts of SEED OK, which increased family educational savings and reduced maternal depression and punitive parenting practices, the authors propose ten design features of universal, progressive, and lifelong CDAs. Seven states have already adopted this policy model in some form, and more are likely to follow, making the insights of these authors valuable to guiding future policy development.

Examining the possibility that income-support programs have positive spillovers on wealth accumulation, Katherine Michelmore and Leonard Lopoo estimate the effects on wealth of the Earned Income Tax Credit (EITC) using the PSID. They find that exposure to the EITC during early childhood (up to five years) increases familial wealth during middle childhood (six to ten years), particularly among families with a less-educated head of household. These effects operated through increased funds in checking, savings, and retirement accounts, and higher amounts of home equity. Greater

EITC exposure was also associated with higher amounts of credit card debt. The authors find some suggestive evidence that the program increases low-income families' position in the wealth distribution as well as their individual wealth level.

Margo Jackson, Chinyere Agbai, and Emily Rauscher use simulated Medicaid eligibility to investigate how state-level generosity in Medicaid affects wealth among families with children. Using the NLSY79, the authors find that an increase in prenatal and infant eligibility of one standard deviation—roughly equivalent to the difference between Massachusetts and Oklahoma in the early 1990s—was associated with a 22 percent increase in savings and retirements amounts. Medicaid eligibility was also associated with higher average home mortgage amounts, but not home value, overall net worth, or other forms of debt. In addition, the positive associations with savings and mortgages were only evident for non-Hispanic white and more highly educated mothers. The unequal results by demographic group suggest that increasing eligibility for Medicaid may exacerbate, rather than mitigate, existing differences in wealth among child households.

Research Implications

The work presented in this volume address some of the most pressing questions regarding wealth and child well-being, but many unknowns remain. We still know relatively little about how wealth varies across a child's life course, and we are only beginning to understand whether the importance of wealth in determining child well-being varies by developmental stage (Miller et al. 2021; Nepomnyaschy et al. 2021). Emerging evidence also suggests that assets and debts may operate differently in the lives of children (Conwell and Ye 2021), but we do not yet understand the theoretical or mechanistic reasons why this is so. Additionally, research has yet to address how household wealth intersects with salient contexts of the child's life because most studies operationalize wealth as acting independently of factors such as school quality or neighborhood context. Although it is clear that wealth inequality for American children far outstrips that in other countries (Pfeffer and Waitkus 2021), the social

and policy levers that account for that differential are unknown. Finally, despite some emerging evidence, the work on how policies affect levels of wealth for children is sparse.

These questions could be more readily answered if scholars did not face data limitations in measuring the contours and consequences of wealth for children. Analysts must choose between data sources that fully capture the American wealth distribution but offer no data on child well-being (the SCF), and data sources that collect information on child outcomes but omit the very wealthiest households (the PSID and NLSY). The lack of the very wealthiest households is a notable omission given that American wealth for child households is even more highly skewed than wealth among the general population (Gibson-Davis and Percheski 2018). In the absence of complete wealth data, scholars have used homeownership or home equity, which is available in a lot more surveys, as a proxy for wealth (Pfeffer 2018). Doing so, however, ignores variations in wealth among nonhomeowners. This incomplete measure is particularly problematic for analyses of racial-ethnic disparities in wealth, given that more than half of Hispanic and two-thirds of black child households do not own homes (Percheski and Gibson-Davis 2020). Extant data sources also omit information on citizenship and nativity status, which are likely to be salient to wealth among child households, particularly Hispanic ones.

In addition, currently available data do not include several types of debt for child households, including child support arrears, criminal justice debt, and medical debt. As Nepomnyaschy and coauthors demonstrate in their article in this volume, child support arrears are the primary source of debt for low-income fathers. Outside the Fragile Families and Child Wellbeing Study these authors use, however, no data source of which we are aware collects data on child support arrears. Only one survey, the Survey of Household Economics and Decision-making, has collected data on legal debt, adding these questions in 2019, but the data cannot be disaggregated to families with children. The development of new data sources or expansions of existing ones with an eye toward valid and reliable measurement of all possible compo-

nents of wealth and of multiple domains of child well-being would be extremely valuable.

To the extent possible, analysts should also consider specific components of wealth that are most salient for their research questions. Child household net worth portfolios are heterogeneous, with households varying in the types of assets and debts they hold, as well as the relative amounts of assets versus debts (Conwell and Ye 2021, this issue). Households that are asset heavy versus those that are debt heavy may differ in their constraints and psychological resources (Berger and Houle 2016, 2019). Additionally, asset and debt ownership vary by race and ethnicity, with white households being more likely to have the kinds of debts that might promote child well-being (mortgage-related debt). Variation in asset and debt ownership, when coupled with an endogenous association with race and ethnicity, complicates the analytic task as to how wealth relates to child well-being (Conwell and Ye 2021, this issue).

A final consideration for analysts is whether they are concerned about inadequate levels of wealth or inequities in wealth ownership. The wealth distribution among child households is characterized by both low levels of wealth for many and an astoundingly large gap between those at the top and those at the bottom. Studies on children over eighteen suggest that both wealth scarcity and wealth inequality are important (Pfeffer 2018), but work focusing on this topic for children under eighteen is scant.

The articles in this volume highlight several possible avenues for addressing key methodological challenges in operationalizing and analyzing wealth inequalities. For instance, the lack of overlap in the wealth distribution between white and black or Hispanic households can create common support problems that bias estimates or make them imprecise. Articles in this volume deal with this challenge by using fewer comparison groups (see Bandelj and Grigoryeva 2021) or comparing racial and ethnic differences for households with the same levels of wealth, such as at the 25th percentile (Conwell and Ye 2021). Analysts focusing on wealth and child well-being also face methodological challenges that plague observational studies on economic scarcity more generally.

Establishing causality with observational data is difficult, and most analyses of wealth are limited to descriptive relationships. Even experimental and quasi-experimental studies that leverage policy shocks to income or wealth often test interventions that could change both income and wealth, making it difficult to disentangle the effects of each separately. Huang and colleagues (2021) offer a promising example of interventions designed to change wealth without changing income.

Policy Implications

The United States has never had a cohesive policy approach to wealth. Relative to that on income poverty and inequality, for example, far less policy consensus exists as to whether wealth inequality or insufficient wealth ownership are problems worthy of government intervention. Not surprisingly, then, no wealth analog exists for the multitude of income-based safety net programs at the federal, state, and local levels that offer cash assistance, in-kind goods, and direct services. The hodgepodge of policies that do affect asset and debt accumulation include financial regulations, tax policies, and small, local, asset accumulation programs. President-elect Joe Biden has indicated support for several policies that would directly address wealth, including plans to provide relief from college debt, the establishment of "Baby Bonds," a child development account given to all children in the United States at birth (Hamilton and Darity 2010), and higher taxes on corporations and capital gains. Biden's plans would be the most comprehensive political effort to address wealth inequality, but it remains to be seen how many will come to fruition.

A key step to analyzing the policies related to wealth and wealth inequality is to agree on a definition of the problem: Are we most concerned about wealth disparities or inadequate wealth ownership? Does the kind of wealth matter? Should we promote asset accumulation or debt reduction? And should we worry about equalizing wealth by race, ethnicity, or social class, or attacking the underlying structural and racial problems that lead to such disparities? Depending on our problem definition, policies could be designed to promote multiple goals, including building savings and assets in low-wealth families, or in families of color; reducing "bad debt"; and reducing extreme wealth by individuals and firms. Some evidence is provided in this volume on the value of specific interventions for asset accumulation among low-wealth families, including both asset-building and income-support programs (Jackson, Agbai, and Rauscher 2021; Michelmore and Lopoo 2021; Huang et al. 2021). Notably, interventions to reduce inequality would need to be far more ambitious, targeting both the top and the bottom of the wealth distribution and redistributing wealth systematically and intergenerationally.

Defining the problem, setting the goals of wealth policy, and deciding on specific policy tools require not only more empirical evidence, but also agreement on the values and political interests of the American people. We offer three considerations to stimulate that discussion. First, our current policy approach to wealth promotes and protects wealth accumulation at the top, but this orientation is relatively recent. In the middle of the twentieth century, the heyday of the American Dream—at least for white, Christian Americans—income and estate tax rates were both around 70 percent and corporate tax rates were around 50 percent. Currently, many forms of income generated from wealth are tax free (Tax Policy Center 2020); corporate taxes are set at historically low levels (21 percent) and relatively easy to avoid (Saez and Zucman 2019); and tax-exempt investment vehicles in retirement and education primarily benefit higher-income families (Pressman and Scott 2017; Toder, Khitatrakun, and Boddupalli 2020). Individual estates are exempt from taxes up to a jaw-dropping $11.6 million. In addition to those to tax wealth, proposals exist to limit or replace tax exemptions and deductions with credits that benefit low- to middle-income families (Gale 2017; Toder, Khitatrakun, and Boddupalli 2020).

Second, policies to address wealth inequality must consider the trade-offs between universal versus targeted approaches, a key tension in U.S. social policy generally. Universal approaches garner more political support, less stigma, and fewer concerns about disincentivizing work; targeted approaches are better at

reaching those most in need and addressing inequities (Ellwood 1988). Current U.S. policies designed to address poverty and income inequality mix these approaches, as exemplified by Social Security (universal) and the EITC (targeted). These tensions will exist in the context of wealth interventions as well. In this issue, Huang and colleagues (2021) suggest that CDA accounts should take a universal approach. Another possibility is *targeted universalism*, a relatively recent framework in which goals are universal but interventions are targeted to the specific needs and burdens of historically marginalized groups (powell, Menendian, and Ake 2019). In terms of reducing wealth inequality, targeted universalism may point the way to more explicit acknowledgement of the role of racism and racist policies in the creation of black-white and Hispanic-white wealth gaps, and to more targeted interventions aimed at offering black and Hispanic families more opportunities to accumulate and keep wealth.

Third, asset limits in cash assistance programs are a barrier to wealth accumulation and social mobility. Most U.S. public assistance restricts eligibility to families without significant wealth. These policies are designed to cull families from the assistance rolls who have low income but substantial wealth. In practice, relatively few families fall into this category and asset tests (as these requirements are called) act as a direct barrier to low-income families' economic mobility (Ratcliffe et al. 2016). Owning a car or house or having college savings for a child can make a family ineligible for food assistance, the EITC, Medicaid, and other programs, which disincentivizes wealth accumulation. This problem could be solved administratively by removing asset limits or setting them at much higher levels. In the 1990s and 2000s, many states loosened asset tests for the Temporary Assistance for Needy Families and Supplemental Nutrition Assistance Program (SNAP). The evidence on the effects of these reforms on asset accumulation are mixed, but it has been noted that raising asset limits for one program (such as SNAP) may not be sufficient because most low-income families receive multiple means-tested benefits all with different asset limits (Nam, Ratcliffe, and McKernan 2008).

CONCLUSION

We are gaining a deeper and more troubling understanding of the contours of wealth for American children. As a country, America stands apart from other Western democracies, insofar as levels of child household wealth are distributed far more unequally than in other parts of the globe (Pfeffer and Waitkus 2021, this issue). Racial and ethnic disparities are profound, with black and Hispanic families having pennies on the dollar for every dollar of white wealth. Mechanisms to promote wealth building—homeownership, savings, and stock participation—are characterized by structural and racial inequities that keep them out of the hands of many (Bandelj and Grigoryeva 2021, this issue; Conwell and Ye 2021, this issue). Policies and practices to build wealth among families with children have been scattered and diffuse, and some policies may inadvertently increase wealth inequality rather than reduce it (Jackson, Agbai, and Rauscher 2021, this issue; Michelmore and Lopoo 2021, this issue).

Following prior scholarship, we argue that the relevance of wealth to families and children is threefold: wealth provides resources, security, and class status. These theoretical linkages between wealth and child well-being overlap with, but remain distinct from, those of income. The conceptual difference is most obvious in terms of security: income, which can fluctuate considerably within years and months, likely does not engender the same feelings of economic and psychological security that wealth provides. But the conceptual differences between the two are evident in other ways. The physical manifestations of wealth—most notably, homeownership, and neighborhood choice—shape child opportunities and expectations that exist independently from income (Chetty and Hendren 2018). Perhaps more than they do income, parents may use their levels of wealth as cues to their child's future life chances (Huang et al. 2021, this issue) and shape their current parental investment choices accordingly.

Given the role that wealth plays in family functioning, it is no surprise, then, that wealth is related to child outcomes (Orr 2003; Yeung and Conley 2008; Friedline, Masa, and Chowa 2015). As demonstrated in this volume and else-

where, lower levels of parental wealth are correlated with lower levels of academic performance, worse physical health, impaired social and behavioral outcomes, and fewer years of completed schooling (Pfeffer 2018; Diemer, Marchand, and Mistry 2020; Boen, Keister, and Graetz 2021, this issue; Miller et al. 2021, this issue; Nepomnyaschy et al. 2021, this issue). Wealth effects remain after accounting for income, and the association between wealth and child well-being may be larger in magnitude than the association between income and child well-being (Miller et al. 2021, this issue). Wealth appears to be beneficial for children across developmental stages and across racial-ethnic identities (Diemer, Marchand, and Mistry 2020; Conwell and Ye 2021, this issue; Miller et al. 2021, this issue), but equalizing wealth would not be enough to eliminate race- and ethnic-based gaps in achievement (Conwell and Ye 2021, this issue).

Wealth inequality among child households is rising faster than among the general population, showing no indication that the pace will slow. A relatively small group of parents—mostly white—control the lion's share of wealth that is available to children (Gibson-Davis and Percheski 2018). A sizable share of American children, and a large majority of black and Hispanic children, grow up in households with very low levels of wealth and are likely to have low levels of wealth as adults. Wealth appears to be critical to the successful flourishing of children (Miller et al. 2021, this issue), yet policies and practices are just beginning to grapple with the consequences of wealth's inequitable distribution. Equalizing wealth among white and black children may not be enough to eliminate racial disparities in academic achievement, but the current gaps are without question adversely shaping the life experiences and chances of black and brown children. We call on scholars, policymakers, and practitioners to address the unequal distribution of wealth among children in the United States and to understand that unabated increases in wealth inequality are likely to have negative repercussions for all of American society, but particularly for black and brown children. We hope this volume sparks even greater research study and engagement with advocates and decision makers

that will inform a coherent framework for wealth policy.

APPENDIX

Data are from the Survey of Consumer Finances (SCF), a repeated cross-sectional study of U.S. households conducted by the Federal Reserve triennially. The SCF is considered the best source of wealth data in the United States because it includes both a nationally representative sample of households and a sample of high-income households designed to represent the distribution of net worth (Keister 2014; Kennickell 2008). Because the SCF's unit of analysis is the primary economic unit, which is akin to the census definition of a household, we refer to our unit of analysis as households. We used ten SCF waves between 1989 and 2019 and report monetary estimates in 2019 dollars.

The primary sample consisted of households in which the household contained at least one member under the age of eighteen. Of those under eighteen, 98 percent were designated as a child of the respondent or their spouse's child; we refer to these household members as children. This definition excludes households with children who reside elsewhere and may include households with resident children over eighteen.

We define net worth as the value of total household assets less total debts. Assets include the value of savings and checking accounts, certificates of deposit, pooled investment accounts, stocks, bonds, retirement accounts, the value of the primary residence and other real estate, business assets, tangible assets (such as art and jewelry), and assets not classified elsewhere. Debts include mortgages on the primary residence, mortgages on other real estate, business debt, credit card debt, educational debt, vehicle loans, and other liabilities.

Following previous work (Wolff 2018), our measure of net worth excludes the future value of pension and Social Security income, assets that a household may realize in the future but does not currently possess. We also exclude the value of a household's vehicles because such vehicles typically have a high consumptive value (for example, are necessary transportation for work) and cannot realistically be converted to cash.

Our descriptive analysis stratified our analysis by the following covariates. Race-ethnicity measured whether the head of the household was non-Hispanic white, non-Hispanic black, or Hispanic (the SCF's public use version does not include any additional racial or ethnic categories). Marital status measured whether the head was married (1 = married). Education of the head consisted of four categories, measured dichotomously: no high school diploma, high school diploma (omitted category), some college, bachelor's degree or more. Age of the oldest child in the household was measured in the following ranges: younger than six, seven to twelve, or twelve to seventeen (continuous measures of child's age were not available). Family income included earnings, rents, alimony or child support, and all other types of income.

Our first analyses present a number of descriptive measures on wealth and wealth inequality, presented for the full sample, and then stratified by the presence of a resident child. We then present descriptive statistics on the ownership and presence of assets and debts, and, conditional on the presence of that asset or debt, the median amount held or owed. We also examine the amount of wealth held by families at different parts of the distribution. The last set of analyses focuses on child households and examines how wealth levels vary by the sociodemographic characteristic of the household head, as well as asset and debt ownership by the race and ethnicity of the household head. All analyses were adjusted for survey design and survey nonresponse using SCF sampling weights.

REFERENCES

Addo, Fenaba R. 2014. "Debt, Cohabitation, and Marriage in Young Adulthood." *Demography* 51(5): 1677–701.

Addo, Fenaba R., Jason N. Houle, and Sharon Sassler. 2019. "The Changing Nature of the Association between Student Loan Debt and Marital Behavior in Young Adulthood." *Journal of Family and Economic Issues* 40(1): 86–101.

Agius Vallejo, Jody, and Lisa A. Keister. 2019. "Immigrants and Wealth Attainment: Migration, Inequality, and Integration." *Journal of Ethnic and Migration Studies* 46(18): 3745–761.

Ando, Albert, and Franco Modigliani. 1963. "The 'Life Cycle' Hypothesis of Saving: Aggregate Implications and Tests." *American Economic Review* 53(1): 55–84.

Autor, David H. 2014. "Skills, Education, and the Rise of Earnings Inequality Among the 'Other 99 Percent'." *Science* 344(6186): 843–51.

Autor, David H., Lawrence F. Katz, and Melissa S. Kearney. 2008. "Trends in U.S. Wage Inequality: Revising the Revisionists." *Review of Economics and Statistics* 90(2): 300–23.

Bandelj, Nina, and Angelina Grigoryeva. 2021. "Investment, Saving, and Borrowing for Children: Trends by Wealth, Race, and Ethnicity, 1998–2016." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 50–57. DOI: 10.7758 /RSF.2021.7.3.03.

Baum, Sandy. 2016. *Student Debt: Rhetoric and Realities of Higher Education Financing*. New York: Springer.

Belley, Philippe, and Lance Lochner. 2007. "The Changing Role of Family Income and Ability in Determining Educational Achievement." *Journal of Human Capital* 1(1): 37–89.

Berger, Lawrence M., and Jason N. Houle. 2016. "Parental Debt and Children's Socioemotional Well-Being." *Pediatrics* 137(2): e20153059.

——. 2019. "Rising Household Debt and Children's Socioemotional Well-Being Trajectories." *Demography* 56(4): 1273–301.

Bhutta, Neil, Jesse Bricker, Andrew C. Chang, Lisa J. Dettling, Sarena Goodman, Joanne W. Hsu, Kevin B. Moore, Sarah Reber, Alice H. Volz, and Richard A. Windle. 2019. "Changes in U.S. Family Finances from 2016 to 2019: Evidence from the Survey of Consumer Finances." *Federal Reserve Bulletin* 106(5): 1–42.

Board of Governors of the Federal Reserve System (Federal Reserve). 2020a. Survey of Consumer Finances data set. Washington: Federal Reserve. Last modified November 17. Available at: https:// www.federalreserve.gov/econres/scfindex.htm.

——. 2020b. "Update on the Economic Well-Being of U.S. Households: July 2020 Results." Washington: Federal Reserve. Accessed December 14, 2020. https://www.federalreserve.gov/publica tions/2020-update-economic-well-being-of-us -households-preface.htm.

Boen, Courtney, Lisa A. Keister, and Nick Graetz. 2021. "Household Wealth and Child Body Mass Index: Patterns and Mechanisms." *RSF: The Rus-*

sell Sage Foundation Journal of the Social Sciences* 7(3): 80–100. DOI: 10.7758/RSF.2021.7.3.04.

Bradley, Robert H., and Robert F. Corwyn. 2002. "Socioeconomic Status and Child Development." *Annual Review of Psychology* 53(1): 371–99.

Chetty, Raj, and Nathaniel Hendren. 2018. "The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects." *Quarterly Journal of Economics* 133(3): 1107–162.

Child Trends. 2016. "Racial and Ethnic Composition of the Child Population." Washington, D.C.: Child Trends. Accessed December 14, 2020. https://www.childtrends.org/indicators/racial-and-ethnic-composition-of-the-child-population.

Conger, Rand D., and Glen H. Elder Jr. 1994. *Families in Troubled Times*. New York: Walter de Gruyter.

Conger, Rand D., Xiaojia Ge, Glen H. Elder Jr., Frederick O. Lorenz, and Ronald L. Simons. 1994. "Economic Stress, Coercive Family Process, and Developmental Problems of Adolescents." *Child Development* 65(2): 541–61.

Conley, Dalton. 1999. *Being Black, Living in the Red: Race, Wealth, and Social Policy in America*. Berkeley: University of California Press.

———. 2001. "Capital for College: Parental Assets and Postsecondary Schooling." *Sociology of Education* 74(1): 59–72.

Conwell, Jordan A., and Leafia Zi Ye. 2021. "All Wealth Is Not Created Equal: Race, Parental Net Worth, and Children's Achievement." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 101–21. DOI: 10.7758/RSF.2021.7.3.05.

Darity, William A., Jr., and A. Kirsten Mullen. 2020. *From Here to Equality: Reparations for Black Americans in the Twenty-First Century*. Chapel Hill: University of North Carolina Press.

Destin, Mesmin. 2013. "Integrating Resource-Based and Person-Based Approaches to Understanding Wealth Effects on School Achievement." *Economics of Education Review* 33 (April): 171–78.

Destin, Mesmin, and Daphna Oyserman. 2009. "From Assets to School Outcomes: How Finances Shape Children's Perceived Possibilities and Intentions." *Psychological Science* 20(4): 414–18.

Destin, Mesmin, Scott Richman, Fatima Varner, and Jelani Mandara. 2012. "'Feeling' Hierarchy: The Pathway from Subjective Social Status to

Achievement." *Journal of Adolescence* 35(6): 1571–579.

Diemer, Matthew A., Aixa D. Marchand, and Rashmita S. Mistry. 2020. "Charting How Wealth Shapes Educational Pathways from Childhood to Early Adulthood: A Developmental Process Model." *Journal of Youth and Adolescence* 49 (November): 1073–91.

Doren, Catherine, and Eric Grodsky. 2016. "What Skills Can Buy: Transmission of Advantage Through Cognitive and Noncognitive Skills." *Sociology of Education* 89(4): 321–42.

Duncan, Greg J., and Jeanne Brooks-Gunn. 1997. *Consequences of Growing Up Poor*. New York: Russell Sage Foundation.

Duncan, Greg J., Katherine Magnuson, and Elizabeth Votruba-Drzal. 2014. "Boosting Family Income to Promote Child Development." *The Future of Children* 24(1): 99–120.

Elliott, William, III, Mesmin Destin, and Terri Friedline. 2011. "Taking Stock of Ten Years of Research on the Relationship Between Assets and Children's Educational Outcomes: Implications for Theory, Policy and Intervention." *Children and Youth Services Review* 33(11): 2312–28.

Ellwood, David T. 1988. *Poor Support: Poverty in the American Family*. New York: Basic Books.

England, Paula, Lawrence L. Wu, and Emily F. Shafer. 2013. "Cohort Trends in Premarital First Births: What Role for the Retreat from Marriage?" *Demography* 50(6): 2075–104.

Evans, Gary W., and Theodore D. Wachs, eds. 2010. *Chaos and Its Influence on Children's Development: An Ecological Perspective*. Washington, D.C.: American Psychological Association.

Faber, Jacob W. 2013. "Racial Dynamics of Subprime Mortgage Lending at the Peak." *Housing Policy Debate* 23(2): 328–49.

Fingerman, Karen L., Laura E. VanderDrift, Aryn M. Dotterer, Kira S. Birditt, and Steven H. Zarit. 2011. "Support to Aging Parents and Grown Children in Black and White Families." *The Gerontologist* 51(4): 441–52.

Friedline, Terri, Rainer D. Masa, and Gina A. Chowa. 2015. "Transforming Wealth: Using the Inverse Hyperbolic Sine (Ihs) and Splines to Predict Youth's Math Achievement." *Social Science Research* 49 (January): 264–87.

Gale, William G. 2017. "It's Time to Gut the Mortgage Interest Deduction." *Up Front* (Brookings Institute blog), November 6. Accessed December

14, 2020. https://www.brookings.edu/blog/up -front/2017/11/06/its-time-to-gut-the-mortgage -interest-deduction.

Gale, William G., and John K. Scholz. 1994. "Inter-generational Transfers and the Accumulation of Wealth." *Journal of Economic Perspectives* 8(4): 145–60.

Gibson-Davis, Christina M., and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequal-ity Among America's Dependents." *Demography* 55(3): 1009–32.

Goodman, Elizabeth, Ben C. Amick, Maureen O. Rezendes, Sol Levine, Jerome Kagan, William H. Rogers, and Alvin R. Tarlov. 2000. "Adolescents' Understanding of Social Class: A Comparison of White Upper Middle Class and Working Class Youth." *Journal of Adolescent Health* 27(2): 80–83.

Hamilton, Darrick, and William A. Darity Jr. 2010. "Can 'Baby Bonds' Eliminate the Racial Wealth Gap in Putative Post-Racial America?" *Review of Black Political Economy* 37(3-4): 207–16.

Hardie, Jessica H., and Judith A. Seltzer. 2016. "Parent-Child Relationships at the Transition to Adulthood: A Comparison of Black, Hispanic, and White Immigrant and Native-Born Youth." *Social Forces* 95(1): 321–53.

Hardy, Bradley L., and Trevon D. Logan. 2020. "Racial Economic Inequality Amid the COVID-19 Crisis." Washington, D.C.: Brookings Institution. Accessed December 14, 2020. https://www .brookings.edu/wp-content/uploads/2020/08 /EA_HardyLogan_LO_8.12.pdf.

Harris, Alexes, Heather Evans, and Katherine Beck-ett. 2010. "Drawing Blood from Stones: Legal Debt and Social Inequality in the Contemporary United States." *American Journal of Sociology* 115(6): 1753–99.

Haughwout, Andrew, Donghoon Lee, Joelle W. Scally, Lauren Thomas, and Wilbert van der Klaauw. 2019. "Trends in Household Debt and Credit." Staff Report no. 882. New York: Federal Reserve Bank of New York.

Houle, Jason N. 2014. "A Generation Indebted: Young Adult Debt Across Three Cohorts." *Social Problems* 61(3): 448–65.

Hoynes, Hilary, Douglas L. Miller, and Jessamyn Schaller. 2012. "Who Suffers During Reces-sions?" *Journal of Economic Perspectives* 26(3): 27–48.

Huang, Jin, Michael Sherraden, Margaret M. Clancy,

Sondra G. Beverly, Trina R. Shanks, and Youngmi Kim. 2021. "Asset Building and Child Develop-ment: A Policy Model for Inclusive Child Devel-opment Accounts." *RSF: The Russell Sage Foun-dation Journal of the Social Sciences* 7(3): 176–95. DOI: 10.7758/RSF.2021.7.3.08.

Jackson, Margot, Chinyere Agbai, and Emily Rauscher. 2021. "The Effects of State-Level Med-icaid Coverage on Family Wealth." *RSF: The Rus-sell Sage Foundation Journal of the Social Sci-ences* 7(3): 216–34. DOI: 10.7758/RSF.2021.7.3.10.

Jez, Su Jin. 2014. "The Differential Impact of Wealth Versus Income in the College-Going Process." *Research in Higher Education* 55(7): 710–34.

Keister, Lisa A. 2014. "The One Percent." *Annual Re-view of Sociology* 40(1): 347–67.

Keister, Lisa A., and Stephanie Moller. 2000. "Wealth Inequality in the United States." *Annual Review of Sociology* 26(1): 63–81.

Kennickell, Arthur B. 2008. "The Role of Over-Sampling of the Wealthy in the Survey of Con-sumer Finances." *Irving Fisher Committee Bulle-tin* 28(August): 403–08.

Killewald, Alexandra, and Brielle Bryan. 2018. "Fall-ing Behind: The Role of Inter-and Intragenera-tional Processes in Widening Racial and Ethnic Wealth Gaps Through Early and Middle Adult-hood." *Social Forces* 97(2): 705–40.

Killewald, Alexandra, Fabian T. Pfeffer, and Jared N. Schachner. 2017. "Wealth Inequality and Accu-mulation." *Annual Review of Sociology* 43(1): 379–404.

Mani, Anandi, Sendhil Mullainathan, Eidar Shafir, and Jiaying Zhao. 2013. "Poverty Impedes Cogni-tive Function." *Science* 341(6149): 976–80.

Manning, Robert D., and Anita C. Butera. 2010. "Consumer Credit and Household Debt." In *Ency-clopedia of Contemporary American Social Issues*, edited by Michael Shalley-Jensen. Santa Barbara, Calif.: ABC-CLIO/Greenwood.

Massey, Douglas S. 2015. "The Legacy of the 1968 Fair Housing Act." *Sociological Forum* 30 (June): 571–88.

Mayer, Susan E. 1997. *What Money Can't Buy: Family Income and Children's Life Chances*. Cambridge, Mass.: Harvard University Press.

McLoyd, Vonnie C. 1990. "The Impact of Economic Hardship on Black Families and Children: Psy-chological Distress, Parenting, and Socioemo-tional Development." *Child Development* 61(2): 311–46.

———. 1998. "Socioeconomic Disadvantage and Child Development." *American Psychologist* 53(2): 185–204.

Michelmore, Katherine, and Leonard M. Lopoo. 2021. "Exposure to the Earned Income Tax Credit in Early Childhood and Family Wealth." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 196–215. DOI: 10.7758/RSF.2021.7.3.09.

Miller, Portia, Tamara Podvysotska, Laura Betancur, and Elizabeth Votruba-Drzal. 2021. "Wealth and Child Development: Differences in Associations by Family Income and Developmental Stage." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 152–74. DOI: 10.7758/RSF.2021.7.3.07.

Mistry, Rashmita S., Christia S. Brown, Elizabeth S. White, Kirby A. Chow, and Cari Gillen-O'Neel. 2015. "Elementary School Children's Reasoning About Social Class: A Mixed-Methods Study." *Child Development* 86(5): 1653–671.

Mistry, Rashmita S., Elizabeth A. Vandewater, Aletha C. Huston, and Vonnie C. McLoyd. 2002. "Economic Well-Being and Children's Social Adjustment: The Role of Family Process in an Ethnically Diverse Low-Income Sample." *Child Development* 73(3): 935–51.

Modigliani, Franco. 1988. "The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth." *Journal of Economic Perspectives* 2(2): 15–40.

Myers, Dowell, and Seong Woo Lee. 1998. "Immigrant Trajectories into Homeownership: A Temporal Analysis of Residential Assimilation." *International Migration Review* 32(3): 593–625.

Nam, Yunju, Caroline Ratcliffe, and Signe-Mary McKernan. 2008. "Effects of Asset Tests and Ida Programs." In *Asset Building and Low-Income Families*, edited by Signe-Mary McKernan and Michael Sherraden. Washington, D.C.: Urban Institute Press.

Nepomnyaschy, Lenna, Allison Dwyer Emory, Kasey J. Eickmeyer, Maureen R. Waller, and Daniel P. Miller. 2021. "Parental Debt and Child Well-Being: What Type of Debt Matters for Child Outcomes?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 122–51. DOI: 10.7758/RSF.2021.7.3.06.

Oliver, Melvin L., and Thomas Shapiro. 1995. *Black Wealth, White Wealth: A New Perspective on Racial Inequality*. New York: Routledge.

Orr, Amy J. 2003. "Black-White Differences in Achievement: The Importance of Wealth." *Sociology of Education* 76(4): 281–304.

Percheski, Christine, and Christina Gibson-Davis. 2020. "A Penny on the Dollar: Racial Inequalities in Wealth Among Households with Children." *Socius* 6 (January): 1–7.

Pfeffer, Fabian T. 2011. "Status Attainment and Wealth in the United States and Germany." In *Persistence, Privilege, and Parenting*, edited by Timothy M. Smeeding, Robert Erikson, and Markus Jäntti. New York: Russell Sage Foundation.

———. 2018. "Growing Wealth Gaps in Education." *Demography* 55(3): 1033–68.

Pfeffer, Fabian T., Sheldon Danziger, and Robert. F. Schoeni. 2013. "Wealth Disparities Before and After the Great Recession." *Annals of the American Academy of Political and Social Science* 650(1): 98–123.

Pfeffer, Fabian T., and Alexandra Killewald. 2018. "Generations of Advantage. Multigenerational Correlations in Family Wealth." *Social Forces* 96(4): 1411–42.

———. 2019. "Intergenerational Wealth Mobility and Racial Inequality." *Socius* 5. Published online March 21. Accessed December 14, 2020. DOI: 10.1177/2378023119831799.

Pfeffer, Fabian T., and Robert F. Schoeni. 2016. "How Wealth Inequality Shapes Our Future." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 2–22. DOI: 10.7758/RSF.2016.2.6.01.

Pfeffer, Fabian T., and Nora Waitkus. 2021. "Comparing Child Wealth Inequality Across Countries." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 28–49. DOI: 10.7758/RSF.2021.7.3.02.

powell, john a., Stephen Menendian, and Wendy Ake. 2019. *Targeted Universalism: Policy and Practice*. Berkeley: Haas Institute for a Fair and Inclusive Society, University of California.

Pressman, Steven, and Robert H. Scott III. 2017. "The Higher Earning in America: Are 529 Plans a Good Way to Save for College?" *Journal of Economic Issues* 51(2): 375–82.

Ratcliffe, Caroline, Signe-Mary McKernan, Laura Wheaton, Emma Kalish, Catherine Ruggles, Sara Armstrong, and Christina Oberlin. 2016. *Asset Limits, SNAP Participation, and Financial Stability*. Washington, D.C.: Urban Institute Press.

Ream, Robert K., and Michael A. Gottfried. 2019. "Household Wealth and Adolescents' Social-Emotional Functioning in Schools." *Social Science Research* 83: 102316.

Rothstein, Richard. 2017. *The Color of Law: A Forgotten History of How Our Government Segregated America*. New York: Liveright Publishing.

Rugh, Jacob S., and Douglas S. Massey. 2010. "Racial Segregation and the American Foreclosure Crisis." *American Sociological Review* 75(5): 629–51.

Saez, Emmanuel. 2017. "Income and Wealth Inequality: Evidence and Policy Implications." *Contemporary Economic Policy* 35(1): 7–25.

Saez, Emmanuel, and Gabriel Zucman. 2016. "Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data." *Quarterly Journal of Economics* 131(2): 519–78.

———. 2019. *The Triumph of Injustice: How the Rich Dodge Taxes and How to Make Them Pay*. New York: W. W. Norton.

Sánchez, Luis A. 2018. "Segmented Paths? Mexican Generational Differences in the Transition to First-Time Homeownership in the United States." *Journal of International Migration and Integration* 19(3): 737–55.

Schneider, Daniel. 2011. "Wealth and the Marital Divide." *American Journal of Sociology* 117(2): 627–67.

Shah, Anuj K., Eldar Shafir, and Sendhil Mullainathan. 2015. "Scarcity Frames Value." *Psychological Science* 26(4): 402–12.

Shah, Anuj K., Jiaying Zhao, Sendhil Mullainathan, and Eldar Shafir. 2018. "Money in the Mental Lives of the Poor." *Social Cognition* 36(1): 4–19.

Shanks, Trina R. 2007. "The Impacts of Household Wealth on Child Development." *Journal of Poverty* 11(2): 93–116.

Shanks, Trina R., and Mesmin Destin. 2009. "Parental Expectations and Educational Outcomes for Young African American Adults: Do Household Assets Matter?" *Race and Social Problems* 1(1): 27–35.

Shanks, Trina R., Youngmi Kim, Vernon Loke, and Mesmin Destin. 2010. "Assets and Child Well-Being in Developed Countries." *Children and Youth Services Review* 32(11): 1488–496.

Shapiro, Thomas M. 2004. *The Hidden Cost of Being African American: How Wealth Perpetuates Inequality*. New York: Oxford University Press.

Sherraden, Michael. 1991. *Assets and the Poor: A New American Welfare Policy*. Armonk, N.Y.: M. E. Sharpe.

Shonkoff, Jack. 2018. "Poverty and Child Development." In *Inequality in the 21st Century*, edited by David Grusky and Jasmine Hill. New York: Routledge.

Sykes, Brian L., and Michelle Maroto. 2016. "A Wealth of Inequalities: Mass Incarceration, Employment, and Racial Disparities in U.S. Household Wealth, 1996 to 2011." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 129–52. DOI: 10.7758/RSF.2016.2.6.07.

Tax Policy Center. 2020. *Key Elements of the U.S. Tax System*. Washington, D.C.: Tax Policy Center, Urban Institute, and Brookings Institution. Accessed December 14, 2020. https://www.taxpolicycenter.org/briefing-book/key-elements-us-tax-system.

Toder, Eric, Surachai Khitatrakun, and Aravind Boddupalli. 2020. *Tax Incentives for Retirement Savings*. Washington, D.C.: Tax Policy Center, Urban Institute, and Brookings Institution. Accessed December 14, 2020. https://www.taxpolicycenter.org/publications/tax-incentives-retirement-savings.

Vera-Toscano, Esperanza, Victoria Ateca-Amestoy, and Rafael Serrano-Del-Rosal. 2006. "Building Financial Satisfaction." *Social Indicators Research* 77(2): 211–43.

Wolff, Edward N. 2017. "Household Wealth Trends in the United States, 1962 to 2016: Has Middle Class Wealth Recovered?" *NBER* working paper no. 24085. Cambridge, Mass.: National Bureau of Economic Research.

———. 2018. "The Decline of African-American and Hispanic Wealth since the Great Recession." *NBER* working paper no. 25198. Cambridge, Mass.: National Bureau of Economic Research.

Yamokoski, Alexis, and Lisa A. Keister. 2006. "The Wealth of Single Women: Marital Status and Parenthood in the Asset Accumulation of Young Baby Boomers in the United States." *Feminist Economics* 12(1-2): 167–94.

Yellen, Janet L. 2016. "Perspectives on Inequality and Opportunity from the Survey of Consumer Finances." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(2): 44–59. DOI: 10.7758/RSF.2016.2.2.02.

Yeung, W. Jean, and Dalton Conley. 2008. "Black-White Achievement Gap and Family Wealth." *Child Development* 79(2): 303–24.

Yeung, W. Jean, Miriam R. Linver, and Jeanne Brooks-Gunn. 2002. "How Money Matters for Young Children's Development: Parental Investment and Family Processes." *Child Development* 73(6): 1861–79.

Zhan, Min, and Michael Sherraden. 2003. "Assets, Expectations, and Children's Educational Achievement in Female-Headed Households." *Social Service Review* 77(2): 191–211.

Zyphur, Michael J., Wen-Dong Li, Zhen Zhang, Richard D. Arvey, and Adam P. Barsky. 2015. "Income, Personality, and Subjective Financial Well-Being: The Role of Gender in Their Genetic and Environmental Relationships." *Frontiers in Psychology* 6(1): 1–16.

PART I

Trends and Descriptors of Childhood Wealth Inequality

Comparing Child Wealth Inequality Across Countries

FABIAN T. PFEFFER AND NORA WAITKUS

This article compares the wealth situation of children across fourteen countries. Children experience lower levels of wealth than the rest of the population, seniors in particular. We show that, in most countries, child wealth is distributed substantially more unequally than the wealth of seniors. We also demonstrate that an international ranking of child wealth inequality diverges sharply from one based on child income inequality. The wealth situation of children in the United States is exceptional: they lag further behind seniors in terms of their wealth and face the highest levels of wealth inequality and, by far, wealth concentration.

Inequality in household wealth in the United States and other industrialized countries is large and growing (Wolff 1996, 2017; Pfeffer, Danziger, and Schoeni 2013; Piketty 2014), raising concerns about the impact of wealth inequality on the development and opportunities of today's children (Gibson-Davis and Hill 2021, this issue; Pfeffer and Schoeni 2016). This concern is heightened by the fact that the level of wealth inequality experienced by children is even higher than that experienced by other population groups and also rising faster (Pfeffer and Schoeni 2016; Gibson-Davis and Percheski 2018). In this article, we provide the first cross-national assessment of wealth inequality among children in fourteen countries characterized by distinct policy, institutional,

and economic contexts. We demonstrate that in most of these countries, as one would expect, children experience lower levels of household wealth than the rest of the population, in particular seniors. Children also tend to experience greater wealth inequality and concentration. In many countries, their disadvantage is quite large, and nowhere more so than in the United States. Further, research that has established the shape and determinants of income inequality among children cannot provide much guidance for the assessment of the shape and determinants of wealth inequality among children because national levels of child income inequality and child wealth inequality are uncorrelated. That is, countries often differ significantly in the level of inequality among chil-

Fabian T. Pfeffer is associate professor and associate chair of the Department of Sociology and director of the Center for Inequality Dynamics at the University of Michigan, United States. **Nora Waitkus** is a postdoctoral researcher at the International Inequalities Institute at the London School of Economics, United Kingdom.

dren when measured as income versus wealth; however, the United States combines uniquely high levels of child inequality in both wealth and income. Overall, this contribution emphasizes that U.S. levels of child wealth inequality are not merely high but, in an international comparison, extreme, and that wealth forms a partly separate dimension of the economic well-being of children across countries.

We begin by providing a conceptual background for the analysis of wealth across countries and population groups of different ages.

BACKGROUND AND APPROACH

Recent comparative work has found substantial international variation in wealth inequality (Davies 2008; Piketty 2014; Pfeffer and Waitkus, forthcoming). Although multiple studies do not find countries' demographic structure to be clearly related with national levels of wealth inequality (see, for example, Sierminska and Doorley 2018; Cowell, Karagiannaki, and McKnight 2018), research has established important differences in wealth and wealth inequality between population groups within countries. For the United States, Fabian Pfeffer and Robert Schoeni (2016) show that wealth inequality is higher among households with children than those without and has been growing more rapidly for the former since the late 1980s. Christina Gibson-Davis and Christine Percheski (2018) compare U.S. trends in the wealth levels of two groups of households with dependents, child households and elderly households, and demonstrate that the wealth gap between and within these two groups has grown over the decades: child households at the bottom of the distribution saw a particularly pronounced decline, falling further behind the relatively stable wealth levels of elderly households and also becoming increasingly worse off compared to the wealthiest child households. We extend this perspective by comparing children across fourteen countries to determine whether and to what extent they are exposed to higher levels of wealth inequality than the remainder of the population in other Western countries.

Our assessment is entirely descriptive but implies an urgent call for more explanatory approaches that seek to understand why countries differ in the extent of wealth inequality as experienced by children. Such undertaking needs to tackle at least two questions. First, why is the wealth exposure of children different from that of the remainder of the population? Second, does the consideration of wealth ask for a new understanding of national contexts of child well-being? Before beginning our analyses, we provide initial guidance for such explanatory tasks.

Wealth Differences Across Age Groups

Differences in the wealth distribution between age groups can be driven by various factors: these groups are at different stages of the process of asset accumulation (in the case of children, the asset accumulation of their caregivers), generational differences in asset accumulation are possible, and circumstances of the historical period in which we assess wealth may explain group differences. In short, the differences described here may be driven by a combination of age, cohort, and period effects. Again, our contribution provides a purely descriptive account of these differences and does not attempt to disentangle the contribution of age, period, or cohort effects (Fosse and Winship 2019). Nevertheless, we offer basic hypotheses on how each of these forces may contribute to the observed differences in the distribution of wealth between the young and the old.

The clearest predictions about differences in the *level* of wealth arise from a focus on age effects: as the term wealth accumulation itself suggests, household wealth is built over time, leading us to expect younger groups to be less wealthy than older groups (Modigliani 1988). Besides the cumulation of savings over time, spending needs also differ between the young and old. Having children limits families' ability to accumulate assets (Maroto 2018), in particular in the U.S. context of rising economic investments in children (Kornrich and Furstenberg 2012; Schneider, Hastings, and LaBriola 2018). During later adulthood—on average, when individuals are in their fifties (Leopold and Skopek 2015)—the receipt of an inheritance may jolt wealth accumulation for some households. Finally, desaving among seniors as they draw down assets during retirement is less pronounced than economic theory would have it and often limited to the very latest years of life

and related to the cost of care (Ameriks et al. 2015). Predictions about age differences in wealth *inequality*, in contrast, depend on whether individual wealth trajectories follow a process of cumulative advantage (DiPrete and Eirich 2006). Historically high returns on capital (Piketty 2014) and, in particular, long-acknowledged processes of compound interest on capital (Marx 1981) make it likely that wealth advantage indeed cumulates and increases over time, moving the wealthy further apart from the nonwealthy. Under these assumptions, we would expect wealth inequality and wealth concentration to be greater among the old than the young.

Next, based on a cohort perspective, the wealth accumulation of today's seniors can be hypothesized to have occurred during historically advantageous conditions as they accumulated assets in years of economic growth (offering, for instance, stable occupational careers) and an expansion of public investments and protections (such as unionized employment, public higher education), providing unmatched opportunities for stable trajectories of asset accumulation (see, for example, Morgan and Scott 2007). In contrast, the asset accumulation of more recent cohorts is occurring during considerably more challenging macro-economic and social conditions, marked by widespread loss of economic stability and public insurance schemes, ranging from the rapid decline of unionized labor (Western and Rosenfeld 2011; Brady, Baker, and Finnigan 2013) to the restructuring of pension themes (Hacker 2007; Devlin-Foltz, Henriques, and Sabelhause 2016; Ebbinghaus 2011). The proliferation of economic loss (Jackson and Grusky 2018) suggests that today's younger cohorts will not only have less wealth than prior cohorts, but also that wealth may be increasingly concentrated among those who no longer rely on the labor market or public insurance schemes for their economic survival.

Last, considering potential period effects that may underlie our findings, our assessment of wealth follows a period of intense fluctuations in the wealth structure, at least in the United States. The Great Recession not only destroyed massive amounts of wealth but also rapidly increased wealth inequality in some countries, especially in the United States (Pfef-

fer, Danziger, and Schoeni 2013; Wolff 2017) though much less so in other countries, such as Germany (Grabka 2015). In the United States, the Great Recession tended to decrease the wealth holdings of those already disadvantaged, which includes younger households (Pfeffer, Danziger, and Schoeni 2013). That is, the immediate post-recession period that we assess here may, in some countries, be marked by a particularly large wealth gap between the young and the old. Extrapolating from the general inequality-increasing influence of the Great Recession, one may expect that the recession also contributed to increased wealth inequality within these groups.

As stated, we cannot empirically disentangle the relative contributions of the age, cohort, and period effects hypothesized; we merely observe their combined influence on the distribution of wealth between and among today's young and old. In combination, the hypotheses do support a clear expectation that the wealth levels of the young are lower than those of the old because age, cohort, and period effects point in the same direction. They do not support a clear expectation about the differences in wealth inequality and concentration between these groups as the hypothesized age effects point toward lower levels of inequality among the young, whereas the hypothesized cohort and period effects point toward higher inequality among the young.

National Contexts of Wealth Inequality

A robust comparative literature relies on income to measure national levels of economic inequality. Measures of wealth, however, yield quite a different picture of cross-national differences in inequality given that cross-national differences in wealth inequality are largely independent from national levels of income inequality (Pfeffer and Waitkus, forthcoming). Countries usually perceived as income-egalitarian, such as Sweden or Norway, are marked by comparably high levels of wealth inequality. In contrast, some countries with high levels of income inequality, such as the United Kingdom or Australia, report comparatively moderate levels of wealth inequality. Only the United States combines vast wealth and income inequality.

National levels of income inequality have

long been shown to be shaped by labor-market institutions and welfare states (Esping-Andersen 1990; Hall and Soskice 2001). A perspective that makes sense of the distinct cross-national differences in wealth inequality, however, may need to center on the exposed role of housing markets and related institutions, since national levels of wealth inequality are strongly related to inequalities in housing (Pfeffer and Waitkus, forthcoming). Beyond the distribution of homeownership, this perspective may consider the interrelation of national housing markets and financial markets as the regulation of mortgage lending has been found to be an important driver of housing inequality (Aalbers 2016; Ansell 2019; Fuller, Johnston, and Regan 2019), including housing discrimination and segregation. For instance, the consequences of a loosely regulated mortgage market—especially for economically disadvantaged families, minority households, and single mothers and thereby for broader patterns of wealth inequality—became particularly obvious in the Great Recession and its aftermath in the United States (Rugh and Massey 2010; Baker 2014). At the same time, access to financial markets and, in particular, long-term debt obligations such as mortgages may also be facilitated by more stable labor trajectories and protections, such as in northern European countries (Johnston, Fuller, and Regan 2020), suggesting that increased access to homeownership should not be simply thought of as a trade-off to a well-developed welfare state (Ansell 2014; van Gunten and Kohl 2020). Furthermore, in northern European countries, the proliferation of credit has been driven by the intensification of credit among those holding it, more so than the expansion of credit to more households (van Gunten and Navot 2018). We may therefore expect countries as different as the United States and Sweden to show comparably high levels of wealth inequality, if for different reasons. In contrast, some southern and eastern European countries where mortgage markets are restricted and outright ownership levels are high—sometimes described as familial residential capitalist regimes (see Schwartz and Seabrooke 2009)—can be expected to have lower levels of wealth inequality. Finally, deregulated financial markets may not only induce further wealth stratification through the spread of credit and mortgages but also sustain the increased access of a financial elite that continues to concentrate national wealth (Lin and Tomaskovic-Devey 2013).

A full explanation of cross-national differences in wealth inequality and, with it, children's wealth inequality is beyond the scope of this article, but the article does suffice to illustrate that these explanations will likely lie outside those offered by the comparative literature on income inequality. Instead of labor-market institutions, comparative work that seeks to understanding wealth inequality will likely have to put housing and credit markets at the center stage of its explanatory framework (see also Pfeffer and Waitkus, forthcoming).

DATA AND MEASURES

To compare wealth levels, wealth inequality, and wealth concentration across nations, we draw on the Luxembourg Wealth Study (LWS 2020). The LWS provides carefully harmonized measures of household net worth and household composition for fourteen countries: Australia (AU), Austria (AT), Finland (FI), Germany (DE), Greece (GR), Italy (IT), Luxembourg (LU), Norway (NO), Slovakia (SK), Slovenia (SI), Sweden (SW), Spain (ES), the United Kingdom (UK), and the United States (US).[1] The LWS harmonization work is ex-post (see Sierminska, Brandolini, and Smeeding 2006) in that it draws on established national data sources that have been collected independently, mostly through nationally representative surveys or, in the case of Norway and Sweden, through tax registries. Several countries include oversamples of rich or high wealth households—Finland, Greece, Luxembourg, Slovakia, Slovenia, Spain, and the United States—which we adjust for by using survey weights (for evidence on the stability of cross-national wealth comparisons toward differences in survey design characteristics, see Pfeffer and Waitkus, forthcoming).

We draw on harmonized, cross-sectional

---

1. Wealth data for Canada are available in the LWS but because they do not include an indicator of the number of children in the household, we cannot include estimates for Canada in our analyses.

measures of net worth collected between 2011 and 2014, with the exception of Sweden, for which the last available LWS wave is 2005.[2] Missing wealth data have been imputed for some countries with each national data provider applying their own imputation algorithms (Austria, Germany, Greece, Luxembourg, Slovakia, Slovenia, Spain, and the United States). Wealth measures are neither top- nor bottom-coded (that is, zero and negative net worth values are included). We calculate median household net worth (in constant 2011 dollars with purchasing power adjustments), the Gini coefficient of household net worth as a broad measure of wealth inequality, and the share of net worth held by the top 5 percent of the wealth distribution as a measure of wealth concentration. Using two inequality indicators, the Gini coefficient and top 5 percent share, allows us to capture both broad patterns of wealth inequality (including negative net worth) as well as the highly skewed nature of the wealth distribution.

Our contribution also provides a simple but substantively meaningful methodological reorientation. Rather than describing the distribution of wealth across different types of households, such as households with and without children, as done in prior research (see Pfeffer and Schoeni 2016; Gibson-Davis and Percheski 2018), we assess the distribution of wealth from an individual-level perspective, estimating household wealth levels and inequality among children (those younger than eighteen), as well as among adults (age eighteen through sixty-four), and among seniors (age sixty-five and older).[3] Arguably, the household wealth of children (which we term *child wealth*) is a more natural basis of assessment than the wealth of households with children: because child wealth captures the wealth level and inequality each child experiences, it is more directly relevant to assessments of the impact of wealth inequality on child development. Methodologically, this approach amounts to simply calculating distributional measures weighted by the number of children within a household. That is, we restructure our data from the household to the individual level so that, for example, a household with two children under eighteen will contribute two observations to the assessment of child wealth, with each of these two children being assigned the same level of household wealth.[4] Substantively, the individual-level analysis accounts for differential fertility patterns across the wealth distribution (for a general exposition of the importance of considering demographic differences in the analysis of inequality and mobility, see Song and Mare 2014). We provide direct comparisons between our individual-level approach and the more typical household-level approach in appendix B, where we distinguish child households, defined as households with any children younger than eighteen, from senior households, defined as households without children and a head or spouse or partner age sixty-five or more. The household-level perspective provides somewhat lower estimates of the gap between the young and the old but leaves the international ranking of these gaps largely unaltered. It provides very similar findings on international variation in wealth inequality among children.

Another methodological issue highlighted by the individual-level perspective—though it is also pertinent to household-level analyses—is whether measures of household net worth should be adjusted for household size. Analyses of income typically adjust for (the square root

---

2. As to the influence of differences in measurement timing, see Pfeffer and Waitkus (forthcoming), who provide evidence on the stability of international rankings of wealth inequality before and after the Great Recession.

3. The children included here are born between the mid-1990s and the mid-2010s (between 1988 and 2005 in Sweden) and the elderly are born up to the immediate post–World War II years (up to 1940 in Sweden).

4. To be clear, we are not and cannot draw on survey measures of individual asset holdings. The few surveys that have collected wealth information at the individual level (such as the German Socio-Economic Panel and a select module of the Survey of Income and Program Participation) have, sensibly, only done so for the household reference person and their partner (for example, wife's wealth and husband's wealth assessed separately). It would in fact make little sense to measure the asset holdings of those who cannot legally hold most assets (outside of a child saving accounts).

Figure 1. Wealth Gaps Between Children, Adults, and Seniors
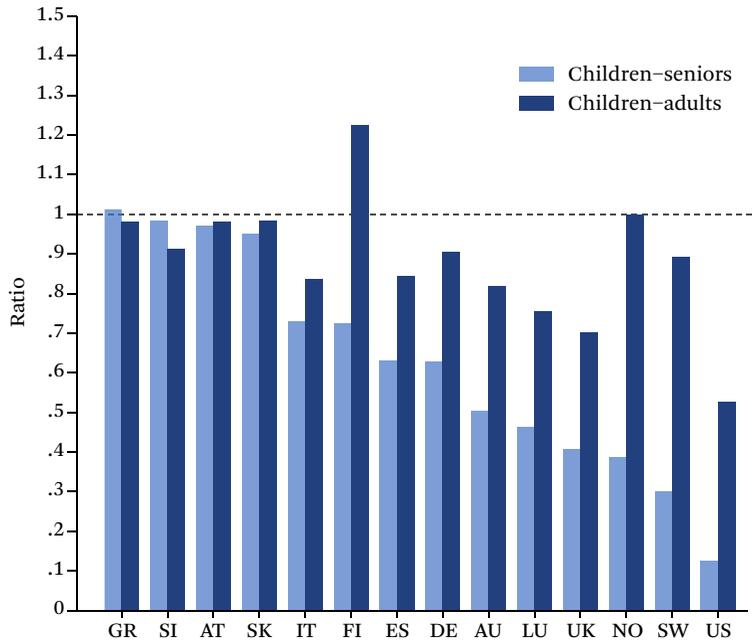
Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Lighter bars display the median net worth ratio between children and seniors, darker bars the ratio between children and adults. For country labels and estimates, see table A1.

of) household size to account for income sharing within households and for economies of scale. A similar consensus does not exist for analyses of household wealth (see Killewald, Pfeffer, and Schachner 2017), reflecting the conceptual ambiguity of net worth when it comes to its divisibility and potential for economies of scale. For instance, whereas money in savings accounts may more easily be assumed to be divided across household members (using a yet to be defined allocation rule), home equity may be less clearly divisible given that many of its benefits accrue to all household members. In our main analyses, we present wealth estimates without adjustments for household size but provide direct comparisons to wealth measures adjusted for the (square root of) household size in appendix C. Household size adjustments increase the gaps between the young and the old further, but again leave the international ranking of these gaps largely unaltered and do not provide a meaningfully different picture of cross-national differences in the extent of wealth inequality as children experience it.

RESULTS

Our expectation that children experience lower wealth levels than the rest of the population is borne out empirically for most of the countries considered. Figure 1 reports the ratio between children's median wealth and the median wealth of adults (lighter bars) and of seniors (darker bars), respectively (for estimates and country labels, see table A1).

We observe, first and unsurprisingly, that the household wealth of the average child is lower than that of the average adult or senior in nearly all countries. Second, wealth gaps between children and seniors tend to be larger than those between children and adults in most countries, which may partly reflect the larger overlap between the latter two groups (given that children are more likely to share a household with adults, that is, their parents, than with seniors). This pattern is particularly stark for Finland, Sweden, and Norway, where the gap between children and adults is small (or, in the case of Finland, even reversed) but substantial between children and seniors. Averaged

across all countries (unweighted by sample size), children experience less than two-thirds the wealth of seniors. However, third and most interestingly, cross-national variation is wide in the extent of the wealth gap between children and the remainder of the population. In some southern and central European countries (Greece, Slovenia, Austria, and Slovakia), median child wealth is equivalent to or within 10 percent of the median wealth of adults and seniors, whereas in Scandinavia (Sweden and Norway), the average child has less than 40 percent of the wealth of the average senior. We observe by far the largest wealth disadvantage of children in the United States, where median child wealth is just about half the wealth of adults and merely about one-eighth that of seniors. As table A1 reveals, this exceptional size of the wealth gap between the young and the old is driven by very low levels of wealth among U.S. children, in fact the lowest among all countries observed here. However, a look beyond the United States suggests that large wealth gaps between children and the rest of the population are not necessarily driven by comparatively low levels of child wealth (for instance, the United Kingdom, Finland, and Slovenia show similar levels of child wealth but vastly different gaps between children and adults or seniors).

Stability analyses suggest that these international differences—that is, the ranking of countries according to the size of these gaps—are quite stable toward different specifications, namely, when wealth is measured at the household-level (figure B1) or adjusted for household size (figure C1). In particular, the ordering of countries with large gaps between children and seniors remains unaltered (in ascending order, Australia, Luxembourg, the UK, Norway, Sweden, and the United States, by far the largest). The absolute size of the gap is somewhat less pronounced when comparing child households with senior households (rather than children with seniors) and more pronounced when wealth is adjusted for household size. Both findings partly reflect the fact that households with children tend to be larger than those without them.

Potential explanations for the exceptional wealth position of U.S. children may be the high cost of child-raising resulting from an underinvestment in the public infrastructures that support families, such as parental leave policies or public preschool education. This potential institutional explanation is also supported by a neighboring set of countries in this international ranking: Sweden and Norway sustain the highest investments in early childhood and preschool education and the most generous parental leave and family support policies (Organization for Economic Co-operation and Development 2017, 90; Gornick and Meyers 2003). The gap between children and adult wealth is comparatively small (or nonexistent in the case of Norway)—even though the wealth gap between children and seniors is among the largest.[5]

Overall, our findings show that the prosperity created over decades of peace and economic growth—and, in some countries included here, significant economic restructuring after the fall of state socialism—has not been fully shared with children in the majority of countries included here. Save in Greece, Slovenia, Austria, and Slovakia, the average child today lags far behind the remainder of the population in terms of wealth. In the next section, however, we also demonstrate that a focus on the "average child" (median wealth) provides only a partial picture of cross-national variation in wealth. As we will see, countries also differ significantly in terms of how much the wealth of the young, adults, and seniors varies, that is, in terms of the level of wealth inequality they face.

WEALTH INEQUALITY OF CHILDREN

We expected—and in nearly all cases confirmed—that children experience lower levels of household wealth than anyone else. In contrast, theoretical expectations about differences in the levels of wealth inequality and concentration that children face are less clear.

---

5. Another notable aspect of this large child-senior wealth gap in Scandinavian countries is that it is based on wealth measures that do not include the substantial public pension wealth of seniors in these countries. One would expect these gaps to increase further when based on augmented wealth measures (those including pension wealth).

Figure 2. Wealth Inequality and Concentration Among Children, Adults, and Seniors
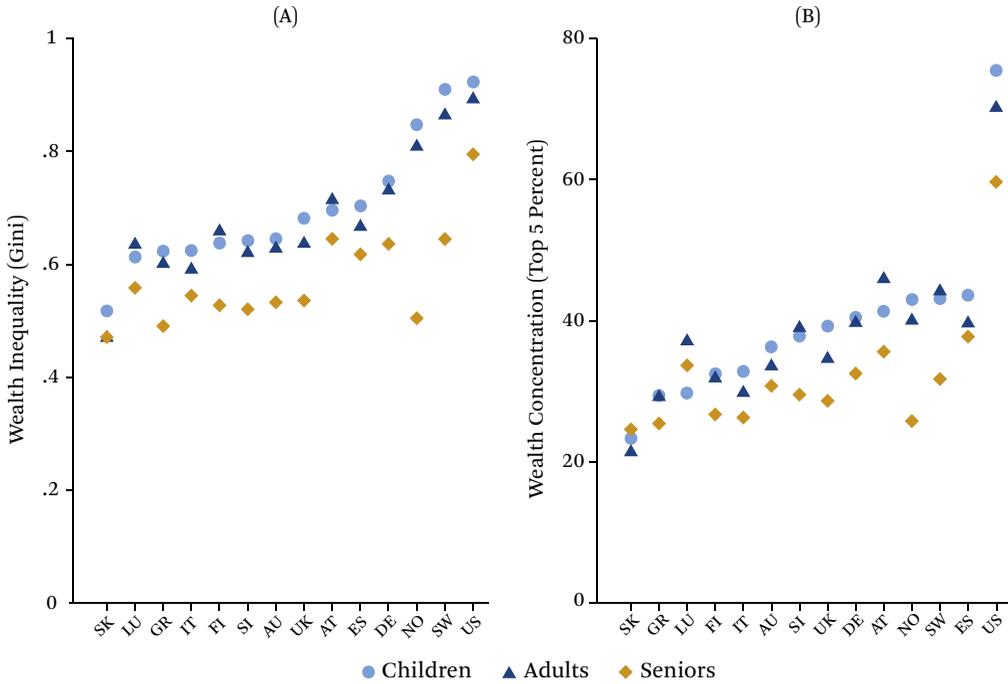
Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Inequality in wealth is measured using the net worth Gini coefficient. Concentration is measured as the net worth share held by the top 5 percent of the wealth distribution. Each measure is calculated separately among children (seventeen and younger), adults (eighteen to sixty-four), and seniors (sixty-five and older). For country labels and estimates, see table A2.

Here, we document differences in wealth inequality between children, adults, and seniors. Figure 2, panel A (see also table A2) depicts wealth inequality among children (circles), adults (triangles), and seniors (diamonds) using the Gini coefficient. Despite tremendous cross-national variation in levels of overall wealth inequality (see also Pfeffer and Waitkus, forthcoming), one consistent and strong pattern holds across all countries: children experience substantively higher levels of wealth inequality than seniors. Averaged across all countries (not weighted by country size), the wealth Gini coefficient for children exceeds that of seniors by 0.13 points. Child wealth inequality, however, differs much less (on average, by just 0.02 points) from adult wealth inequality. In Norway, the child wealth Gini coefficient is a full 0.34 points above that of seniors, making Norway the third most unequal country for children (Gini coefficient of 0.85) yet among the

most wealth-egalitarian countries for seniors (Gini coefficient of 0.50). Other countries with substantially higher wealth inequality among children than among seniors include Sweden (0.27 point higher Gini coefficient), the UK (+0.14), Greece, and the United States (+0.13 for both). The United States has the highest level of child wealth inequality (0.92), almost twice the level of the most egalitarian country in this set, Slovakia (0.52).

Figure 2, panel B (see also table A2) reports a similar cross-national comparison based on a different inequality measure, the concentration of wealth among the wealthiest 5 percent (within each respective age group). First, we observe that the cross-national ranking of child wealth inequality and child wealth concentration is quite similar, suggesting that the two measures capture international differences in the wealth structure of child households similarly well. One notable exception is the United

States. Although U.S. children experience the highest level of wealth inequality according to both the Gini coefficient and the top 5 percent share, the latter reveals the truly exceptional U.S. level of wealth stratification among children: the wealthiest 5 percent of children grow up with three quarters of all child wealth. That number is 43.6 percent for the country with the second highest concentration of child wealth, Spain, and just 23.4 percent for the country with the lowest, Slovakia. Besides the extremely high level of wealth concentration among children, the extent to which wealth concentration among children exceeds that among seniors is also very high in the United States (+15.8 percentage points). A similar increase is observed in Scandinavian countries (+11.4 percentage points in Sweden and +17.2 in Norway).

Results based on alternative specifications closely align with those reported here (see figure B2 for household-level estimates and figure C2 for household size adjustments).[6] Our main conclusions about cross-national differences in child wealth inequality and concentration thus remain: wealth inequality and concentration are higher among children than among seniors, in many countries substantively so, and by international comparison, children in the United States face a particularly extreme level of wealth concentration.

Children's Wealth Inequality Versus Children's Income Inequality

Our results so far demonstrate a comparatively large wealth disadvantage of and high wealth inequality among children in the United States.

This comparative position of U.S. children may not come as a surprise to those who have studied the economic well-being of children in the United States, for instance, based on comparisons of child poverty rates (Rainwater and Smeeding 2003; Gornick and Jantti 2010). Yet a conclusion that the patterns established here line up with or directly follow from prior comparative findings based on income would be premature. It is, of course, true that income and wealth are positively correlated at the household level, though perhaps to a lower degree than some assume (Killewald, Pfeffer, and Schachner 2017).[7] However, research has also documented that wealth conceptually and empirically constitutes its own dimension of economic well-being and opportunity in the United States (Keister and Moller 2000; Spilerman 2000; Killewald, Pfeffer, and Schachner 2017) as well as in other countries (see Pfeffer 2011; Haellsten and Pfeffer 2017). Furthermore, prior cross-national comparisons of inequality based on wealth show that countries' ranks differ widely from those based on income (for a full population analysis, which we extend here by focusing on children, see Pfeffer and Waitkus, forthcoming). In this final section, we assess whether our findings on the level of inequality that children in different countries face could also have been attained by drawing on the more widely used indicator of economic well-being, income, or whether, alternatively, our analysis of wealth captures distinct disadvantages of children that would otherwise have been missed.

Figure 3 clearly demonstrates that the latter

---

6. The household-level perspective yields marginally lower levels of wealth inequality and concentration than the individual-level perspective. The only exception is Luxembourg, where the estimates of wealth inequality and concentration among child households is substantially higher than that among children, implying that Luxembourg no longer diverges from the overall pattern found in figure 2). Overall, however, and in contrast to the prior assessment of wealth gaps between the young and the old, conclusions about differences in wealth inequality and concentration do not meaningfully depend on the analytical level. Substantively, we may conclude that cross-national differences in demographic structure, namely, wealth gradients in fertility and household structure, cannot account for cross-national differences in the wealth inequality today's children face, confirming previous research (Davies, Fortin, and Lemieux 2017; Sierminska and Doorley 2018; Cowell, Karagiannaki, and McKnight 2018).

7. Multiyear measures of income (life-time income measures) yield somewhat higher but still far from perfect correlations with wealth measures. Although the cross-sectional data we draw on here do not allow us to use proxy measures of life-time income, it is doubtful that doing so would meaningfully alter the reported findings that are based on aggregate inequality estimates drawn from single income years.

Figure 3. Child Wealth Inequality Versus Child Income Inequality
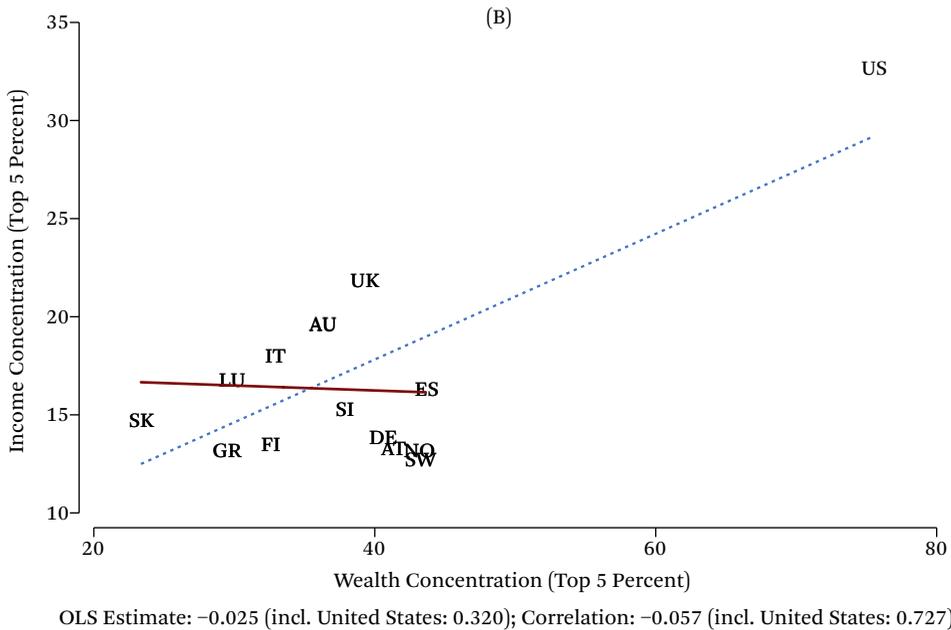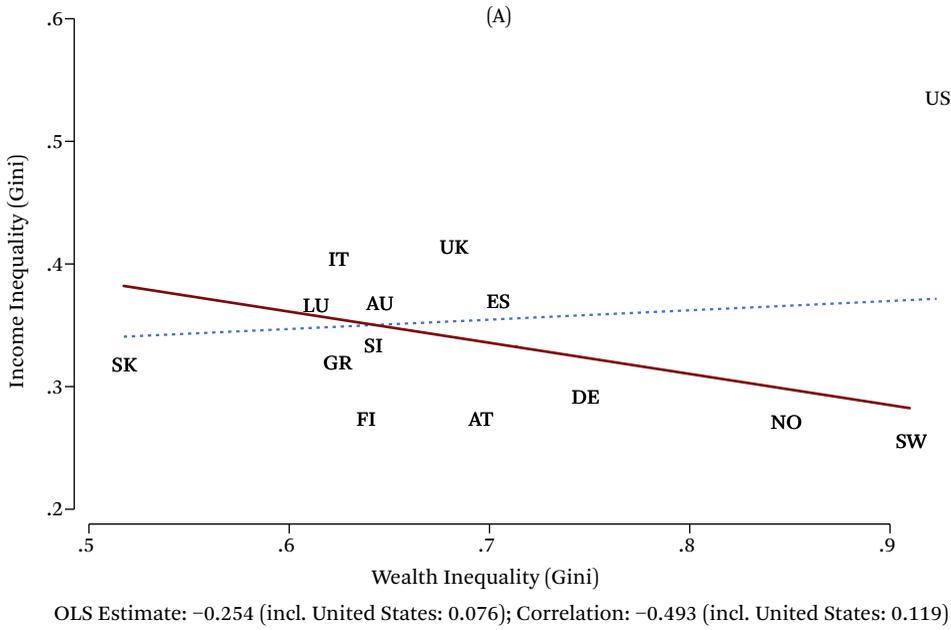
OLS Estimate: −0.254 (incl. United States: 0.076); Correlation: −0.493 (incl. United States: 0.119)

OLS Estimate: −0.025 (incl. United States: 0.320); Correlation: −0.057 (incl. United States: 0.727)

Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Inequality in wealth and income is measured using the Gini coefficient. Concentration is measured as the net worth (income) share held by the top 5 percent of the wealth (income) distribution. The dotted line is the fitted OLS line including the United States, the solid line is the fitted OLS line excluding the United States. For country labels and estimates, see table A1.

is the case. National levels of inequality in children's wealth are uncorrelated with national levels of inequality in children's income. In fact, if one were to read any association into figure 3, panel A, one would have to conclude that—by excluding the United States as the clear outlier in terms of both children's wealth and income inequality—the association between these two dimensions of child inequality is slightly negative. The conclusion is the same for a measure of children's income and wealth concentration. Figure 3, panel B again highlights the exceptional level of inequality that U.S. children face. Once more, different specifications leave these conclusions unaltered (see figure B3 for household-level measures and figure C3 for household-size adjusted measures). Overall, the lack of correlation between wealth-based and income-based indicators of child inequality forcefully demonstrates that prior work on the relative well-being of children based on income indicators does not provide suitable guidance for future work that seeks to explain the economic reality today's children face as it relates to their wealth position.

CONCLUSION

Our comparative analysis of the wealth of children, adults, and seniors across fourteen countries yields the following main findings. First, in all countries studied, the wealth children experience is substantially lower than that of seniors, as one may expect. Second, in most countries, child wealth is distributed substantially more unequally than the wealth of seniors and, though less consistently and less pronounced, other adults. Third, an international ranking of child wealth inequality diverges sharply from one based on child income inequality. Finally, among all fourteen countries, the United States stands out as having a particularly pronounced child wealth disadvantage. In no other country do children lag further behind seniors in terms of their wealth attainment. In no other country do the young face higher levels of wealth inequality and concentration. And in no other country does that fate combine with exceptionally high levels of income inequality and concentration. Overall, then, these results add urgency to the empirical study of child wealth, especially within the United States, providing

a fitting descriptive background for the studies in this issue.

A variety of immediate extensions to this work are possible. Our work can be read as a call for analytic attention to wealth in addition to income in national studies of inequality in opportunity. Some analysts may also want to pursue a perspective that jointly considers income and wealth in determining the life chances of the next generation to provide a more holistic picture of the economic conditions of children. Further, we acknowledge that the continued improvement of cross-nationally harmonized wealth measures is an important frontier for research. Future data production efforts may, among other things, pursue an improvement and harmonization of imputation approaches and increase oversampling of the wealthy. Finally, the continued expansion of the Luxembourg Wealth Study will provide additional comparative cases that may also help alter our understanding of the international distribution of child wealth and inequality.

Most of all, we hope that the results presented here may serve as a foundation for more explanatory pursuits that seek to uncover the reasons behind the documented, large cross-national variation in the wealth disadvantage and inequality of children. We pointed out that such explanations will likely need to go beyond classical analytical perspectives focused exclusively on labor market and welfare state institutions and also consider their interplay with housing markets and processes of financialization. Beyond the general task of institutional explanations of cross-national differences in wealth inequality writ large, explanations of the position of children should also pay attention to the kinds of institutions that sustain families' ability to accumulate wealth, for instance, publicly funded early childhood education or generous parental leave policies. Because the United States is an international laggard in this institutional realm, it is tempting to ascribe the exceptional wealth disadvantage of children there to these institutional forces. Additional relevant evidence comes from the Scandinavian countries, Norway and Sweden, which offer broad access to early childhood education and generous parental leave policies and are marked by a much smaller gap between the

wealth of children and adults. Yet these countries are also marked by very large gaps between seniors and children and by comparatively high levels of wealth inequality among them. As our prior comparison of wealth inequality for the general population also suggests (Pfeffer and Waitkus, forthcoming), Scandinavian egalitarianism does not appear to extend to the dimension of wealth. The more developed welfare state of these countries interacts with children's economic position in a complex way. Although it supports broader redistribution and insurance of income streams, it may stymie individual savings while enabling credit taking, leading to similarly high levels of child wealth inequality as observed in the United States. The unique nature of U.S. children's economic insecurity, however, is that they face very high levels of wealth inequality in a context that offers very limited public safety nets. In contrast, the most wealth-egalitarian countries for children identified in this contribution lie in central and southern Europe, with a former state-socialist country, Slovakia, showing the least wealth disadvantage for the young as they have similar wealth levels to those of the old and similar and comparatively low levels of wealth inequality and concentration.

Before any explanatory search for institutional determinants or even interventions can begin, however, research will also need to establish whether the findings presented here merely reflect different life-course stages in wealth trajectories (age effects), true generational gaps in wealth and wealth inequality (cohort effects), or whether they are mostly driven by the recent impact of the Great Recession (period effects). Only if the patterns established here arose chiefly from the first (age effects) would maintaining optimism about the future well-being of today's children in the United States be possible. The diagnosis of their current condition, however, should be alarming to all.

Table A1. Gaps in Median Wealth

Country	Label	Year	Median Wealth			Ratio		N		
			Children (1)	Adults (2)	Seniors (3)	Child-Adult (1)/(2)	Child-Senior (1)/(3)	Children	Adults	Seniors
Australia	AU	2014	184,069	224,864	365,937	0.82	0.50	7,994	20,790	5,327
Austria	AT	2014	188,209	191,621	193,867	0.98	0.97	4,068	15,130	4,170
Finland	FI	2013	133,707	109,110	184,570	1.23	0.72	6,334	16,673	4,135
Germany	DE	2012	100,321	110,813	159,334	0.91	0.63	29,439	51,457	11,005
Greece	GR	2014	109,603	111,635	108,236	0.98	1.01	4,248	15,746	4,463
Italy	IT	2014	160,249	191,494	219,575	0.84	0.73	2,565	11,222	5,579
Luxembourg	LU	2014	358,836	474,963	773,633	0.76	0.46	3,664	10,826	1,858
Norway	NO	2013	98,236	98,336	254,142	1.00	0.39	113,148	315,128	78,140
Slovenia	SI	2014	136,875	139,187	143,940	0.98	0.95	5,566	21,852	5,194
Slovakia	SK	2014	96,874	106,196	98,341	0.91	0.99	2,967	11,875	2,810
Sweden	SW	2005	31,056	34,818	103,153	0.89	0.30	7,880	22,220	6,817
Spain	ES	2014	139,130	164,697	220,665	0.84	0.63	5,073	19,650	10,872
United Kingdom	UK	2011	123,805	176,278	304,368	0.70	0.41	11,252	26,900	10,759
United States	US	2013	24,043	45,575	189,640	0.53	0.13	20,155	44,823	10,162

Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).

Table A2. Wealth Inequality Within Groups

Country	Label	Wealth			Income		
		Children	Adults	Seniors	Children	Adults	Seniors
Gini coefficient							
Australia	AU	0.65	0.63	0.53	0.38	0.39	0.43
Austria	AT	0.70	0.71	0.65	0.29	0.32	0.32
Finland	FI	0.64	0.66	0.53	0.29	0.34	0.35
Germany	DE	0.75	0.73	0.64	0.30	0.34	0.35
Greece	GR	0.62	0.60	0.49	0.33	0.35	0.33
Italy	IT	0.62	0.59	0.54	0.35	0.35	0.34
Luxembourg	LU	0.61	0.63	0.56	0.38	0.41	0.41
Norway	NO	0.85	0.81	0.50	0.28	0.34	0.34
Slovenia	SI	0.64	0.62	0.52	0.35	0.37	0.43
Slovakia	SK	0.52	0.47	0.47	0.33	0.33	0.42
Sweden	SW	0.91	0.86	0.64	0.27	0.32	0.31
Spain	ES	0.70	0.67	0.62	0.38	0.39	0.39
United Kingdom	UK	0.68	0.64	0.54	0.43	0.40	0.41
United States	US	0.92	0.89	0.79	0.55	0.54	0.56
Top 5 percent share							
Australia	AU	36.3	33.5	30.8	20.4	18.9	23.7
Austria	AT	41.3	45.9	35.6	14.1	15.3	15.6
Finland	FI	32.5	31.8	26.7	14.2	15.1	17.8
Germany	DE	40.5	39.7	32.5	14.6	15.9	16.1
Greece	GR	29.4	29.2	25.4	14.0	15.3	14.9
Italy	IT	32.8	29.7	26.3	15.2	14.8	15.7
Luxembourg	LU	29.8	37.1	33.7	17.5	20.0	18.5
Norway	NO	43.0	40.0	25.8	14.0	15.0	16.2
Slovenia	SI	37.8	38.9	29.5	16.1	16.3	18.6
Slovakia	SK	23.4	21.3	24.6	16.3	16.3	17.0
Sweden	SW	43.1	44.1	31.7	13.5	14.5	15.2
Spain	ES	43.6	39.6	37.7	17.1	18.0	19.0
United Kingdom	UK	39.2	34.6	28.6	22.6	20.2	20.3
United States	US	75.5	70.1	59.7	33.5	32.7	36.7

Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).

APPENDIX B. HOUSEHOLD-LEVEL ANALYSES

As a reminder, differences between the household- and individual-level results arise exclusively from demographic factors, namely wealth differences by fertility (such as families with more children holding less wealth) and household structure (such as senior singles holding less wealth than senior married individuals).

Figure B1. Wealth Gaps: Individual Versus Household Level
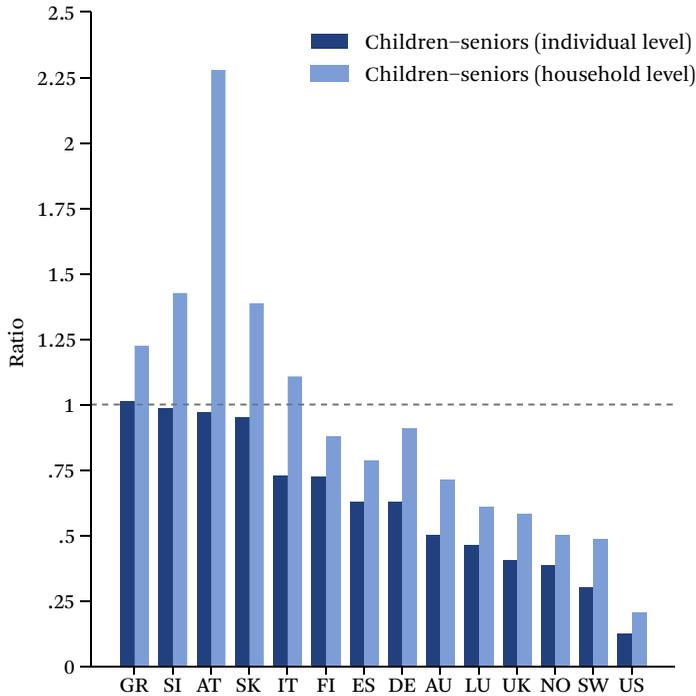
Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Darker bars display the median net worth ratio between children and seniors (individual level), lighter bars the ratio between child households and senior households (household level). For country labels and estimates, see table A1.

Figure B2. Wealth Inequality: Individual Versus Household Level
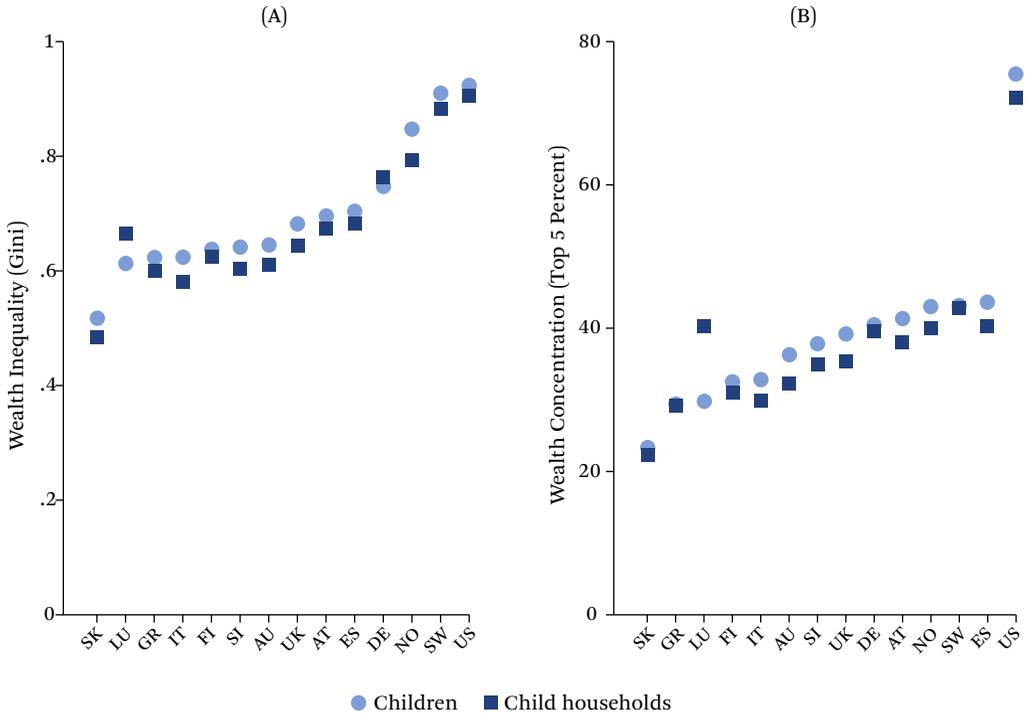
Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Inequality in wealth is measured using the net worth Gini coefficient. Concentration is measured as the net worth share held by the top 5 percent of the wealth distribution. Each measure is calculated separately among children (individual level) and among child households (household level). For country labels, see table A1.

Figure B3. Child Wealth Versus Child Income: Household Level
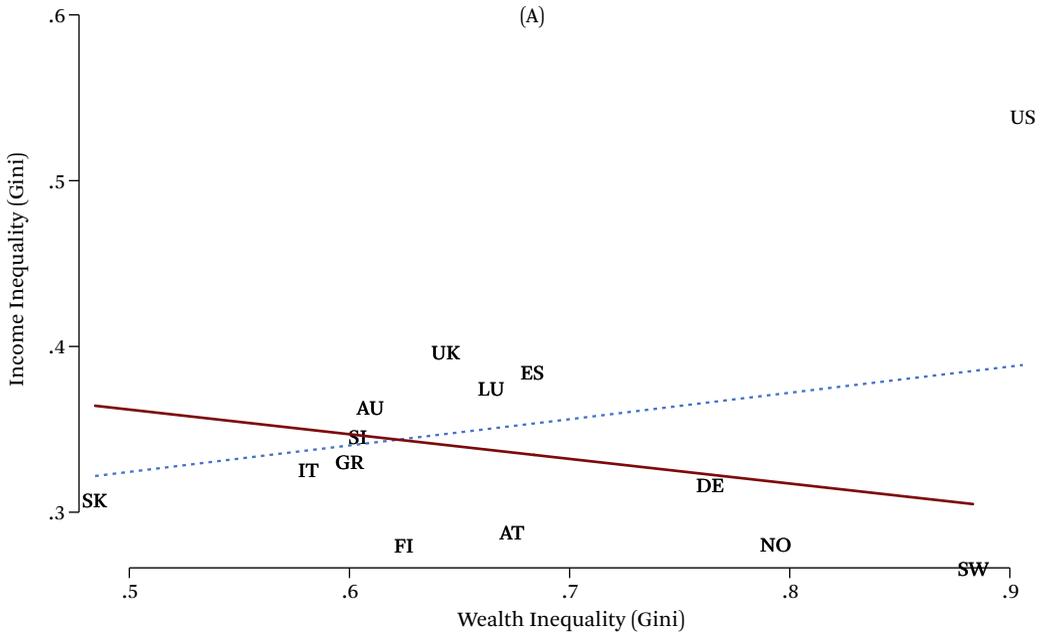
OLS Estimate: −0.149 (incl. United States: 0.159); Correlation: −0.356 (incl. United States: 0.269)
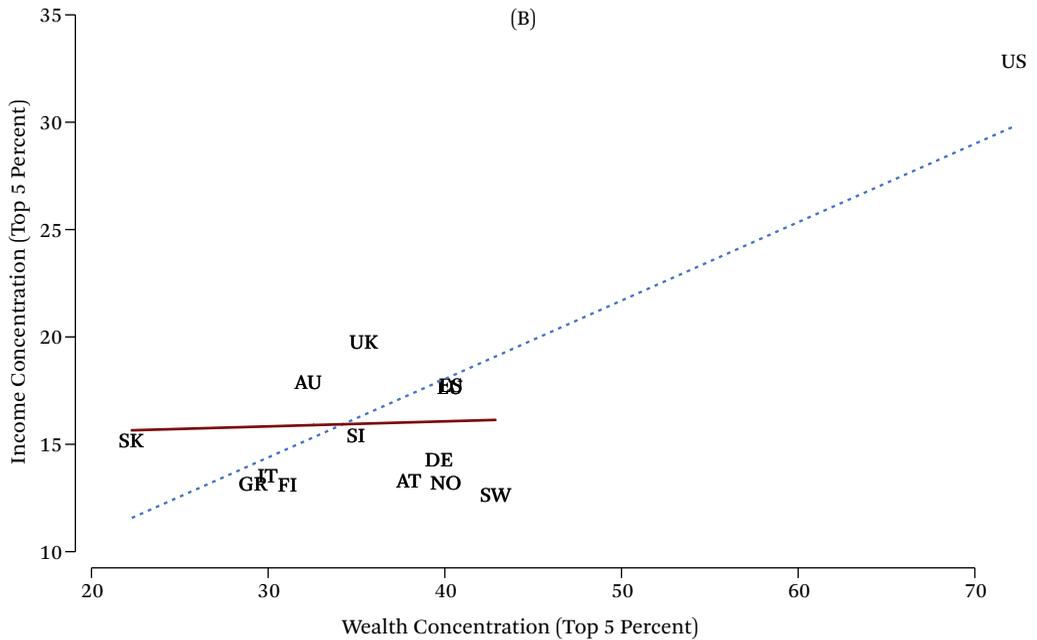
OLS Estimate: 0.024 (incl. United States: 0.365); Correlation: 0.059 (incl. United States: 0.795)

Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Inequality in wealth and income is measured using the Gini coefficient. Concentration is measured as the net worth (income) share held by the top 5 percent of the wealth (income) distribution. The dotted line is the fitted OLS line including the United States, the solid line is the fitted OLS line excluding the United States. For country labels and estimates, see table A1.

APPENDIX C. HOUSEHOLD-SIZE ADJUSTMENTS

The main results reported in the article do not include adjustments for household size. Estimates reported here adjust household wealth, dividing it by the square root of household size.

Figure C1. Wealth Gaps: Without and with Household Size Adjustments
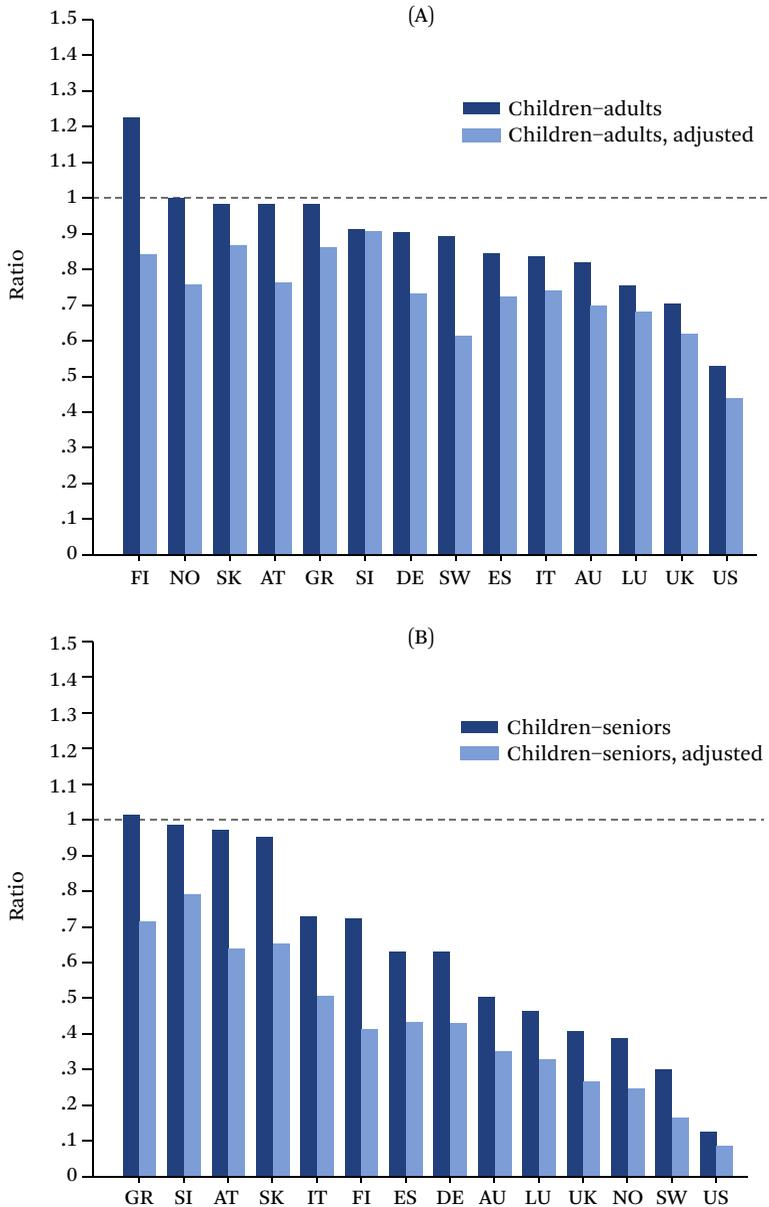
Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Darker bars display median wealth ratios based on net worth without adjustments for household size, lighter bars median wealth ratios based on net worth adjusted by household size, 1/√n. For country labels and estimates, see table A1.

Figure C2. Wealth Inequality: Without and with Household Size Adjustment
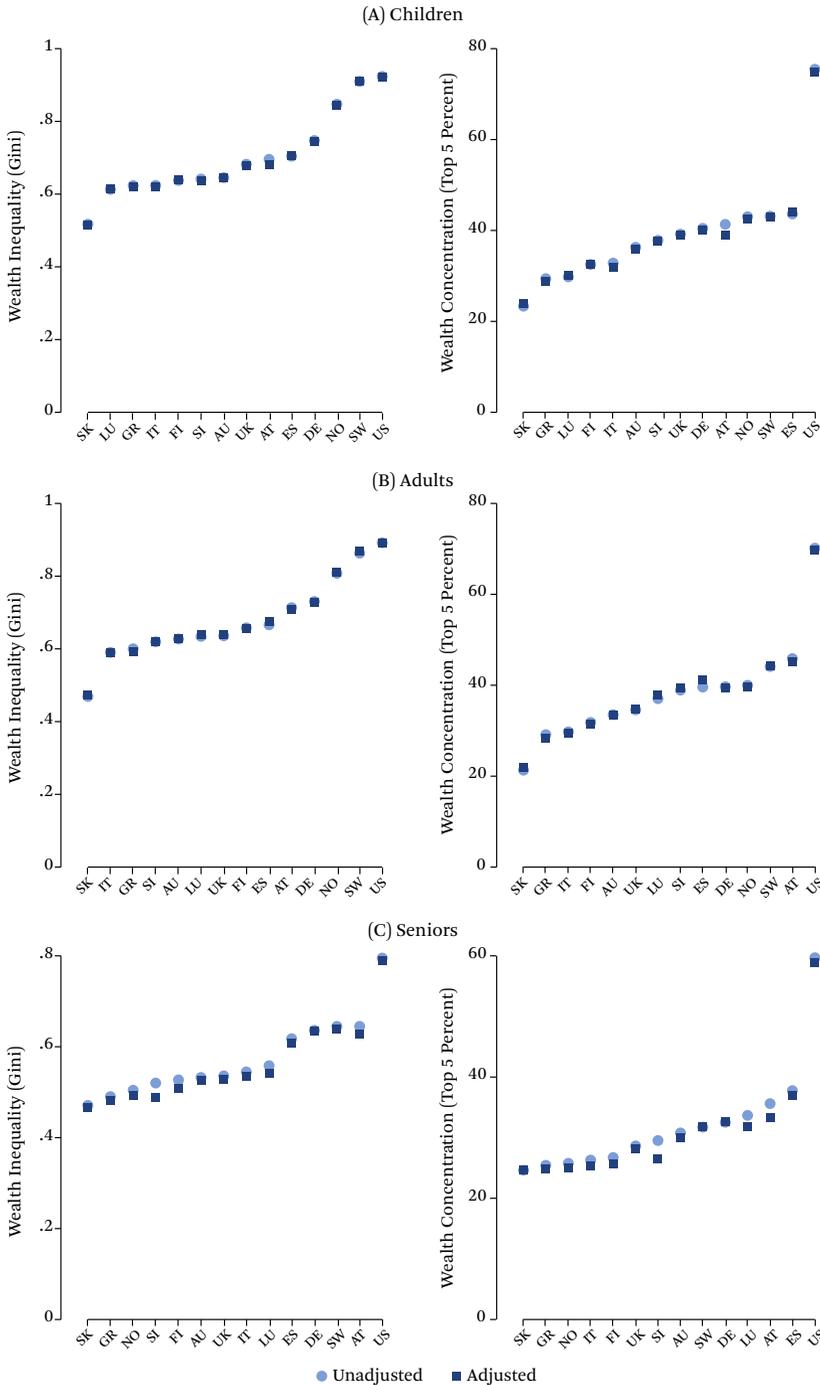
Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Inequality in wealth is measured using the net worth Gini coefficient. Concentration is measured as the net worth share held by the top 5 percent of the wealth distribution. Each measure is calculated separately among children, adults, and seniors and estimated without adjustment for household size (circles) and with adjustment for household size, $1/\sqrt{n}$ (squares). For country labels, see table A1.

Figure C3. Wealth Versus Income: With Household Size Adjustment
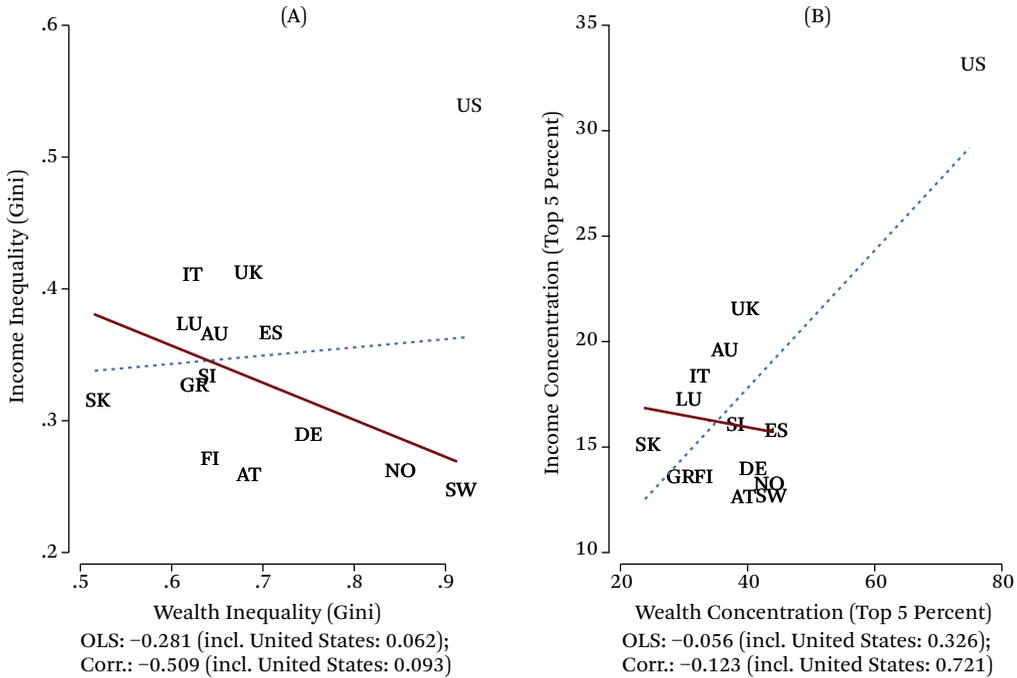
Source: Authors' tabulations based on the Luxembourg Wealth Study (LWS 2020).
Note: Inequality in wealth and income is measured using the Gini coefficient. Concentration is measured as the net worth (income) share held by the top 5 percent of the wealth (income) distribution. The dotted line is the fitted OLS line including the United States, the solid line is the fitted OLS line excluding the United States. For country labels and estimates, see table A1.

REFERENCES

Aalbers, Manuel B. 2016. *The Financialization of Housing. A Political Economy Approach*. London: Routledge.

Ameriks, John, Joseph Briggs, Andrew Caplin, Matthew D Shapiro, and Christopher Tonetti. 2015. "Long-Term-Care Utility and Late-in-Life Saving." *Journal of Political Economy* 128(5): 2375–51.

Ansell, Ben. 2014. "The Political Economy of Ownership: Housing Markets and the Welfare State." *American Political Science Review* 108(2): 383–402.

———. 2019. "The Politics of Housing." *Annual Review of Political Science* 22(1): 165–85.

Baker, Amy Castro. 2014. "Eroding the Wealth of Women: Gender and the Subprime Foreclosure Crisis." *Social Service Review* 88(1): 59–91.

Brady, David, Regina S. Baker, and Ryan Finnigan. 2013. "When Unionization Disappears: State-Level Unionization and Working Poverty in the United States." *American Sociological Review* 78(5): 872–96.

Cowell, Frank, Eleni Karagiannaki, and Abigail Mc Knight. 2018. "Accounting for Cross-Country Differences in Wealth Inequality." *Review of Income and Wealth* 64(2): 332–56.

Davies, James B. 2008. *Personal Wealth from a Global Perspective*. Oxford: Oxford University Press.

Davies, James B., Nicole M. Fortin, and Thomas Lemieux. 2017. "Wealth Inequality: Theory, Measurement and Decomposition." *Canadian Journal of Economics* 50(5): 1224–61.

Devlin-Foltz, Sebastian, Alice Henriques, and John Sabelhaus. 2016. "Is the U.S. Retirement System Contributing to Rising Wealth Inequality?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 59–85.

DiPrete, Thomas A., and Gregory M. Eirich. 2006. "Cumulative Advantage as a Mechanism for In-

equality. A Review of Theoretical and Empirical Developments." *Annual Review of Sociology* 32(1): 271–97.

Ebbinghaus, Bernhard. 2011. *The Varieties of Pension Governance: Pension Privatization in Europe*. Oxford: Oxford University Press.

Esping-Andersen, Gosta. 1990. *The Three Worlds of Welfare Capitalism*. Princeton, N.J.: Princeton University Press.

Fosse, Ethan, and Christopher Winship. 2019. "Analyzing Age-Period-Cohort Data: A Review and Critique." *Annual Review of Sociology* 45(1): 467–92.

Fuller, Gregory W., Alison Johnston, and Aidan Regan. 2019. "Housing Prices and Wealth Inequality in Western Europe." *West European Politics* 43(2): 297–320.

Gibson-Davis, Christina, and Heather D. Hill. 2021. "Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 1–26. DOI: 10.7758/RSF.2021.7.3.01.

Gibson-Davis, Christina M., and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55(3): 1009–32.

Gornick, Janet C., and Markus Jantti. 2010. "Child Poverty in Upper-Income Countries: Lessons from the Luxembourg Income Study." In *From Child Welfare to Child Well-Being*, edited by Sheila B. Kamerman, Shelley Phipps, and Asher Ben-Arieh. Dordrecht: Springer Netherlands.

Gornick, Janet C., and Marcia K. Meyers. 2003. *Families That Work: Policies for Reconciling Parenthood and Employment*. New York: Russell Sage Foundation.

Grabka, Markus M. 2015. "Income and Wealth Inequality After the Financial Crisis: The Case of Germany." *Empirica* 42(2): 372–90. DOI: 10.1007/s10663-015-9280-8.

Hacker, Jacob S. 2007. *The Great Risk Shift. The New Economic Insecurity and the Decline of the American Dream*. Oxford: Oxford University Press.

Haellsten, Martin, and Fabian T. Pfeffer. 2017. "Grand Advantage: Family Wealth and Grandchildren's Educational Attainment in Sweden." *American Sociological Review* 82(2): 328–60.

Hall, Peter, and David Soskice. 2001. *Varieties of Capitalism—The Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.

Jackson, Michelle, and David B. Grusky. 2018. "A Post-Liberal Theory of Stratification." *British Journal of Sociology* 69(4): 1096–133.

Johnston, Alison, Gregory W. Fuller, and Aidan Regan. 2020. "It Takes Two to Tango: Mortgage Markets, Labor Markets and Rising Household Debt in Europe." *International Review of Political Economy*. Published online April 3. DOI: 10.1080/09692290.2020.1745868.

Keister, Lisa A., and Stephanie Moller. 2000. "Wealth Inequality in the United States." *Annual Review of Sociology* 26(1): 63–81.

Killewald, Alexandra, Fabian T. Pfeffer, and Jared N. Schachner. 2017. "Wealth Inequality and Accumulation." *Annual Review of Sociology* 42(1): 379–404.

Kornrich, Sabino, and Frank Furstenberg. 2012. "Investing in Children. Changes in Parental Spending on Children, 1972–2007." *Demography* 50 (September): 1–23.

Leopold, Thomas, and Jan Skopek. 2015. "The Demography of Grandparenthood: An International Profile." *Social Forces* 94(2): 801–32.

Lin, Ken-Hou, and Donald Tomaskovic-Devey. 2013. "Financialization and U.S. Income Inequality, 1970–2008." *American Journal of Sociology* 118(5): 1284–329.

Luxembourg Wealth Study (LWS). 2020. Luxembourg Wealth Study Database (multiple countries). Luxembourg: LIS Cross-National Data Center. Available at: https://www.lisdatacenter.org/.

Maroto, Michelle. 2018. "Saving, Sharing, or Spending? The Wealth Consequences of Raising Children." *Demography* 55(6): 2257–82.

Marx, Karl. 1981. *Capital*, vol. 3, edited by David Fernbach. New York: Penguin Books.

Modigliani, Franco. 1988. "The Role of Intergenerational Transfers and Life Cycle Saving in the Accumulation of Wealth." *Journal of Economic Perspectives* 2(1): 15–40.

Morgan, Stephen L., and John C Scott. 2007. "Intergenerational Transfers and the Prospects for Increasing Wealth Inequality." *Social Science Research* 36(3): 1105–34.

Organization for Economic Co-operation and Development. 2017. *Starting Strong 2017. Key OECD*

Indicators on Early Childhood Education and Care. Paris: Organization for Economic Co-Operation and Development.

Pfeffer, Fabian T. 2011. "Status Attainment and Wealth in the United States and Germany." In *Persistence, Privilege, and Parenting*, edited by Timothy M. Smeeding, Robert Erikson, and Markus Jaentti. New York: Russell Sage Foundation.

Pfeffer, Fabian T., Sheldon Danziger, and Robert F. Schoeni. 2013. "Wealth Disparities Before and After the Great Recession." *Annals of the American Academy of Political and Social Science* 650(1): 98–123.

Pfeffer, Fabian T., and Robert F. Schoeni. 2016. "How Wealth Inequality Shapes Our Future." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 2–22. DOI: 10.7758/RSF.2016.2.6.01.

Pfeffer, Fabian, and Nora Waitkus. Forthcoming. "The Wealth Inequality of Nations." *American Sociological Review*.

Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Cambridge, Mass.: Belknap Press.

Rainwater, Lee, and Timothy M. Smeeding. 2003. *Poor Kids in a Rich Country: America's Children in Comparative Perspective*. New York: Russell Sage Foundation.

Rugh, Jacob S., and Douglas S. Massey. 2010. "Racial Segregation and the American Foreclosure Crisis." *American Sociological Review* 75(5): 629–51.

Schneider, Daniel, Orestes P. Hastings, and Joe LaBriola. 2018. "Income Inequality and Class Divides in Parental Investments." *American Sociological Review* 83(3): 475–507.

Schwartz, Herman M., and Leonard Seabrooke. 2009. "Varieties of Residential Capitalism in the International Political Economy: Old Welfare States and the New Politics of Housing." In *The Politics of Housing Booms and Busts*, edited by Herman M. Schwartz and Leonard Seabrooke, International Political Economy Series. London: Palgrave Macmillan.

Sierminska, Eva, Andrea Brandolini, and Timothy Smeeding. 2006. "The Luxembourg Wealth Study. A Cross-Country Comparable Database for Household Wealth Research." *Journal of Economic Inequality* 4 (December): 375–83.

Sierminska, Eva, and Karina Doorley. 2018. "To Own or Not to Own? Household Portfolios, Demographics and Institutions in a Cross-National Perspective." *Journal of Income Distribution* 25(1): 1–43.

Song, Xi, and Robert D. Mare. 2014. "Prospective Versus Retrospective Approaches to the Study of Intergenerational Social Mobility." *Sociological Methods & Research* 44(4): 555–84.

Spilerman, Seymour. 2000. "Wealth and Stratification Processes." *Annual Review of Sociology* 26(1): 497–524.

van Gunten, Tod, and Sebastian Kohl. 2020. "The Inversion of the 'Really Big Trade-Off': Homeownership and Pensions in Long-Run Perspective." *West European Politics* 43(2): 435–63.

van Gunten, Tod, and Edo Navot. 2018. "Varieties of Indebtedness: Financialization and Mortgage Market Institutions in Europe." *Social Science Research* 70 (February): 90–106.

Western, Bruce, and Jake Rosenfeld. 2011. "Unions, Norms, and the Rise in U.S. Wage Inequality." *American Sociological Review* 76(4): 513–37.

Wolff, Edward N. 1996. "International Comparisons of Wealth Inequality." *Review of Income and Wealth* 42(4): 433–51.

———. 2017. *A Century of Wealth in America*. Cambridge, Mass.: Belknap Press.

Investment, Saving, and Borrowing for Children: Trends by Wealth, Race, and Ethnicity, 1998–2016

NINA BANDELJ AND ANGELINA GRIGORYEVA

This article examines the link between wealth inequality and families' financial investment, saving, and borrowing for the sake of children. Using the 1998–2016 Survey of Consumer Finances data, we show that American families have increasingly engaged in financially more intensive parenting but that there are substantial differences by wealth and race-ethnicity. Over time, White families above median wealth accumulate more financial assets and education savings as well as less education debt for children. In contrast, Black and Hispanic families across the wealth distribution have low financial assets and education savings for children. In addition, for Black families across the wealth distribution education debt has grown to substantial amounts. These findings suggest that the contemporary norm of intensive parenting has unequal financial manifestations, which have likely contributed to the widening of wealth and racial inequalities, especially between White and Black child households.

Keywords: children, parenting, wealth, race-ethnicity, investment, debt, education

Wealth inequality increased dramatically over the past decades in the United States (Pfeffer and Schoeni 2016) and increased the most for families with children relative to any other type of household (Gibson-Davis and Percheski 2018). To contribute to the understanding of these trends, we focus in this article on families' financial behavior, specifically their monetary investment, saving, and borrowing for the sake of children, which potentially lessen or augment intergenerational wealth differences. We ask, first, whether financial investment, saving, and borrowing by Americans for their children changed over the past couple of decades, and, second, whether those changes varied by wealth and race-ethnicity. Although researchers have studied expenditures for children (Bianchi et al. 2004; Kornrich and Furstenberg 2013; Schneider, Hastings, and LaBriola 2018), we call for a more comprehensive analysis of the economy of parenting. We argue that over the past decades, families with children have adopted financially intensive parenting practices: they have become increasingly engaged

Nina Bandelj is professor of sociology and associate vice provost for faculty development at the University of California, Irvine, United States. **Angelina Grigoryeva** is assistant professor in the Department of Sociology at the University of Toronto, Canada.

in financial investment, saving, and borrowing for children. However, the types of these financial behaviors (be it monetary investment, saving, or borrowing), and amounts linked to them, have varied substantially across the wealth distribution and by race-ethnicity. Indeed, financially intensive parenting happens in a context of high racial wealth gaps in the United States (see Gibson-Davis and Hill 2021, this issue). Based on nationally representative, cross-sectional data from the Survey of Consumer Finances (SCF), White child households' median net worth (assets minus debts) was $95,610 in 2016, which was 2 percent lower than in 1998. Black child households' median net worth was only $510 in 2016 and has decreased from 1998 by 90 percent.[1] Median net worth for Hispanic child households was $5,600 in 2016 and has increased by 75 percent since 1998.

To answer the first question, analyzing SCF data, we find evidence of growing financial engagement of parents, as exemplified in the increasingly higher accumulation of financial assets[2] under children's names or co-owned with children, education savings for children, and education debt taken on for children, in the period between 1998 and 2016. As concerns the second question, we find that White families above median wealth have been investing significantly more financial assets and accumulating higher tax-advantaged education savings for their children over time. In contrast, Black and Hispanic families across the wealth distribution have low financial assets and education savings for children. In addition, among Black families across the wealth distribution, education debt has grown substantially.

WEALTH INEQUALITY TRENDS

As inequality in the United States increased on multiple dimensions over the past decades, inequality in wealth, an important outcome of social stratification (Killewald, Pfeffer, and Schachner 2017), rose most starkly (Gibson-Davis and Hill 2021, this issue). Since the 1960s, net worth of the top 1 percent of the wealth distribution increased sevenfold, and those at the top 90th percentile saw their wealth increase fivefold. In contrast, families at the bottom 10th percentile went from having no wealth to negative net worth, meaning that they had more debts than assets (Urban Institute 2017). The Gini coefficient for the wealth distribution increased from 0.79 to 0.85 since the late 1980s (Pfeffer and Schoeni 2016).

Wealth inequality did not grow equally across various sociodemographic groupings, however, and two patterns are particularly relevant for the purposes of our study. First, wealth inequality increased more for families with children than any other type of household (Gibson-Davis and Hill 2021, this issue; Gibson-Davis and Percheski 2018). Families with children witnessed large increases in net worth in the top 10 percent and the rise of the parental top 1 percent, accompanied by declining levels of median wealth, suggesting that those at the bottom were losing ground. Second, racial-ethnic gaps in wealth are vast and growing, particularly since the Great Recession (Killewald, Pfeffer, and Schachner 2017). The median wealth of White households is ten times greater than that of Black households and eight times that of Hispanic households. Notably, racial-ethnic disparities in wealth increase almost exponentially along the wealth distribution (Maroto 2016; Percheski and Gibson-Davis 2020). Moreover, the wealth of Black and Hispanic households dropped precipitously after the Great Recession in 2007 (McKernan et al. 2014), and Black households in particular have witnessed continued declines since then (Percheski and Gibson-Davis 2020). Indeed, Black-White household wealth gaps were smaller in 2004 than in 2016 (Wolff 2018). These existing and historical racial inequalities

1. Throughout the article, by Black we refer to those identifying in the Survey of Consumer Finances as non-Hispanic Black. Our data do not allow us to distinguish other racial-ethnic groups than White, non-Hispanic Black, and Hispanic. We define child households as those with children age twenty-four or younger.

2. Although the term *assets* is often used as synonymous with wealth, we use it in a narrower definition that refers to financial assets for children as the data from SCF allow us to distinguish. Financial assets for children include checking accounts, certificates of deposit, and savings and money market accounts under children's names or co-owned with children.

need to be considered when analyzing saving, investing, and borrowing for the sake of children.

FINANCIALIZATION AND INCREASING INDEBTEDNESS OF HOUSEHOLDS

Because the focus of this article is on financial behavior of families, it is important to place it in the context of broader trends of financialization of the U.S. economy (Krippner 2011; Davis and Kim 2015). Although the early literature on financialization has mostly focused on activities of firms (Krippner 2005; Epstein 2005), more recent work pays attention to the financialization of everyday life (Martin 2002; Pellandini-Simányi, Hammar, and Vargha 2015), as well as the consequence of financialization for inequality (Lin and Neely 2020). Scholars argue that availability of financial instruments has increased financial product consumption and leveraged investment (Davis 2009). Individuals have more aggressively pursued financial strategies, which make up today's "finance culture" (Langley 2007; Fligstein and Goldstein 2015) and have become more tolerant of risk-taking and debt-reliance (Lea, Webley, and Levine 1993). Indeed, financialization has made various forms of credit more readily available to broad swaths of the population, resulting in rising levels of household indebtedness in the United States since the 1970s (Dwyer 2018).

Many researchers attribute the significant growth in how much debt American households owe to stagnant wages and declining purchasing power of the middle class, also known as "the middle class squeeze" (Wolff 2010; Leicht 2012; Porter 2012; Warren and Tyagi 2016). Scholars argue that the processes of deindustrialization and proliferation of liberal market economic policies heightened labor-market insecurity and economic instability while weakening the state welfare protections (Rajan 2010; Carruthers and Kim 2011; Leicht and Fitzgerald 2014). This led to the rising economic pressures and fluctuations in household income that necessitate borrowing on credit for the groups whose wages have either been stagnant or in decline (Leicht and Fitzgerald 2007, 2014; Wolff 2010, 2012; Collins 2009; Montgomerie 2006, 2009; Bucks 2012; Porter 2012; Sullivan and Kaufman 2012; Warren and Thorne 2012). In-

debtedness rises when households experience a shock, such as job loss, illness, or death (Pressman and Scott 2009) because credit has assumed a function of a social safety net (Prasad 2012). Indeed, Joseph Cohen (2017) finds that the U.S. social welfare system provides little support for the working-age population and children. Hence middle-class families are taking on increasing debt to manage the rising costs of key basic necessities, such as education, childcare, or housing.

Other researchers examining indebtedness of households point to its cultural dimensions, namely, the changing understandings of the legitimacy of debt and financial engagement, as well as how maintaining or upgrading one's lifestyle through consumption has resulted in households' taking on more debt. Such status-driven accounts of indebtedness rely on classical sociological insights that social groups are differentiated through lifestyles marked by various consumption patterns (Weber 1946), and that people signal their wish to emulate groups with a higher social status through conspicuous consumption and the ostentatious display of wealth (Veblen 1994; but see Bagwell and Bernheim 1996; Ritzer 2001; Trigg 2001). Scholars document that people will often overleverage before reducing their consumption (Ritzer 1995; Frank 1999; Trigg 2001; Fligstein and Goldstein 2015), and that rising income inequality amplifies the increase in household debt via conspicuous consumption (Ritzer 1995; Schor 1999, 2007; Barba and Pivetti 2009; Wisman 2013). In line with this, Kerwin Charles, Erik Hurst, and Nikolai Roussanov (2009) find that Blacks and Hispanics use a greater share of their income on visible goods than Whites to signal their household's economic position. Examining the cultural dimensions of debt, scholars note that Americans have become "overspent" (Schor 1999), or caught "the luxury fever" (Frank 1999), influenced by media images of the super-rich lifestyle and misconceptions that the wealthy are their appropriate reference category (Ritzer 1995; Wisman 2013). Status consumption is related to household indebtedness because, in many cases, the only way consumers can furnish the increases in (conspicuous) consumption is by use of credit (Manning 2000).

Financialization of the economy has been

an unequal process (Lin and Neely 2020). That is, although access to financial products and services has generally widened, families of color relative to White families face differential access to financial markets, including banking and the credit market, often because of the state exclusionary policies and financial companies' discriminatory practices rooted in the long history of racial inequality in the United States (Seamster and Charron-Chenier 2017; Baradaran 2019). Further, as financial markets have become more complex, racial-ethnic inequalities in terms, conditions, and types of financial products and services have widened (Dwyer 2018; Rona-Tas and Guseva 2018). For instance, evidence from audit studies and observational research shows that Blacks and Hispanics not only experience higher rejection rates, but also receive less favorable terms when securing mortgages than Whites with similar sociodemographic characteristics and similar credit history (for a review, see Pager and Shepherd 2008). Moreover, research shows that monetary sanctions imposed on people convicted of crimes in the United States and consequent legal debt create a disproportionate burden for racial minorities (Harris, Evans, and Beckett 2010), which would contribute to racial wealth gap. In addition, parents who are more likely to have contact with the criminal justice system and a history of incarceration, and who are disproportionately Black, are also more likely to accumulate child support debt (Turetsky and Waller 2020).

THE RISE OF INTENSIVE PARENTING

Our aim is to connect macroeconomic changes in financialization and indebtedness to the world of families and parenting. Scholars and practitioners alike have debated ways of contemporary parenting, proposing that a cultural shift has been under way toward intensive parenting, or a more child-centered and time-intensive approach to raising children. Initially, research suggested that it is mostly mothers of middle- and upper-middle-class background who practice intensive parenting (Hays 1996; Bianchi, Robinson, and Milkie 2006; Nelson 2010; Ramey and Ramey 2010; Elliott, Powell, and Brenton 2015). Subsequently, studies documented that mothers and fathers alike have

been spending increasingly more time with children (Sayer, Bianchi, and Robinson 2004). They also point out, however, that the absolute amount of time and how it is spent vary between more- and less-educated parents (England and Srivastava 2013; Kalil, Ryan, and Corey 2012; Sayer, Bianchi, and Robinson 2004). This is related to Annette Lareau's (2003) influential study, which distinguishes between styles of parenting across social class, with middle- and upper-class parents practicing concerted cultivation (or organization of children's time and activities to help them become adept at institutional life) and lower-class parents practicing natural growth (or letting children structure their own time) (but see Calarco 2014; Weininger, Lareau, and Conley 2015).

Still, other research has countered the claim that intensive parenting is a sign of cultural capital among well-to-do parents, finding that parents of lower classes also exhibit such behavior (Chin and Phillips 2004; Waller 2010; Edin and Nelson 2013). To adjudicate between these perspectives, Patrick Ishizuka (2019) designed a survey experiment to gauge contemporary parenting standards using a nationally representative sample of parents that features variation across class groups. Ishizuka presented respondents with various vignette scenarios that reflected the more or less intensive parenting norm, such as a preference for structuring a child's time and enrolling a child in extracurricular activities over a perception that parents should let their child entertain themselves when bored. He concluded that "parents of different social classes express remarkably similar support for intensive mothering and fathering across a range of situations, whether sons or daughters are involved" (2019, 31). Even if not examining actual parenting practices, Ishizuka's study clearly points to the prevalence of the intensive parenting norm across socioeconomic groups.

Researchers have also asked how race and ethnicity may impact parenting. Although Lareau (2003) compares Black and White families, she does not identify significant differences between them in their parenting approach, with class differences prevailing. Recent studies of Black mothers also point to their intensive parenting (Dow 2019; Moore 2011; Turner 2020).

Beyond the Black and White comparison, researchers find that immigrant parents of Hispanic and Latinx background tend to have higher educational expectations for their children than native-born parents (Kao and Tienda 1994; Goyette and Xie 1999; Glick and White 2004; Feliciano and Lanuza 2016), which would suggest their focus on investing in children's education.

FINANCIALLY INTENSIVE PARENTING

This article advances research on intensive parenting by developing a perspective in the economy of parenting and turning the focus to financial behaviors and consequences of the intensive parenting norm, or what we call financially intensive parenting. Studies find that richer families spend increasingly more money on children (Kornrich and Furstenberg 2013; Schneider, Hastings, and LaBriola 2018). These studies suggest that well-to-do families are propelled by a motivation to maintain economic privilege and hoard economic and other status advantages in light of high economic inequality (Doepke and Zilibotti 2019; Schneider, Hastings, and LaBriola 2018).

We look beyond spending for children to consider a variety of financial behaviors that parents engage in for the sake of their children, including financial investment, savings, and borrowing on credit. Here we apply the social meaning of money and relational work in economy perspectives (Zelizer 1994; Bandelj, Wherry, and Zelizer 2017; Bandelj 2020), which assert that money is imbued with meaning and deployed differently in different social relationships. More specifically, people earmark money, or "assign different meanings and designate separate uses for particular kinds of monies" (Zelizer 1989, 343) and engage in "affirmation of social relations through economic activity" (Bandelj 2020, 11). Thus, we can expect the growing norm of intensive parenting to result in an increasing use of various monies earmarked for children to affirm the special relationship between parents and their children.

Indeed, over recent decades, the repertoire of financial instruments that parents can use for the sake of their children has widened. These instruments include various financial products, such as stocks, bonds, mutual funds, and money market accounts, that parents set up under their children's names. In addition, parents can take advantage of special financial instruments related to children's education, including 529 Savings Plans. These plans resulted from the creation of the Internal Revenue Code Section 529 in 1996 in response to some states' efforts to help parents meet the demands of rising college tuition (Holden 2002; Ma 2005). The plans allow parents to allocate pretax money earmarked for children's education into financial instruments, usually mutual funds, managed by financial firms hired by state governments. Reports show that the assets put aside in 529 plans grew to a record $329 billion as of year-end 2018, with the number of accounts rising to more than 13.8 million (College Savings 2020).

Moreover, credit-related instruments that parents can use to support children, primarily investment in children's education, are available. These include Parent Loans for Undergraduate Students (PLUS loans), offered by the federal government through the Federal Student Aid Office, which have become increasingly popular since the 1990s (Grigoryeva 2015; National Center for Education Statistics 2016). Zach Friedman (2019) reports that in 2019 the balances in Parent PLUS loans reached almost $89 billion. Parents can also take on loans from private lenders to support enrollment of their children in college.

Given the wide range of financial instruments available to parents, our goal is to investigate whether over time parents have increasingly engaged in financial behaviors that reflect their prioritization of children and investment in their education, and how these trends may vary by wealth and race-ethnicity. We therefore test three hypotheses. The first is that financially intensive parenting has grown in the past two decades, as exemplified in the increasingly higher share of financial assets under children's names or co-owned with children in light of all household assets, absolute amount of financial assets under children's names or co-owned with children, education savings for children, and education debt taken on for children. The second hypothesis is that financially intensive parenting behaviors will vary by wealth position. Specifically, given structural

constraints in wealth (Pfeffer and Schoeni 2016; Maroto 2016; Killewald, Pfeffer, and Schachner 2017), we expect parental financial behaviors that include investment and saving activity for children to be more pronounced among above-median-wealth households and parental financial behaviors that rely on borrowing on credit to be more pronounced among below-median-wealth households. The third hypothesis is that financially intensive parenting will differ across racial-ethnic groups, with Black and Hispanic families accumulating significantly fewer financial assets and savings for children than White families.

DATA AND METHODS

To document trends over time and across racial-ethnic groups in how families of different wealth status engage in financial investment, savings, and debt for the sake of children, we use data from the nationally representative, cross-sectional triannual Survey of Consumer Finances and focus on the survey waves from 1998 to 2016.[3] The SCF is among the best sources of data on a wide range of household financial activities (Keister 2014, 350), including saving, investing, and borrowing financial activities associated with investment in children. Also, the SCF collects detailed sociodemographic data, thus making it possible to disaggregate trends in financial activities for the sake of children by wealth and race-ethnicity.

All analyses focus on families with at least one child (coresident or non-coresident), twenty-four years old or younger. This age threshold is chosen because, as part of our analyses, we examine parental borrowing for children's education, which is mostly earmarked for college. For the other outcomes we examine, our results are robust to eighteen as the children's age threshold. For education debt, because the SCF does not collect information about for whose education the debt is accrued, we analyze only families with children where the household head is older than forty

(following other studies using SCF data, such as Akers and Chingos 2014) to exclude from the analysis families where parents are most likely paying off their own student loan debt rather than borrowing for children's education. In all the analyses, we focus on three racial-ethnic groups: Whites, Blacks, and Hispanics. We do not analyze trends for other racial-ethnic groups (such as Asians or Native Americans) because these are not distinguished in the SCF data.

Our analysis focuses on a range of financial activities for children that cover investments, saving, and borrowing. First, we examine financial assets under children's name or co-owned by children—including checking accounts, certificates of deposit, and savings and money market accounts—and both the absolute amount and as a share out of total household assets. Our second variable of interest is the amount of savings in state-sponsored education savings plans such as a 529 plan, which is available in the SCF since the 2001 wave.[4] An important advantage of these two measures is that they capture long-term savings earmarked for children, which have consequences for children's attainment and well-being. Also, both measures can be conceptualized as saving and investing simultaneously.

Next, in addition to saving and investing, we examine borrowing related to children. Our main focus is on debt accrued in education loans as a type of debt earmarked specifically for long-term investment into children. Additionally, we also consider, in supplementary analyses, mortgage debt and credit card debt. The SCF data do not let us distinguish to what extent mortgage and credit card debt are driven by investment into children as compared to other motives. However, research shows that schools are an important consideration in residential choices, and parents are willing to pay a premium for neighborhoods with better schools (Owens 2016). Evidence also shows that good school neighborhoods have been increas-

3. Although the data for debt goes back to 1989, we present analysis for the period of 1998 to 2016 for all outcomes in the interest of consistency. Our conclusions remain the same when we extend analysis for debt to 1989.

4. If education savings accounts are reported as co-owned with children, then they are also included in the measure of financial assets co-owned with children. Notably, among families with children with some (nonzero) education savings, the vast majority (68 percent) do not co-own education savings accounts with children.

ingly more expensive (Killewald, Pfeffer, and Schachner 2017; Johnson 2006; Shapiro 2004, 2017), which, for most families, would necessitate taking on more mortgage debt to afford to reside in such neighborhoods (Frank 2007; Warren and Tyagi 2016). Similarly, although credit card debt is not earmarked directly for children, parents may use this type of loan to fund expenditures on children, a practice shown to be on the rise (Kornrich and Furstenberg 2013; Schneider, Hastings, and LaBriola 2018). For all debt categories, we focus on absolute amounts. All dollar values are in 2016 U.S. dollars.

Our analysis also incorporates a range of demographic attributes. Our main variable of interest is household wealth, measured as all assets minus all debts (Killewald, Pfeffer, and Schachner 2017).[5] To examine trends by wealth, we divide the wealth distribution into two categories: above and below the median wealth (or top and bottom halves of the wealth distribution), where the median wealth splits are computed for the full sample. This categorization scheme is admittedly crude but ensures that the (unweighted) number of racial-ethnic minorities within each wealth category is large enough for making meaningful statistical inference. Descriptive statistics show that in 2016 only 19 percent of non-Hispanic Blacks and 23 percent of Hispanic families with children fall above median wealth for these racial-ethnic groups, and that this number is 54 percent of non-Hispanic White child households. Therefore, in some of our analyses for Whites, we distinguished also the top 20 and top 5 percent of

the wealth distribution. Other demographic variables include household income, education (measured by four dichotomous variables for high school degree, some college, college degree, or advanced degree, with less than high school being the reference category), number of children under twenty-five in the family, family structure (two-parent households being the reference category and two dichotomous indicators for single-parent family and all other families, where the latter includes, among others, multiple-generation households); age of the household head and its square term divided by 100, and gender of the respondent (a dichotomous variable with 1 = male).[6] Table A1 presents all variable definitions and descriptive statistics. Tables A2 through A5 present full regression results.

Our analysis proceeds in two steps. First, we present descriptive trends in financial activities disaggregated by wealth separately for each of the racial-ethnic groups in our analysis on the pooled SCF data across all survey years. Second, we examine the trends by wealth and race within the multivariate framework. For each group, we again pool the SCF data across all survey years and predict the outcome variables with an interaction term between household position in the wealth distribution and survey year, the main effects of these variables, and sociodemographic controls. In all of these analyses, we exclude the value of wealth components we use as outcomes from the estimates of absolute net worth and the median wealth splits.[7] Additionally, in all of our analyses, we follow previous research and apply weights to

5. Following research by Christina Gibson-Davis and Christine Percheski (2018), we exclude the value of vehicles because their resale value is far less than the consumption value. Our results remain the same when the value of vehicles is included toward a household's net worth.

6. For the individual-level sociodemographic attributes, we use the characteristics of the respondent reporting for the household. Because characteristics of all family members are reported by the respondent, we use these characteristics to minimize reporting errors. Our results remain substantively the same when we use average values between the respondent and the spouse (such as average educational attainment) or highest values of one of the spouses (such as, highest level of education). Data on children's attributes in the SCF are collected only for coresident children. Because non-coresident children (in college, for example) and information on their characteristics is missing in the SCF, we do not include any characteristics of the children in the models presented. Our results remain the same when we control for coresident children's attributes (such as age of the youngest coresident child).

7. Our results remain the same when the wealth measures do not exclude the values of wealth components used as our outcomes.

Table 1. Net Worth ($) for Child Households, SCF

	Whites	Blacks	Hispanics
1998	97,233	5,238	3,216
2001	122,614	9,078	2,574
2004	116,686	8,267	5,087
2007	132,014	2,259	10,422
2010	67,989	1,492	2,841
2013	84,087	0	1,660
2016	95,610	510	5,600
Percent change, 1998 to 2016	–2	–90	75

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: All dollar values are in 2016 U.S. dollars.

Table 2. Percent of Households Above Median Wealth for Child Households, SCF

	Whites	Blacks	Hispanics
1998	52	19	24
2001	54	17	17
2004	53	22	22
2007	52	22	25
2010	50	20	25
2013	53	17	20
2016	54	19	23

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).

account for the oversampling of wealthy households in SCF.

FINDINGS ABOUT FINANCIAL ACTIVITIES FOR CHILDREN

We first document sizable differences in net worth for White, Black, and Hispanic child households as well as trends over time. Based on the nationally representative SCF data, as exhibited in tables 1 and 2, the White child households' median net worth was at $95,610 in 2016, which was 2 percent lower than in 1998. In contrast, this figure was $510 for Black child households in 2016 and reflected a substantial decrease of 90 percent in Black child household median wealth since 1998. To compare, the median wealth for Hispanic child households was $5,600 in 2016, an increase of 75 percent since 1998. Moreover, the share of White families with children above median wealth (calculated on the basis of data for all families) increased from 52 percent in 1998 to 54 percent in 2016. In this period, the share of Black and Hispanic families above median wealth (calculated on the basis of data for all families) has hovered at around 19 percent and 23 percent respectively.

Descriptive Trends

Our examination of descriptive trends in monies earmarked for financial investment, saving, and borrowing for children shows that these have generally increased in the period we examine, from 1998 to 2016. The increasing trends are evident across wealth distribution and across racial groups, pointing to a prevalence of a common cultural norm of investment in children. However, in many ways, these financial trends also differ across wealth and across race-ethnicity, reflecting structural resource inequalities that dictate the absolute amounts of investment that can be made and amounts of debt that is accrued.

Figure 1. Financial Assets Under Children's Names, as Share of All Assets
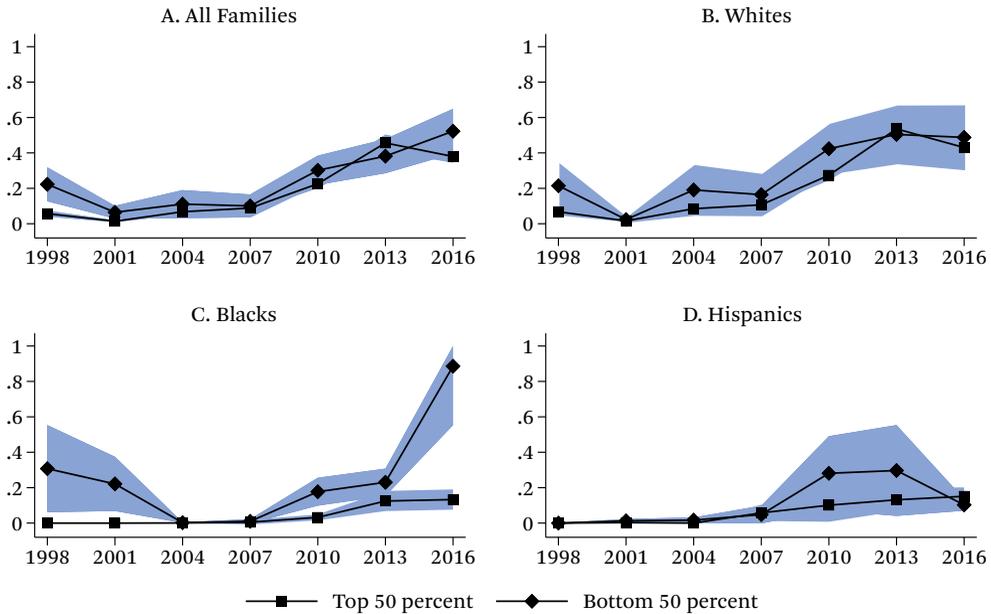
Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Means per year for families with children in the top 50 percent and bottom 50 percent on wealth distribution, with confidence intervals (shades). Among all families and within ethno-racial groups, increases over time are statistically significant for families above and beyond median wealth and show no statistically significant differences between the two. Differences between Blacks and Whites are not statistically significant. Differences between Hispanics and Whites are statistically significant.

In regard to financial assets under children's names (checking accounts, certificates of deposit, and savings and money market accounts), all child families in our sample, across wealth position, have allocated a progressively larger share of their assets toward children over time (figure 1). They have also allocated increasingly more monies in absolute terms (figure 2). However, the disparities in the actual amount of these assets are dramatic across wealth of families. Although below-median-wealth child households have increased from about $78 (in 1998) to about $242 (in 2016), the increases for above-median-wealth families have been orders of magnitude larger, starting at $238 (in 1998) and increasing to $5,520 (in 2016). Moreover, racial-ethnic differences in the amount of financial assets under children's names are stark, especially for above-median-wealth families. Here, White families above median wealth have increased financial assets for children

from $361 (in 1998) to $6,528 (in 2016). (As figure A1 shows, the size of these assets is even further pronounced for the top 5 percent in terms of wealth for White child households, which hold on average around $30,000 under children's names in 2016.) In contrast, the amount of financial assets under children's names for Black and Hispanic child households above median wealth stand at $784 and $1,622 respectively in 2016 (figure 2, panels C and D), rising from almost no such assets in 1998.

Education savings accounts (mostly 529 college savings plans) became available in the data set after 2000. As documented in figure 3, these savings plans quickly took off as a feature of investment in children but only for above-median-wealth child households, and specifically for above-median White child households. For instance, White families above median wealth have an average of around $10,000 in education savings accounts for children in

Figure 2. Financial Assets Under Children's Names ($)

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Means per year for families with children in the top 50 percent and bottom 50 percent on wealth distribution, with confidence intervals (shades). All dollar values are in 2016 U.S. dollars. Among all families and within ethno-racial groups, increases over time are statistically significant for families above and beyond median wealth, and are greater for families above median wealth (except among Hispanics). Differences between Blacks and Whites are statistically significant. Differences between Hispanics and Whites are statistically significant.

2016, relative to those below median wealth, where these savings have stagnated since 2001 around $40 (figure 3, panel B). (As figure A1 shows, these savings are quite large among the top 5 percent of White families, which typically have around $55,000 in those accounts). Among Hispanics, increases over time are statistically significant, showing no differences between families above and below median wealth. Among Blacks, amounts in 529 Savings Plans are quite negligible, and differences across the wealth distribution and over time for Black families are not statistically significant.

Regarding education debt (figure 4), we find that it has significantly increased for above-median- as well as below-median-wealth child households but has increased more substantially for below-median-wealth families. Moreover, education debt has increased substantially for Black child households, with values running at around $14,000 per household in

2016, for both above-median- and below-median-wealth families. For comparison, average education debt for White above-median child households is considerably lower, around $5,800 in 2016, which is consistent with the fact that education savings (figure 3) for this group have been increasing over time. Among Blacks and Hispanics, increases over time are statistically significant, and show no significant differences between those above and below median wealth. Differences between Blacks and Whites in education debt are not statistically significant but Hispanics have significantly less education debt than Whites.

Regression Results
Next we examine trends in financial investment, saving, and borrowing for children in a multivariate framework. Regression results are consistent with our descriptive findings, showing that financially intensive parenting has be-

Figure 3. Education Savings ($)
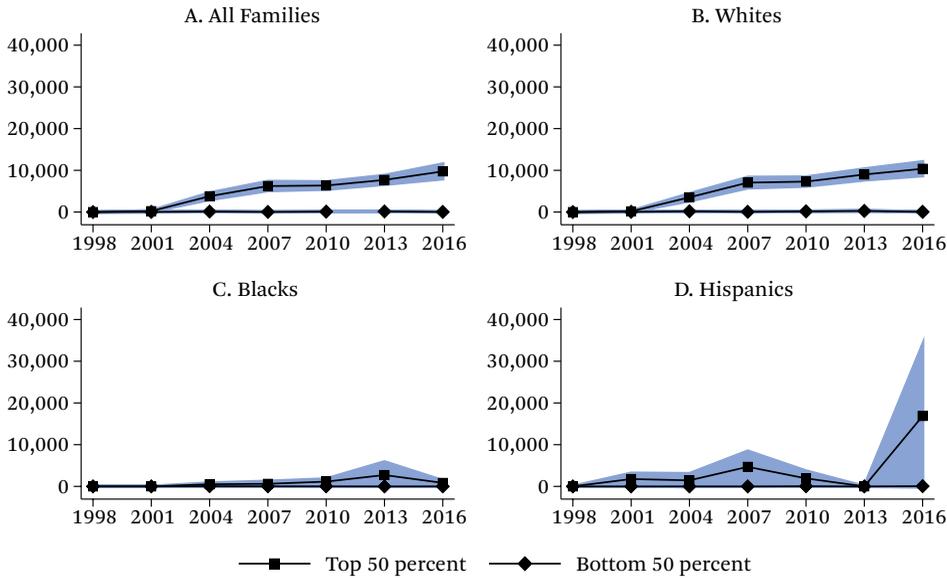
Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
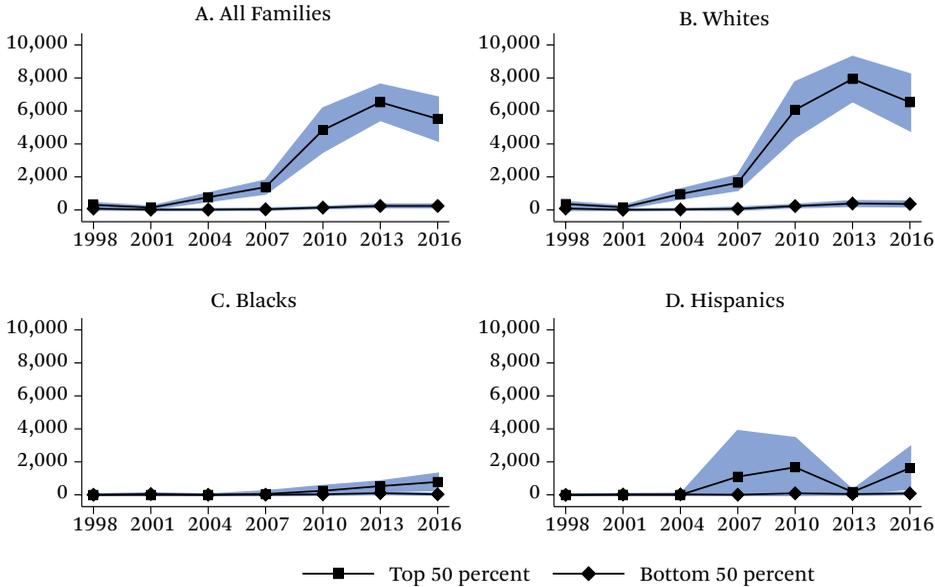*Note:* Means per year for families with children in the top 50 percent and bottom 50 percent on wealth distribution, with confidence intervals (shades). All dollar values are in 2016 U.S. dollars. When all families are analyzed, increases over time are statistically significant only for families above median wealth. These trends are driven entirely by Whites. Among Blacks, differences across the wealth distribution and over time are not statistically significant. Among Hispanics, increases over time are statistically significant, with no differences between families above and beyond median wealth. Differences between Blacks and Whites are statistically significant. Differences between Hispanics and Whites are statistically significant. In the interest of visual comparability across outcomes, we present education savings trends starting with 1998. The values for 1998 are 0 because data on education savings are collected in the SCF only since 2001 (see data and methods section).

come more pronounced over the past two decades.[8] Specifically, for financial assets under children's names as share of all family's assets the year coefficient is positive and statistically significant for all families (table 3, panel A). This is consistent with our proposition that the norm of financially intensive parenting has been growing for all child households. Indeed, no evidence suggests that families above median wealth have been more engaged in prioritizing children in the share of financial assets allocated to them than their counterparts below median wealth. Moreover, we note increas-

ing trends over time across racial-ethnic groups even if in absolute terms the share of assets allocated for children in Black and Hispanic families is less than in White families. In regard to the actual amounts of these assets (table 3, panel B), growth in financial assets for children for top 50 percent wealth families for all racial-ethnic groups over time is significant. Still, all else equal, White families above median wealth allocate about $411 more per year in financial assets under children's names; this figure is much lower for Black families at around $43, and for Hispanic families at around $88. These

8. Two differences between our descriptive and regression findings relate to Hispanics, which may be due to the loss of statistical power. For the amount of financial assets under children's names, the descriptive results indicate increases among all Hispanic families, and multivariate results indicate increases only for above-median-wealth Hispanic families. For education savings, the descriptive results indicate increases across all Hispanic families, but the coefficient is not significant in the multivariate framework, indicating no increases.

Figure 4. Education Debt ($)
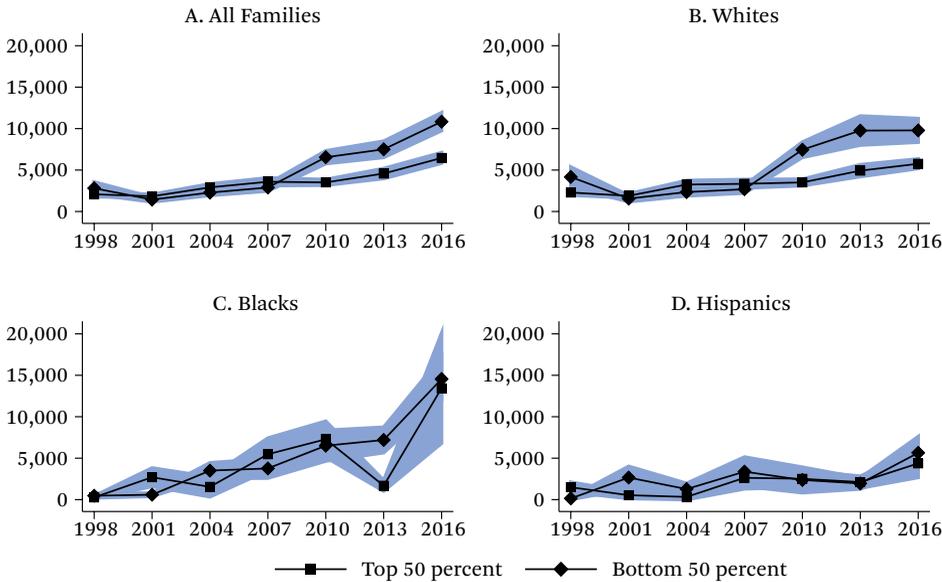
A. All Families
B. Whites
C. Blacks
D. Hispanics

■— Top 50 percent   ◆— Bottom 50 percent

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Means per year for families with children in the top 50 percent and bottom 50 percent on wealth distribution, with confidence intervals (shades). All dollar values are in 2016 U.S. dollars. When all families are analyzed, increases over time are statistically significant, and they are greater for families below median wealth. These trends are driven entirely by Whites. Among Blacks and Hispanics, increases over time are statistically significant for families above and beyond median wealth, and show no statistically significant differences between the two. Differences between Blacks and Whites are not statistically significant. Differences between Hispanics and Whites are statistically significant.

differences across racial-ethnic groups are statistically significant.

Next, the take-up of the education savings, mostly in 529 college savings plans, has increased significantly over time for White above-median-wealth child households (table 3, panel C). In contrast, Black child households have significantly less savings in 529 plans than Whites, but no notable difference between Whites and Hispanics is apparent. Some evidence does suggest that for Black families in the upper half of the wealth distribution, the education savings have been increasing over time, by about $105 per year. This figure for White families in the upper half of the wealth distribution is more than six times larger, at around $623 per year, net of all covariates.

In regard to education debt (table 3, panel D), notably, in the models for all families and for each of the groups separately, the year coefficient is positive and statistically significant,

indicating that education debt has increased substantially between 1998 and 2016 for all child households. The growth per year is the highest among Black households at about $690 each additional year, versus about $600 for Whites and $153 for Hispanics. In addition, consistent with descriptive analyses, the White and Black families have comparable amounts of education debt, and Hispanics have significantly less than Whites.

To examine the role of wealth position further, we conducted a sensitivity analysis in which we dropped families in the top 10 percent of the wealth distribution from our analytic sample to test the extent to which the trends we find for those above median wealth may be in fact driven by the most wealthy families. The results remain substantively the same for the families in the top 11th to 50th percentile in wealth, relative to the top 50 percent in wealth. That is, similar to the findings reported in ta-

Table 3. Multivariate Regression Results

	All	White	Black	Coef. Diff.	Hispanic	Coef. Diff.
Panel A. Financial assets under children's names (share of all assets), 1998–2016						
Top 50 percent wealth*year	.002	.003	–.017		–.004	
	.006	.008	.018		.005	
Year	.023***	.025**	.027+		.011***	+
	.006	.007	–.016		.003	
Top 50 percent wealth	–.066	–.065	.116		–.060	
	.063	.070	.173		.057	
Net worth	–.002*	–.002**	–.001		.002	
	.001	.001	.015		.012	
Black	–.128*					
	.061					
Hispanic	–.188***					
	.046					
N	15,438	11,581	2,035		1,822	
Panel B. Financial assets under children's names ($), 1998–2016						
Top 50 percent wealth*year	361.450***	411.247***	43.044*	***	87.784+	***
	46.990	55.954	16.667		52.791	
Year	12.369*	19.067*	1.520	+	–.898	*
	5.853	9.492	1.430		4.831	
Top 50 percent wealth	–2,233.021***	–2,329.966***	–301.453*	***	–818.243	*
	327.492	365.544	119.934		551.113	
Net worth	191.442	169.735	92.646		907.644	
	152.574	156.885	81.715		815.045	
Black	–613.417***					
	116.074					
Hispanic	–522.003**					
	170.776					
N	15,438	11,581	2,035		1,822	
Panel C. Education savings accounts ($), 2001–2016						
Top 50 percent wealth*year	594.216***	623.747***	105.624+	***	591.965	
	94.016	82.291	58.549		599.810	
Year	–10.421	–5.494	4.093		1.042	
	7.477	11.089	6.413		20.946	
Top 50 percent wealth	–2,308.891**	–1,992.757***	–1,291.671		–8,757.019	
	718.839	533.248	899.383		8,525.532	
Net worth	199.028	379.100**	5,273.897		–580.018	
	236.692	134.747	3,505.392		5,848.246	
Black	–762.136**					
	277.067					
Hispanic	385.027					
	980.627					
N	13,476	10,012	1,809		1,655	

Table 3. (*continued*)

	All	White	Black	Coef. Diff.	Hispanic	Coef. Diff.
Panel D. Education debt ($), 1998–2016						
Top 50 percent wealth*year	–399.805***	–478.779***	–276.734		–6.386	**
	64.877	91.542	318.801		105.640	
Year	550.895***	603.221***	686.082***		153.357*	***
	62.498	89.677	101.745		65.922	
Top 50 percent wealth	–2,033.948***	–1,968.698**	–3,412.741		–2,362.32*	
	533.170	695.544	2241.933		938.107	
Net worth	–136.970***	–119.143***	–2,524.323*	*	–485.016	
	21.440	19.559	1,110.806		315.958	
Black	722.739					
	485.102					
Hispanic	–1,202.716**					
	352.597					
N	9,625	7,858	937		830	

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Two-tailed tests; standard errors below coefficients. All models control for absolute net worth, income, education (less than high school as the reference category, high school degree, some college, college degree, and advanced degree), number of children under twenty-five in the family, family structure (two-parent households as the reference category, single-parent family, and all other families), age of the respondent and its squared term, and gender (1 = male). All dollar values are in 2016 U.S. dollars. The coefficient difference columns indicate whether the regression coefficients for Blacks and Hispanics, respectively, are significantly different from that for Whites. Income (in $100,000s); net worth (in $1,000,000s). Analysis of education debt is limited to families with children where the household head is older than forty (see data and methods section).
$^+p < .1$; $^*p < .05$; $^{**}p < .01$; $^{***}p < .001$

bles 3 through 6, the trends for top 11th through 50th percentile in wealth are statistically significantly different from those for families below median wealth on three indicators: in terms of the growing amount of financial assets under children's names over time, growing amounts of education savings over time, and lower education debt over time. This indicates that the rise of financially intensive parenting is not driven by only very wealthy families. In addition, the differences between households below the 50th percentile and the top 11th through 50th percentile in wealth are not significantly different in the share of financial assets for children, which has increased for families across the wealth distribution. We suggest this points to a broad common trend of increasing financial prioritization of children over time.

Other Findings

In addition to education loans, we also consider mortgage and credit card debt, with a caveat that they cannot be attributed directly to children (see methodology section). In terms of mortgage debt, our descriptive analysis shows that families above median wealth have significantly higher mortgage debt than those below median wealth, with $37,000 and $174,000, respectively, in 2016. These differences hold across all racial-ethnic groups, even if absolute levels of mortgage debt are lower for Blacks and Hispanics than for Whites. The multivariate analysis of mortgage debt shows that increases during the 1998 to 2016 period are only notable for White families, especially above-median-wealth White families. In fact, additional analysis reveals that these results are driven by families in the top 10 percent of the

wealth distribution. In contrast, credit card debt shows significant declines over time across racial-ethnic groups between 1998 and 2016, though it shows some increases over time for above-median-wealth White households.[9] Lack of overtime increases in credit card debt would be consistent with the idea that expenditures on children are mostly focused on long-term investment, such as for education, rather than short-term investment on consumer purchases. These analyses also show the limit of arguments about conspicuous consumption on credit as a major driver of household debt in recent decades.

Education of the respondent is also an important determinant of financial investment, saving, and borrowing for children. Especially taking on education savings such as 529 plans is strongly related to holding an advanced degree for Whites and Blacks, but not pronounced for Hispanics. This suggests that understanding financial instruments is not only a matter of material resources but also a part of cultural capital. In addition, holding mortgage, education, and credit card debt among child households across racial-ethnic groups is consistently related to education, with higher education being associated with more debt.

Our analyses also show that single-parent families among Blacks have a significantly higher share of financial assets devoted to children than other Black family forms, which is consistent with qualitative evidence uncovering the painstaking efforts of Black single mothers to parent their children, despite racism and structural disadvantages (Turner 2020). Another noteworthy finding is that when the man, relative to a woman, is responding to the survey on behalf of the household, reported financial assets for children as a share of all assets as well as the absolute amount of these assets in White families are significantly lower. Similarly, reported education debt is significantly lower and mortgage debt is significantly higher when the male is completing the survey for the White child household respondents. These gender differences are not notable for Black or Hispanic families.

DISCUSSION

Our study examines the link between wealth inequality and families' financial behavior related to their children using the Survey of Consumer Finances data, 1998 to 2016. We find evidence for our argument that, over the past few decades, American families increasingly practice financially intensive parenting, or engagement in financial investment, savings, and borrowing for the sake of their children, in large part to finance children's education. In addition, we find that the types of financial instruments and amounts of money invested or borrowed vary significantly across wealth position of child households, in particular when we compare families below and above median wealth. Moreover, these activities differ significantly across race and ethnicity. Over time, White families above median wealth accumulate more financial assets and education savings as well as less education debt for children. This suggests that with greater education savings, such as in 529 plans, White wealthy families have been financing college for their children without having to take on significant parental college debt. In contrast, Black and Hispanic families across the wealth distribution have accumulated fewer financial assets under children's names or co-owned with children. Moreover, Black families across wealth distribution have accumulated significant amounts of education debt relative to White families.

Scholars have documented the pervasiveness of the norm of intensive parenting (Ishizuka 2019). We place people's understandings of how to parent in the context of significant macroeconomic changes, brought on by forces of financialization, globalization, deindustrialization, the rise of the service sector, and the increasing prominence of precarious work (Kalleberg 2009). Americans today worry more about economic security than they did in the past (Cooper 2014) and college education is considered paramount to securing prosperity (Immerwahr and Foleno 2000). However, the costs of higher education have been increasing (Ramey and Ramey 2010; Carr 2013), and students and their families have come to rely on

9. Analyses for mortgage and credit card debts are available on request.

loans to pay for college education (Avery and Turner 2012; Houle 2014; Zaloom 2019), to a point where outstanding student loan balances are approaching $1 trillion (Brown et al. 2014). All these structural changes have affected how families focus on investment in children, especially into children's education. Our analysis shows that in the past two decades parents, not only college students, have taken on significantly more debt to cover their children's college expenses. Moreover, parents have also intensified the use of other financial instruments that support the norm of intensive parenting, such as allocating financial assets under children's names, and establishing education savings, such as 529 plans.

Additionally, we examine how this financially intensive parenting is affected by wealth inequality (Gibson-Davis and Hill 2021, this issue). Indeed, our analysis shows how unequal the consequences of financially intensive parenting are across the wealth distribution as well as racial-ethnic groups. It is the child households above median wealth, and especially White families, that have been able to accumulate increasingly more financial assets earmarked for their children as well as education savings that they can put toward their children's college education. The education savings accumulated in 529 plans provide tax advantages. Also, because monies in these 529 plans are highest among White families in the top 5 percent of the wealth distribution, who are able to invest thousands of dollars, they provide the most tax advantages to already rich families.

In regard to Black and Hispanic families' financial behavior for the sake of children, we find few differences across the wealth distribution of these families in the financial assets they are able to put aside for children. We do find evidence, however, that these families increasingly prioritize children, just as White families do, in the share of financial assets that they allocate toward children relative to their overall assets. Still, these financial assets for children as well as education savings for children by Black and Hispanic families are very low relative to what their White counterparts accumulate. In contrast, education debt for children has been increasing for families of all racial-ethnic backgrounds over the past two de-

cades. Moreover, for Black families across the wealth distribution, education debt has grown to substantial amounts. This is consistent with studies on PLUS loans, which show disproportionate take-up of these government loans by Black families relative to other families. Cautioning, these studies conclude that "PLUS loans are becoming predatory for Black PLUS borrowers who are more likely to be low income and low wealth, and who will likely struggle to repay" (Fishman 2018, 7). Hence, debt for children's college education represents significant pressure on limited resources of Black families who, at the same time, lack accumulation of financial assets and education savings for their children and have already seen their wealth holding decrease substantially in recent decades (Percheski and Gibson-Davis 2020) and are in a severely disadvantaged position relative to White families (Wolff 2018). Indeed, if Blacks take on education debt on predatory terms, as Louise Seamster and Raphael Charron-Chenier (2017) argue, then what seems like a valuable investment in children with potentially favorable outcomes is instead a liability with limited (or eliminated) longer-term benefits. Therefore, it is plausible that some of the devastating decline in Black child household wealth, 90 percent from 1998 to 2016 (table 2), is related to the fact that taking on education loans for their children has substantially depleted Black child household resources across generations. We hope that future research will more directly test this relationship.

Although our research provides empirical evidence on the rise of financially intensive parenting, our study has limitations. First, our analysis focuses on financial behaviors that we infer as related to long-term investing in children (such as education savings in 529 accounts or financial assets under children's names). However, it is possible that parents consider many other financial activities as related to investing in their children. Mortgages for houses may be related to parental investment in good school neighborhoods (Frank 2007; Owens 2016) but cannot be directly attributed to investment in children. Also, we do not have information on child arrears. Further, we cannot distinguish conclusively whether certain education loans that households have are specifically for

children's education. Hence our workaround by restricting the age of parents to forty in the analysis of determinants of education debt is not ideal. Also, because the SCF collects data only on the actual financial activities and not on the meanings attributed to them, our analysis cannot directly address the process of the social meaning of money (Zelizer 1994) motivating parental behavior.

CONCLUSION

That inequality in the United States has substantially increased over recent decades is clear. It is much less known that both income inequality (Western, Bloome, and Percheski 2008) and wealth inequality (Gibson-Davis and Percheski 2018) rose faster among households with children than among those without children. To explain this phenomenon, we contend, requires special attention to the inner workings of child households related to the economy of parenting. Specifically, we focus in this article on the trends in parental financial investment, saving, and borrowing for children over the past few decades, and we compare these trends by wealth of families and by their race-ethnicity.

Based on analyses of nationally representative samples of U.S. households collected by the Survey of Consumer Finances, we find evidence of rising financially intensive parenting behavior across American families between 1998 and 2016. But we also find evidence of substantial inequality across families, depending on their wealth position and their racial-ethnic background, in the type of financial parenting activities they engage in and the amounts they invest, save, or borrow for the sake of their children. White families above median wealth have been putting aside significant amounts of assets under children's names and accumulating education savings, which give them sizable tax advantages. On the other hand, Black and Hispanic families have significantly lower amounts of such assets in child-investment financial instruments, even if they have progressively increased assets that are dedicated to children as a share of all assets. Furthermore, Black and White families across the wealth distribution have accumulated significant amounts of education debt for their children. But Black families have less resources with which to repay the debt, and Black college graduates have lower earnings than Whites, limiting their ability to pay back loans. This suggests that the growing norm of intensive parenting across class and race—a valiant effort of families to try to do everything they can for their children—may, paradoxically, disadvantage children from minority households because it likely contributes to the growing intergenerational disparities in wealth inequality in America, most significantly between wealthy White child households and less well endowed Black child households (Gibson-Davis and Hill 2021, this issue; Percheski and Gibson-Davis 2020).

Ultimately, it appears that the price of parenting for American parents these days seems to be increasingly high, but not only in terms of the actual dollars invested, saved, or taken on credit for the sake of children. Instead, the high price of parenting is also borne by the society as a whole because of the significant inequality that results from the fact that some families benefit from investment into their children, and that others, trying equally hard to give their children opportunities these children deserve, further deplete their very limited resources. Consequently, when individual families attempt wholeheartedly to do everything they can for their children, including engaging in financially intensive parenting, the unintended societal consequences of such behavior mean that many children are left behind. Regrettably, the state and federal policies that financialize education, such as 529 plans and federal PLUS loans as well as linking school funding to property taxes, have likely widened disparities across families. Such policies encourage privatization of educational costs by individual families, but deep structural inequities across wealth and race have rigged the equality of opportunity in this education race. Structural reforms that call for better public funding of education from kindergarten through college are necessary if we are to see any systemic change that enshrines a collective responsibility for education and investment in all children.

Figure A1. Trends for White Child Households
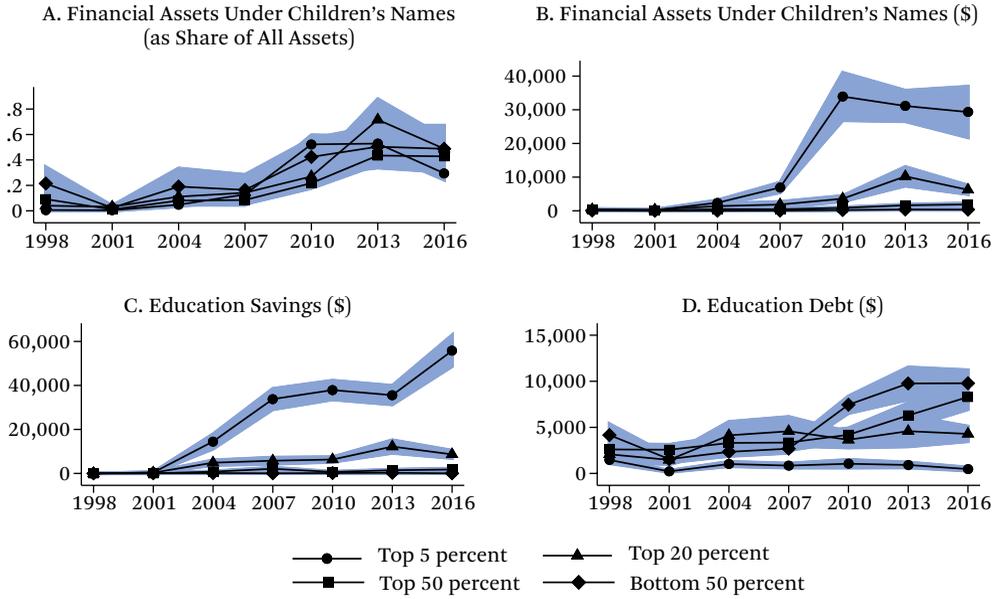
A. Financial Assets Under Children's Names
(as Share of All Assets)

B. Financial Assets Under Children's Names ($)

C. Education Savings ($)

D. Education Debt ($)

—●— Top 5 percent —▲— Top 20 percent
—■— Top 50 percent —◆— Bottom 50 percent

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Means per year for White families with children in the top 5 percent, top 20 percent, top 50 percent, and bottom 50 percent on wealth distribution, with confidence intervals (shades). All dollar values are in 2016 U.S. dollars. In the interest of visual comparability across all outcomes, we present the education savings (panel C) starting with 1998. The values for 1998 are zero because data on education savings are collected in the SCF only since 2001 (see data and methods section).

Table A1. Descriptive Statistics

Variable	Measurement	Mean	SD
Assets under children's name ($)	Financial assets owned by or co-owned with children ($)	1,255.400	23,399.810
Assets under children's name (ratio)	Above as share of all assets %	0.219	2.661
Educational savings	Amount ($) in educational savings accounts	2,403.104	29,661.540
Mortgage debt	Amount of outstanding mortgage debt ($)	91,757.950	158,582.300
Education debt	Amount of outstanding education debt ($)	5,259.436	19,735.010
Above median wealth	Dummy indicator for families above median wealth	0.430	0.495
Wealth	Absolute amount of net worth defined as all assets minus all debts ($)	53,361.330	3,813,542.000
Race and ethnicity	Respondent's race and ethnicity measured with three categories:		
	non-Hispanic White	0.698	0.459
	non-Hispanic Black	0.159	0.366
	Hispanic	0.143	0.350
Income	Household total income ($)	105,567.300	314,583.200
Education	Respondent's educational attainment measured with five categories:		
	less than high school (reference category)	0.129	0.336
	high school diploma	0.326	0.469
	some college	0.258	0.437
	college degree	0.176	0.380
	advanced degree	0.111	0.314
Children	Number of children under age twenty-five in the household	2.296	1.427
Family structure	Household type measured with three categories:		
	single adult	0.251	0.434
	couple household (reference category)	0.675	0.469
	other (multiple generations)	0.074	0.262
Gender	Dummy for respondent being male	0.797	0.402
Age	Respondent's age in years	41.584	10.157

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).

Note: N = 15,438. Descriptive statistics are provided for the sample of White, Black, and Hispanic families with at least one child (coresident or non-coresident) under age twenty-five. Descriptive statistics for education savings accounts are for survey years from 2001 to 2016 (N = 73,682). For wealth, median value is provided. All dollar values are in 2016 U.S. dollars.

Table A2. Regression for Financial Assets Under Children's Names (Share of All Assets)

	All	White	Black	Coef. Diff.	Hispanic	Coef. Diff.
Top 50 percent wealth*year	.002	.003	–.017		–.004	
	.006	.008	.018		.005	
Year	.023***	.025**	.027+		.011***	+
	.006	.007	–.016		.003	
Top 50 percent wealth	–.066	–.065	.116		–.060	
	.063	.070	.173		.057	
Net worth	–.002*	–.002**	–.001		.002	
	.001	.001	.015		.012	
Income	.002	.002	.003		–.001	
	.001	.001	.012		.009	
High school	.039	.147	–.461+	*	.114	
	.067	.085	.278		.079	
Some college	–.029	.038	–.356		.018	
	.061	.063	.287		.036	
College	.097	.173*	–.449	*	.542	
	.072	.068	.279		.360	
Advanced degree	.110+	.211**	–.378	*	.082	
	.064	.068	.272		.072	
Number of children	.042+	.027	.155		–.025*	*
	.025	.018	.116		.010	
Single parent	–.060	–.129+	.148*	**	.001	
	.051	.074	.064		.090	
Other family	–.049	–.020	.058		–.124**	
	.059	.102	.163		.034	
Age	.004	.005	–.008		.012+	
	.012	.016	.034		.007	
Age^2	–.008	–.011	.011		–.013*	
	.013	.016	.036		.006	
Male	–.343***	–.408**	–.293		–.120	+
	.085	.131	.119		.085	
Black	–.128*					
	.061					
Hispanic	–.188***					
	.046					
Constant	.212	.237	.174		–.124	
	.309	.392	.887		.254	
N	15,438	11,581	2,035		1,822	
R^2	0.006	0.006	0.018		0.007	

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Two-tailed tests; standard errors below coefficients. All dollar values are in 2016 U.S. dollars. The coefficient difference columns indicate whether the regression coefficients for Blacks and Hispanics, respectively, are significantly different from that for Whites. Income (in $100,000s); net worth (in $1,000,000s).
+$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

Table A3. Regression for Financial Assets Under Children's Names ($)

	All	White	Black	Coef. Diff.	Hispanic	Coef. Diff.
Top 50 percent wealth*year	361.450***	411.247***	43.044*	***	87.784+	***
	46.990	55.954	16.667		52.791	
Year	12.369*	19.067*	1.520	+	–.898	*
	5.853	9.492	1.430		4.831	
Top 50 percent wealth	–2233.021***	–2329.966***	–301.453*	***	–818.243	*
	327.492	365.544	119.934		551.113	
Net worth	191.442	169.735	92.646		907.644	
	152.574	156.885	81.715		815.045	
Income	589.549*	617.427*	6.878	*	155.534	
	278.901	299.824	26.877		300.041	
High school	–99.515	28.822	23.280		–7.387	
	76.281	127.756	26.255		89.265	
Some college	–238.689*	–164.063	–8.123		–104.765	
	93.335	139.506	32.226		97.631	
College	1197.687*	1486.591*	–46.031	**	1224.506	
	469.944	583.445	36.803		1085.969	
Advanced degree	2600.051**	3052.357**	327.794	**	91.815	**
	766.406	893.282	211.295		797.863	
Number of children	268.618*	430.092*	–.025	*	–54.813+	*
	117.696	188.683	8.291		28.166	
Single parent	–500.703**	–724.956**	26.433	**	–178.459	*
	162.439	236.117	44.478		127.673	
Other family	–490.679***	–614.199**	–14.494	**	–258.887*	
	122.083	188.743	49.492		129.152	
Age	67.753	120.097	6.478		56.974	
	64.453	85.544	5.312		44.007	
Age^2	–73.785	–128.942	–5.415		–72.660	
	87.962	116.190	6.774		58.432	
Male	–565.299**	–762.651*	43.395	*	–75.410	*
	205.267	337.202	43.619		66.412	
Black	–613.417***					
	116.074					
Hispanic	–522.003**					
	170.776					
Constant	–1668.004	–3411.442*	–173.750		–818.609	
	1076.543	1443.472	113.040		669.38	
N	15,438	11,581	2,035		1,822	
R^2	0.020	0.021	0.026		0.026	

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Two-tailed tests; standard errors below coefficients. All dollar values are in 2016 U.S. dollars. The coefficient difference columns indicate whether the regression coefficients for Blacks and Hispanics, respectively, are significantly different from that for Whites. Income (in $100,000s); net worth (in $1,000,000s).
+$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

Table A4. Regression for Education Savings Accounts, 2001–2016 ($)

	All	Whites	Blacks	Coef. Diff.	Hispanics	Coef. Diff.
Top 50 percent wealth*year	594.216***	623.747***	105.624+	***	591.965	
	94.016	82.291	58.549		599.810	
Year	−10.421	−5.494	4.093		1.042	
	7.477	11.089	6.413		20.946	
Top 50 percent wealth	−2,308.891**	−1,992.757***	−1,291.671		−8,757.019	
	718.839	533.248	899.383		8,525.532	
Net worth	199.028	379.100**	5,273.897		−580.018	
	236.692	134.747	3,505.392		5,848.246	
Income	1,214.133*	692.695***	−1,385.492	*	12,837.52	
	550.208	199.311	947.753		11,850.07	
High school	1.902	−60.320	118.305		−1,177.175	
	243.192	191.859	91.638		1,446.038	
Some college	47.987	−101.124	270.478		−1,293.556	
	273.477	218.816	236.517		2,022.954	
College	2,420.065***	3,081.647***	405.797	***	−3,809.014	
	448.958	525.440	247.090		4,994.532	
Advanced degree	7,328.726***	7,808.883***	1,070.348*	***	9,523.515	
	1,398.919	1,453.226	422.610		9,600.796	
Number of children	565.518***	764.985**	−18.385	**	320.887	
	155.816	230.944	40.822		303.165	
Single parent	−136.510	−172.341	−244.592		612.693	
	397.506	604.260	236.252		1230.726	
Other family	−1,015.275***	−1,360.487***	−333.004	**	80.972	+
	218.736	266.247	214.879		808.267	
Age	190.897**	295.630**	88.890+	*	−301.355	
	68.368	91.041	49.525		354.860	
Age^2	−215.730*	−326.149**	−116.439+		367.856	
	90.777	118.974	64.461		433.018	
Male	−540.764	−369.056	157.208		−2,027.520	
	414.132	677.943	136.074		1,770.959	
Black	−762.136**					
	277.067					
Hispanic	385.027					
	980.627					
Constant	−5,725.357***	−8,542.398***	−1,085.986*		1,449.595	
	1,615.662	1,927.163	528.299		4,067.191	
N	13,476	10,012	1,809		1,655	
R^2	0.048	0.050	0.257		0.235	

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Two-tailed tests; standard errors below coefficients. All dollar values are in 2016 U.S. dollars. The coefficient difference columns indicate whether the regression coefficients for Blacks and for Hispanics, respectively, are significantly different from that for Whites. Income (in $100,000s); net worth (in $1,000,000s).
+$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

Table A5. Regression for Education Debt ($)

	All	White	Black	Coef. Diff.	Hispanic	Coef. Diff.
Top 50 percent wealth*year	−399.805***	−478.779***	−276.734		−6.386	**
	64.877	91.542	318.801		105.640	
Year	550.895***	603.221***	686.082***		153.357*	***
	62.498	89.677	101.745		65.922	
Top 50 percent wealth	−2,033.948***	−1,968.698**	−3,412.741		−2362.32*	
	533.170	695.544	2,241.933		938.107	
Net worth	−136.970***	−119.143***	−2,524.323*	*	−485.016	
	21.440	19.559	1,110.806		315.958	
Income	28.903	23.871	2,825.56*	*	34.109	
	25.355	24.800	1,271.427		315.935	
High school	2,317.135***	2,839.402***	477.621	**	1653.259*	
	309.94	381.328	656.467		727.541	
Some college	4,962.858***	5,342.411***	4,375.023***		1,655.018***	***
	372.447	427.831	1,153.092		457.143	
College	7,229.264***	6896.75***	8,846.068***		9,255.891***	
	625.716	643.682	1,446.127		2235.081	
Advanced degree	1,0641.3***	9,757.45***	21,337.05***	**	9,197.817**	
	944.271	990.839	4,236.284		2659.26	
Number of children	−82.046	127.140	−543.314*	*	−319.119**	*
	113.158	166.397	253.033		122.592	
Single parent	−2,638.098***	−3589.425***	−546.396	**	504.354	***
	334.806	396.967	999.052		640.093	
Other family	922.084	130.673	2,405.419		2607.218	
	602.190	656.698	1704.959		1601.18	
Age	279.377	421.418+	−966.090+	*	1,445.408**	*
	186.545	228.887	497.928		468.835	
Age^2	−320.850*	−424.008*	691.094	*	−1,356.981**	*
	161.168	195.085	428.300		422.633	
Male	−957.015*	−1,755.64***	364.423	+	1,108.998	*
	401.191	442.010	1,066.09		991.283	
Black	722.739					
	485.102					
Hispanic	−1,202.716**					
	352.597					
Constant	−6750.13	−10,767.91	26,437.81+		−38265.17**	
	5,459.755	6,752.411	14,227.23		13185.18	
N	9,625	7,858	937		830	
R^2	0.055	0.052	0.127		0.064	

Source: Authors' calculations based on the Survey of Consumer Finances (Federal Reserve 2020).
Note: Two-tailed tests; standard errors below coefficients. All dollar values are in 2016 U.S. dollars. The coefficient difference columns indicate whether the regression coefficients for Blacks and for Hispanics, respectively, are significantly different from that for Whites. Income (in $100,000s); net worth (in $1,000,000s).
 +$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

REFERENCES

Akers, Beth, and Matthew Chingos. 2014. "Is a Student Loan Crisis on the Horizon?" Washington, D.C.: Brookings Institution. Accessed December 16, 2020. https://www.brookings.edu/research/is-a-student-loan-crisis-on-the-horizon.

Avery, Charles, and Stephen Turner. 2012. "Student Loans: Do College Students Borrow Too Much—Or Not Enough?" *Journal of Economic Perspectives* 26(1): 165–92.

Bagwell, Laurie S., and Douglas B. Bernheim. 1996. "Veblen Effects in a Theory of Conspicuous Consumption." *American Economic Review* 86(3): 349–73.

Bandelj, Nina. 2020. "Relational Work in the Economy." *Annual Review of Sociology* 46 (July): 251–72.

Bandelj, Nina, Frederick F. Wherry, and Viviana A. Zelizer. 2017. *Money Talks: Explaining how Money Really Works*. Princeton, N.J.: Princeton University Press.

Baradaran, Mehrsa. 2019. *The Color of Money: Black Banks and the Racial Wealth Gap*. Cambridge, Mass.: Harvard University Press.

Barba, Aldo, and Massimo Pivetti. 2009. "Rising Household Debt: Its Causes and Macroeconomic Implications—A Long-Period Analysis*." Cambridge Journal of Economics* 33(1): 113–37.

Bianchi, Suzanne, Philip N. Cohen, Sara Raley, and Kei Nomaguchi. 2004. "Inequality in Parental Investment in Child-Rearing: Expenditures, Time, and Health." In *Social Inequality*, edited by Katherine M. Neckerman. New York: Russell Sage Foundation.

Bianchi, Suzanne M., John P. Robinson, and Melissa A. Milke. 2006. *The Changing Rhythms of American Family Life*. New York: Russell Sage Foundation.

Board of Governors of the Federal Reserve System (Federal Reserve). 2020. Survey of Consumer Finances data set. Washington: Federal Reserve. Last modified November 17. Available at: https://www.federalreserve.gov/econres/scfindex.htm.

Brown, Meta, Andrew Haughwout, Donghoon Lee, Joelle Scally, and Wilbert van der Klaauw. 2014. *Measuring Student Debt and Its Performance*. New York: Federal Reserve Bank of New York.

Bucks, Brian K. 2012. "Out of Balance Financial Distress in U.S. Households." In *Broke: How Debt Bankrupt the Middle Class*, edited by Katherine Porter. Stanford, Calif.: Stanford University Press.

Calarco, McCrory, Jessica. 2014. "Coached for the Classroom: Parents' Cultural Transmission and Children's Reproduction of Inequalities." *American Sociological Review* 79(5): 1015–37.

Carr, Christopher. 2013. "What's Really Behind the Ever-Rising Cost of Raising a Child in America." *The Atlantic*, August 26. Accessed December 16, 2020. http://www.theatlantic.com/business/archive/2013/08/what-s-really-behind-the-ever-rising-cost-of-raising-a-child-in-america/279034.

Carruthers, Bruce G., and Jeong-Chul Kim. 2011. "The Sociology of Finance." *Annual Review of Sociology* 37(1): 239–59.

Charles, Kerwin Kofi, Erik Hurst, Nikolai Roussanov. 2009. "Conspicuous Consumption and Race." *Quarterly Journal of Economics* 124(2): 425–67.

Chin, Tiffani, and Meredith Phillips. 2004. "Social Reproduction and Child-Rearing Practices: Social Class, Children's Agency, and the Summer Activity Gap." *Sociology of Education* 77(3): 185–210.

Cohen, Joseph. 2017. *Financial Crisis in American Households: The Basic Expenses that Bankrupt the Middle Class*. New York: Praeger.

College Savings. 2020. "529 Plan Data." College Savings Plan Network. Accessed December 16, 2020. https://www.collegesavings.org/529-plan-data.

Collins, Jane L. 2009. "The Age of Wal-Mart." In *The Insecure American: How We Got Here and What We Should Do About It,* edited by Hugh Gusterson, and Catherine Besteman. Berkeley: University of California Press.

Cooper, Marianne. 2014. *Cut Adrift: Families in Insecure Times*. Berkeley: University of California Press.

Davis, Gerald F. 2009. *Managed by the Markets*. New York: Oxford University Press.

Davis, Gerald F., and Suntae Kim. 2015. "Financialization of the Economy." *Annual Review of Sociology* 41(1): 203–21.

Doepke, Matthias, and Fabrizio Zilibotti. 2019. *Love, Money, and Parenting: How Economics Explains the Way We Raise Our Kids.* Princeton, N.J.: Princeton University Press.

Dow, Dawn. 2019. *Mothering While Black*. Berkeley: University of California Press.

Dwyer, Rachel. 2018. "Credit, Debt, and Inequality." *Annual Review of Sociology* 44(1): 237–61.

Edin, Kathryn, and Timothy J. Nelson. 2013. *Doing

the Best I Can: Fatherhood in the Inner City. Berkeley: University of California Press.

Elliott, Sinikka, Rachel Powell, and Joslyn Brenton. 2015. "Being a Good Mom: Low-Income, Black Single Mothers Negotiate Intensive Mothering." *Journal of Family Issues* 36(3): 351–37.

England, Paula, and Anjula Srivastava. 2013. "Educational Differences in U.S. Parents' Time Spent in Child Care: The Role of Culture and Cross-spouse Influence." *Social Science Research* 42(4): 971–88.

Epstein, Gerald A., ed. 2005. *Financialization and the World Economy.* North Hampton, Mass.: Edward Elgar Publishing.

Feliciano, Cynthia, and Yader R. Lanuza. 2016. "The Immigrant Advantage in Adolescent Educational Expectations." *International Migration Review* 1(1): 1–35.

Fishman, Rachel. 2018. "The Wealth Gap PLUS Debt: How Federal Loans Exacerbate Inequality for Black Families." Washington, D.C.: New America. Accessed December 16, 2020. https://www.newamerica.org/education-policy/reports/wealth-gap-plus-debt/introduction.

Fligstein, Neil, and Adam Goldstein. 2015. "The Emergence of a Finance Culture in American Households, 1989–2007." *Socio-Economic Review* 13(3): 575–601.

Frank, Robert. 1999. *Luxury Fever: Money and Happiness in an Era of Excess*. Princeton, N.J.: Princeton University Press.

———. 2007. *Falling Behind: How Rising Inequality Harms the Middle Class*. Berkeley: University of California Press.

Friedman, Zach. 2019. "Parents Owe $89 Billion In Student Loans—Here's What To Do About It." *Forbes*, May 7. Accessed December 16, 3030. https://www.forbes.com/sites/zackfriedman/2019/05/07/student-loans-parents-seniors/#3c0a55581e62.

Gibson-Davis, Christina, and Heather D. Hill. 2021. "Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 1–26. DOI: 10.7758/RSF.2021.7.3.01.

Gibson-Davis, Christina, and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55(3): 1009–32.

Glick, Jennifer E., and Michael J. White. 2004. "Post-Secondary School Participation of Immigrant and Native Youth: The Role of Familial Resources and Educational Expectations." *Social Science Research* 33(2): 272–99.

Goyette, Kimberly, and Yu Xie. 1999. "Educational Expectations of Asian American Youths: Determinants and Ethnic Differences." *Sociology of Education* 72(1): 22–36.

Grigoryeva, Angelina. 2015. "College Debt." In *The SAGE Encyclopedia of Economics and Society*, edited by Frederick Wherry. Los Angeles: Sage Publications.

Harris, Alexes, Heather Evans, and Katherine Beckett. 2010. "Drawing Blood from Stones: Legal Debt and Social Inequality in the Contemporary United States." *American Journal of Sociology* 115(6): 1753–99.

Hays, Sharon. 1996. *The Cultural Contradictions of Motherhood*. New Haven. Conn.: Yale University Press.

Holden, Sarah. 2002. "Saving for College with 529 Plans." *Proceedings. Annual Conference on Taxation and Minutes of the Annual Meeting of the National Tax Association* 95(2002): 89–98.

Houle, Jason. 2014. "Disparities in Debt: Parents' Socioeconomic Resources and Young Adult Student Loan Debt." *Sociology of Education* 87(1): 53–69.

Immerwahr, John, and Tony Foleno. 2000. *Great Expectations: How the Public and Parents—White, African American and Hispanic—View Higher Education*. New York: National Center for Public Policy and Higher Education.

Ishizuka, Patrick. 2019. "Social Class, Gender, and Contemporary Parenting Standards in the United States: Evidence from a National Survey Experiment." *Social Forces* 98(1): 31–58.

Johnson, Heather Beth. 2006. *The American Dream and the Power of Wealth: Choosing Schools and Inheriting Inequality in the Land of Opportunity*. New York: Routledge.

Kalil, Ariel, Rebecca Ryan, and Michael Corey. 2012. "Diverging Destinies: Maternal Education and the Developmental Gradient in Time with Children." *Demography* 49(4): 1361–83.

Kalleberg, Arne L. 2009. "Precarious Work, Insecure Workers: Employment Relations in Transition." *American Sociological Review* 74(1): 1–22.

Kao, Grace, and Marta Tienda. 1994. "Optimism and Achievement: The Educational Performance of

Immigrant Youth." *Social Science Quarterly* 76(1): 1–19.

Keister, Lisa. 2014. "The One Percent." *Annual Review of Sociology* 40(1): 347–67.

Killewald, Alexandra, Fabian T. Pfeffer, and Jared N. Schachner. 2017. "Wealth Inequality and Accumulation." *Annual Review of Sociology* 43(1): 379–404.

Kornrich, Sabino, and Frank Furstenberg. 2013. "Investing in Children: Changes in Parental Spending on Children, 1972–2007." *Demography* 50(1): 1–23.

Krippner, Greta R. 2005. "The Financialization of the American Economy." *Socio-Economic Review* 3(2): 173–208.

———. 2011. *Capitalizing on Crisis: The Political Origins of the Rise of Finance*. Cambridge, Mass.: Harvard University Press.

Langley, Paul. 2007. "Uncertain Subjects of Anglo-American Financialization." *Cultural Critique* 65 (Winter): 67–91.

Lareau, Annette. 2003. *Unequal Childhoods: Race, Class, and Family Life*. Berkeley: University of California Press.

Lea, Stephen E.G., Paul Webley, and R. Mark Levine. 1993. "The Economic Psychology of Consumer Debt." *Journal of Economic Psychology* 14(1): 58–119.

Leicht, Kevin. 2012. "Borrowing to the Brink: Consumer Debt in America." In *Broke: How Debt Bankrupt the Middle Class*, edited by Katherine Porter. Stanford, Calif.: Stanford University Press.

Leicht, Kevin, and Scott Fitzgerald. 2007. *Postindustrial Peasants: The Illusion of Middle-Class Prosperity*. New York: Worth Publishers.

———. 2014. *Middle Class Meltdown in America: Causes, Consequences and Remedies*. London: Routledge.

Lin, Ken-Hou, and Megan Tobias Neely. 2020. *Divested: Inequality in the Age of Finance*. New York: Oxford University Press.

Ma, Jennifer. 2005. "College Savings Options and the Impact of Savings on Financial Aid." *TIAA-CREF Institute Research Dialogue* 83. Accessed December 16, 2020. https://www.tiaainstitute.org/sites/default/files/presentations/2017-02/83.pdf.

Manning, Robert D. 2000. *Credit Card Nation: The Consequences of America's Addiction to Credit.* New York: Perseus Books.

Maroto, Michelle. 2016. "Growing Farther Apart: Racial and Ethnic Inequality in Household Wealth Across the Distribution." *Sociological Science* 3:801–24.

Martin, Randy. 2002. *Financialization of Daily Life*. Philadelphia, Pa.: Temple University Press.

McKernan, Signe-Mary, Caroline Ratcliffe, Eugene Steuerle, and Sisi Zhang. 2014. "Disparities in Wealth Accumulation and Loss from the Great Recession and Beyond." *American Economic Review* 104(5): 240–44.

Montgomerie, Johnna. 2006. "Giving Credit Where It's Due: Public Policy and Household Debt in the United States, the United Kingdom and Canada." *Policy and Society* 25(3): 109–41.

———. 2009. "The Pursuit of (Past) Happiness? Middle-Class Indebtedness and American Financialisation." *New Political Economy* 14(1): 1–24.

Moore, Mignon. 2011. *Invisible Families: Gay Identities, Relationships, and Motherhood among Black Women*. Berkeley: University of California Press.

National Center for Education Statistics (NCES). 2016. "Digest of Education Statistics." Table 331.95. Washington, D.C: National Center for Education Statistics. Accessed December 16, 2020. http://nces.ed.gov/programs/digest/d13/tables/dt13_331.95.asp.

Nelson, Margaret. 2010. *Parenting Out of Control: Anxious Parents in Uncertain Times*. New York: New York University Press.

Owens, Ann. 2016. "Inequality in Children's Contexts: Income Segregation of Households with and without Children." *American Sociological Review* 81(3): 549–74.

Pager, Devah, and Hana Shepherd. 2008. "The Sociology of Discrimination: Racial Discrimination in Employment, Housing, Credit, and Consumer Markets." *Annual Review of Sociology* 34(1): 181–209.

Pellandini-Simányi, Léna, Ferenc Hammer, and Zsuzsanna Vargha. 2015. "The Financialization of Everyday Life or the Domestication of Finance?" *Cultural Studies* 29(5–6): 733–59.

Percheski, Christine, and Christina Gibson-Davis. 2020. "A Penny on the Dollar: Racial Inequalities in Wealth Among Households with Children." *Socius* 6 (June): 1–17.

Pfeffer, Fabian T., and Robert F. Schoeni. 2016. "How Wealth Inequality Shapes Our Future." *RSF: The*

Russell Sage Foundation Journal of the Social Sciences 2(6): 2–22. DOI: 10.7758/RSF.2016 .2.6.01.

Porter, Katherine. 2012. "Driven by Debt: Bankruptcy and Financial Failure in American Families." In *Broke: How Debt Bankrupt the Middle Class*, edited by Katherine Porter. Stanford, Calif.: Stanford University Press.

Prasad, Monica. 2012. *The Land of Too Much: American Abundance and the Paradox of Poverty.* Cambridge, Mass.: Harvard University Press.

Pressman, Steven, and Robert Scott. 2009. "Consumer Debt and the Measurement of Poverty and Inequality in the US." *Review of Social Economy* 67(2): 122–54.

Rajan, Raghuram G. 2010. *Fault Lines: How Hidden Fractures Still Threaten the World Economy.* Princeton, N.J.: Princeton University Press.

Ramey, Garey, and Valerie A. Ramey. 2010. "The Rug Rat Race." *Brookings Papers on Economic Activity* (Spring): 129–76.

Ritzer, George. 1995. *Expressing America: A Critique of the Global Credit Card Society*. Newbury Park, Calif.: Pine Forge Press.

———. 2001. *Explorations in the Sociology of Consumption: Fast Food, Credit Cards and Casinos*. London: Sage.

Rona-Tas, Akos, and Alya Guseva. 2018. "Consumer Credit in Comparative Perspective." *Annual Review of Sociology* 44(1): 55–75.

Sayer, Liana C., Suzanne M. Bianchi, and John P. Robinson. 2004. "Are Parents Investing Less in Children? Trends in Mothers' and Fathers' Time with Children." *American Journal of Sociology* 110(1): 1–43.

Schneider, Daniel, Orestes P. Hastings, and Joe LaBriola. 2018. "Income Inequality and Class Divides in Parental Investments." *American Sociological Review* 83(3): 475–507.

Schor, Juliet B. 1999. *The Overspent American: Upscaling, Downshifting and the New Consumer*. New York: Harper Books.

———. 2007. "In Defense of Consumer Critique: Revisiting the Consumption Debates of the Twentieth Century." *Annals of the American Academy of Political and Social Science* 61(1): 16–30.

Seamster, Louise, and Raphael Charron-Chenier. 2017. "Predatory Inclusion and Education Debt: Rethinking the Racial Wealth Gap." *Social Currents* 4(3): 199–207.

Shapiro, Thomas M. 2004. *The Hidden Cost of Being African American: How Wealth Perpetuates Inequality*. New York: Oxford University Press.

———. 2017. *Toxic Inequality: How America's Wealth Gap Destroys Mobility, Deepens the Racial Divide, and Threatens Our Future*. New York: Basic Books.

Sullivan, Teresa, and George Kaufman. 2012. "Debt and the Simulation of Social Class." In *A Debtor World: Interdisciplinary Perspectives on Debt*, edited by Ralph Brubaker, Robert M. Lawless, and Charles J. Tabb. Oxford: Oxford University Press.

Trigg, Andrew B. 2001. "Veblen, Bourdieu, and Conspicuous Consumption." *Journal of Economic Issues* 35(1): 99–115.

Turetsky, Vicki, and Maureen R. Waller. 2020. "Piling on Debt: The Intersections Between Child Support Arrears and Legal Financial Obligations." *UCLA Criminal Justice Law Review* 4(1): 117–41. Accessed December 16, 2020. https:// escholarship.org/uc/item/7vd043jw.

Turner, Jennifer. 2020. "Black Mothering in Action: The Racial-Class Socialization Practices of Low-Income Black Single Mothers." *Sociology of Race and Ethnicity* 6(2): 242–53.

Urban Institute. 2017. "Nine Charts About Wealth Inequality in America (Updated)." Washington, D.C.: Urban Institute. Accessed November 10, 2020. https://apps.urban.org/features/wealth -inequality-charts.

Veblen, Thorstein. 1994. *Theory of the Leisure Class*. First published 1899. New York: Penguin Books.

Waller, Maureen R. 2010. "Viewing Low-Income Fathers' Ties to Families through a Cultural Lens: Insights for Research and Policy." *Annals of the American Academy of Political and Social Science* 629(1): 102–24.

Warren, Elizabeth, and Deborah Thorne. 2012. "A Vulnerable Middle Class: Bankruptcy and Class Status." In *Broke: How Debt Bankrupt the Middle Class*, edited by Katherine Porter. Stanford, Calif.: Stanford University Press.

Warren, Elizabeth, and Amelia Tyagi. 2016. *The Two Income Trap: Why Middle-Class Parents Are Going Broke*, 2nd ed. New York: Basic Books.

Weber, Max. 1946. *From Max Weber: Essays in Sociology*. New York: Oxford University Press.

Weininger, Elliot B., Annette Lareau, and Dalton Conley. 2015. "What Money Doesn't Buy: Class Resources and Children's Participation in Organized Extracurricular Activities." *Social Forces* 94(2): 479–503.

Western, Bruce, Deirdre Bloome, and Christine Percheski. 2008. "Inequality among American Families with Children, 1975 to 2005." *American Sociological Review* 73(6): 903–20.

Wightman, Patrick, Robert F. Schoeni, and Keith Robinson. 2012. "Familial Financial Assistance to Young Adults." *National Poverty Center* working paper no. 12–10. Ann Arbor: University of Michigan. Accessed December 16, 2020. http://www.npc.umich.edu/publications/working_papers/?publication_id=239&.

Wisman, Jon D. 2013. "Wage Stagnation, Rising Inequality and the Financial Crisis of 2008." *Cambridge Journal of Economics* 37(4): 921–45.

Wolff, Edward N. 2010. "Recent Trends in Household Wealth in the United States: Rising Debt and the Middle Class Squeeze, An Update to 2007." *Levy Economics Institute* working paper no. 589. New York: Levy Economics Institute of Bard College.

——. 2012. "The Asset Price Meltdown and the Wealth of the Middle Class." *NBER* working paper no.18559. Cambridge, Mass.: National Bureau of Economic Research.

——. 2018. "The Decline of African-American and Hispanic Wealth Since the Great Recession." *NBER* working paper no. 25198. Cambridge, Mass.: National Bureau of Economic Research.

Zaloom, Caitlin. 2019. *Indebted: How Middle Class Families Make College Work at Any Cost*. Princeton, N.J.: Princeton University Press.

Zelizer, Viviana. 1989. "The Social Meaning of Money: 'Special Monies'." *American Journal of Sociology* 95(2): 342–77.

——. 1994. *The Social Meaning of Money*. Princeton, N.J.: Princeton University Press.

PART II

Consequences of Wealth Inequality for Children

Household Wealth and Child Body Mass Index: Patterns and Mechanisms

COURTNEY BOEN, LISA A. KEISTER, AND NICK GRAETZ

Wealth plays a unique role in shaping later-life health risk, but the relationship between wealth and child health remains largely unexplored. Using longitudinal data from the Panel Study of Income Dynamics (PSID) (1994–2013), this study uses multilevel mixed-effects models and the parametric g-formula approach to both assess the relationship between household wealth and child body mass index (BMI) and identify the mechanisms linking wealth to child BMI. We find that household wealth is negatively associated with childhood BMI. In addition to finding a strong, direct association, we also find that household wealth indirectly patterns child BMI and obesity risk through household spending and family stress processes. These findings provide new insights into the links between wealth, child health, and early-life population health disparities.

Keywords: wealth, child health, health disparities

Decades of research from across disciplines provides clear and convincing evidence of a socioeconomic gradient in health (Marmot 2004). Beginning at birth, the association between socioeconomic status (SES) and health is strong and positive, with babies born into socioeconomically disadvantaged households being at higher risk of preterm birth and low birthweight than babies born into higher-SES house- holds (Martinson and Reichman 2016). Physical limitations and developmental delays and disabilities are more likely for children in low-SES households and families than for children from more socioeconomically advantaged households. For example, evidence indicates that children in low-SES households are at much greater risk of being overweight or obese or experiencing hearing and vision problems,

Courtney Boen is assistant professor of sociology, research associate in the Population Studies Center and Population Aging Research Center, and senior fellow at the Leonard Davis Institute at the University of Pennsylvania, United States. **Lisa A. Keister** is professor in the Department of Sociology and Sanford School of Public Policy and faculty research scholar of the Duke University Population Research Institute at Duke University, United States. **Nick Graetz** is a PhD candidate in demography and sociology in the Population Studies Center at the University of Pennsylvania, United States.

asthma, and ear infections than children in higher-SES households (Larson and Halfon 2010). Importantly, studies drawing from the life course perspective demonstrate that child socioeconomic exposures not only affect health during childhood, but also shape patterns of health and disease risk across the life span (Kuh et al. 2003), well into old age (Yang et al. 2017), suggesting that the drivers of adult socioeconomic disparities in health and mortality emerge early in the life course.

Scholars increasingly point to the important role of wealth in shaping individual health and contributing to population health inequality (Boen, Keister, and Aronson 2020; Boen and Yang 2016; Pollack et al. 2007). Most research on the socioeconomic gradient in health relies on indicators of income or education as markers of SES, but evidence shows that wealth plays a unique and important role in shaping life course patterns of individual and population health, net of other indicators of SES (Boen 2016; Boen and Yang 2016; Erixson 2017). Studies typically operationalize wealth as total net worth, or the sum of household assets minus debts. Much of what is known about the wealth-health connection comes from studies with older adult samples, but recent quasi-experimental evidence suggests that wealth may also be causally related to child health outcomes (Cesarini et al. 2016). Given increasing levels of wealth inequality in the United States in recent decades (Keister 2014)—including particularly stark racial wealth gaps (Killewald, Pfeffer, and Schachner 2017), low levels of wealth accumulation among households with children (Gibson-Davis and Percheski 2018), and high net worth poverty among households with children (Gibson-Davis, Genettian, and Keister 2020)—understanding the role of wealth in shaping patterns of child health inequality is of critical scientific and policy importance.

Still, the relationship between wealth and child health remains largely unexplored. Household wealth levels have been linked to adult health outcomes, but little is known about how wealth is associated with the health of children. This gap is particularly notable given that wealth inequality is especially high among child households (Boshara, Emmons,

and Noeth 2015) and that families with children in the United States have comparatively weak social safety net protections (Gibson-Davis and Percheski 2018). The mechanisms linking household wealth to health are also unclear. Research on adults suggests that stress, health behaviors, and consumption may link wealth to health indirectly (Berger and Houle 2019; Boen and Yang 2016), but few studies formally test these mechanisms or consider how the pathways relating wealth to child health may differ from the mechanisms linking wealth to adult health outcomes. Finally, concerns about causal inference—including issues related to reverse causality and time-varying confounding—continue to plague the literature in this area, which further limits understanding of the linkages between wealth and well-being. Together, these gaps suggest that more research on the links between wealth and child health is needed.

Using nationally representative, longitudinal data from the Panel Study of Income Dynamics (PSID), this study is among the first to assess the prospective links between household wealth and child body mass index (BMI), a critical marker of child well-being. Our analyses also included other markers of child health, but we focus on BMI for substantive and empirical reasons. Substantively, childhood obesity is an early-life risk factor for a number of later-life health outcomes. The early onset of obesity threatens cardiovascular health, risk for diabetes, life expectancy, and other outcomes across the entire life course (Park et al. 2012). Obesity risks emerge early in a child's life and continue to be consequential through the developmental years and into adulthood. Obesity is thus a particularly important indicator of child health and development that has important consequences for life course health and well-being. Empirically, unlike markers of childhood disease, which are somewhat rare among children and take time to emerge, BMI is a continuous marker of health risk. BMI trajectories can be observed across the early life span, from birth though childhood, adolescence, and young adulthood. Because we use data that includes longitudinal markers of both wealth and health, we are able to observe how changes in wealth

relate to changes in BMI across the early life course.

Using a variety of analytic techniques—including descriptive analyses, longitudinal mixed-effects models, and the parametric g-formula mediation approach—this study is among the first to assess the links between household wealth and child health, paying particular attention to how household wealth shapes BMI and obesity risk in childhood. This article makes three specific contributions. First, we establish the link between total household net worth and BMI. Second, we assess how different components of net worth relate to child BMI, following recent research suggesting that wealth components and health may be associated in different ways (Boen, Keister, and Aronson 2020). Finally, we examine some of the mechanisms that potentially underlie the wealth-health connection in childhood, including a variety of stress-related, behavioral, and spending pathways. Together, these three aims provide a comprehensive assessment of the wealth-health relationship focused on a critical measure of child health. Contextualized in a historical period marked by growing wealth inequality, this study provides new knowledge of the socioeconomic determinants of child health and sheds new light on the potential leverage points for closing socioeconomic inequities in child well-being.

BACKGROUND

Wealth inequality in the United States is extreme and growing. Indeed, the share of wealth held by the top 1 percent of households grew from 30 percent in 1989 to 37 percent in 2019. During the same period, the share of wealth owned by the bottom 80 percent of households declined from 20 to 13 percent (author's estimates from the Survey of Consumer Finances). The growth in wealth inequality reflects several interdependent processes, including the types of assets households own. The median U.S. household depends heavily on home equity as a source of wealth, and the dramatic decline in home values during the 2007–2009 recession reduced their net worth considerably. Many of these families have still not recovered their net worth (Pfeffer, Danziger, and Schoeni 2013). By contrast, upper-wealth families are more highly invested in the stock market, and rising stock values have meant that their total wealth has tended to rise (Piketty 2013). In the years following the recession, upper-wealth households benefited from a quick stock market recovery. Incomes have also risen for top households as the median income has stagnated; this difference has added to wealth inequality by allowing top households additional resources to save and creating resource constraints for those at the median that make saving more difficult.

Even in the context of high levels of wealth inequality, racial differences in wealth ownership are extreme. Black Americans hold roughly 5 cents for every dollar of white wealth, and more than one-third of all black households have zero or negative net worth—meaning their debts exceed the total worth of their assets—relative to 15 percent of white households (Kochnar and Cilluffo 2017). Scholars trace the historical origins of the racial wealth gap in the United States to chattel slavery and the failure of the Freedmen's Bureau and the Homestead Act to provide land to formerly enslaved people during the Reconstruction era (Darity and Mullen 2020). The forced seizure of black assets through racial violence and terrorism, the exclusion of black Americans from receiving benefits offered through the New Deal, the unequal distribution of G.I. Bill benefits in the years following World War II, and the proliferation of Jim Crow policies all contributed to the racial patterning of wealth in the United States throughout the nineteenth and twentieth centuries (Oliver and Shapiro 2013). Contemporary discrimination in the housing, lending, and labor markets further exacerbates racial wealth inequality by restricting black families' access to the same instruments of wealth accumulation as whites (Hamilton and Darity 2010).

Evidence of widening wealth inequality among households with children is growing (Gibson-Davis and Hill 2021, this issue; Gibson-Davis and Percheski 2018). Prior to the Great Recession, the median net worth for child households was roughly half that among households without children (Pfeffer, Danziger, and Schoeni 2013). The tremendous wealth losses associated with the Great Recession disproportionately affected households with children (Pfeffer, Danziger, and Schoeni

2013), with evidence showing that nonwhite, younger, and lower-SES child households experienced particularly large relative wealth losses (Boshara, Emmons, and Noeth 2015; Pfeffer, Danziger, and Schoeni 2013), which further exacerbated wealth inequality among America's children.

Although most research on the socioeconomic gradient in health comes from data on adult samples, evidence also shows that children from low-SES households experience greater risk of physical, psychological, and physiological health problems (Chen, Martin, and Matthews 2006; Larson and Halfon 2010) and more negative health shocks and events (Currie and Stabile 2003) than more socioeconomically advantaged children. Importantly, the racial stratification of socioeconomic resources in the United States shapes the racial patterning of child health and is a key mechanism linking racism to population health disparities. Relative to white children, African American children are more likely to experience socioeconomic hardship and disadvantage, which contributes to the emergence of racial health disparities in early life.

Income and education are the most widely used indicators of SES in health research on both adults and children, but it is increasingly clear that wealth plays a unique and critical role in shaping individual and population health, net of other SES indicators (Boen and Yang 2016; Pollack et al. 2007). Wealth can be a financial safety net for households during periods of economic hardship brought on by unemployment or illness; households can draw on their wealth to continue paying rents or mortgages, car payments, and other bills even when wages are temporarily suspended (Spilerman 2000). Wealth accumulation is also a status attainment process. Families accumulate wealth to make human capital investments, establish a desired standard of living, and pass along class status to descendants (Oliver and Shapiro 2013). Because of the racial patterning of wealth in the United States, evidence shows that racial wealth inequality contributes to population-patterns of black-white health disparities (Boen 2016; Boen, Keister, and Aronson 2020; Bond Huie et al. 2003).

Research on the relationship between wealth and health has generally focused on the links between total wealth—typically operationalized as net worth, or the sum of assets minus debts—and health, but recent evidence suggests that the components of wealth relate to health in different ways (Boen, Keister, and Aronson 2020). Although the mechanisms linking various wealth components to health are largely untested, it is likely that liquid assets with more immediate cash values, such as savings and stocks, may help families pay for basic health needs such as food, housing, and transportation and afford preventative, routine, and emergency medical care. By contrast, more illiquid assets, such as homes and equity, may promote health by conferring psychosocial benefits to owners, including high levels of control and stability (Boen, Keister, and Aronson 2020). Home equity and value may also be proxies for other unobserved factors that shape child health, such as school and neighborhood quality. Additionally, whereas assets protect health, high levels of debt—particularly unsecured debt—increase feelings of hopelessness and frustration and overall stress burden in ways that negatively affect health (Berger and Houle 2019). For these reasons, research should not only consider the associations between total wealth and health, but also assess how the associations between wealth components and health vary.

Research on the wealth-health connection largely relies on older adult samples, but a recent study from Sweden provides evidence of a potential causal link between wealth and child health. Using administrative data on Swedish lottery players, David Cesarini and colleagues (2016) find that increases in household wealth reduce childhood obesity risk and increase child health utilization in ways that may be protective of health. The effect sizes in the study were modest, but the authors note that the impacts of wealth on child health may be greater in other national contexts where social safety net protections for families are weaker than Sweden, such as in the United States.

Mechanisms Linking Wealth and Child Health

Because the factors patterning household wealth are structural—located in historical and present day policies and practices that un-

equally distribute wealth-building opportunities and financial risks in the population—examining how wealth shapes child health through household- and family-level mechanisms can provide new insights into the links between macro-level structural economic forces, meso-level household and family environments, and micro-level individual health-related processes. To examine the connections between wealth and child health, this study draws on the bioecological model of child development, which highlights the essential role of social contexts in shaping child health and development and suggests that more proximate contexts have the greatest impacts on child well-being (Bronfenbrenner and Ceci 1994). For children, the family context—including the family's socioeconomic resources, risk, and opportunities—is a critical meso-level environment that greatly shapes daily life in ways that affect their health. The socioeconomic resources available to families and households influence child well-being by affecting many of the more proximate determinants of child health and obesity risk, including household stress levels, household food budgets and spending, the availability and accessibility of opportunities and spaces for physical activity, and sleep quantity and quality (McCurdy, Gorman, and Metallinos-Katsaras 2010; Schmeer 2012). Still, given that wealth inequality in child households is so high (Gibson-Davis and Hill 2021, this issue; Gibson-Davis and Percheski 2018), it follows that children living in low- and high-wealth environments may face strikingly different household contexts that shape their health risk.

Merging insights from the bioecological models of child development, the conceptual model linking wealth to child outcomes laid out by Christina Gibson-Davis and Heather Hill in the introduction to this issue (2021), and recent work on the links between debt and child well-being by Lawrence Berger and Jason Houle (2019), we hypothesize that two primary mechanisms link household wealth and child health. First, guided by the stress process (Pearlin 1989), household wealth may affect child health through stress-related processes. In particular, we expect that low levels of household wealth produce economic pressures, anxieties, and conflict among parents; these stresses, in turn, affect child health outcomes both directly through physiological processes and indirectly through behavioral mechanisms. We hypothesize that parental and household stress can affect child health risk directly through a variety of biophysiological processes. In response to stress, the body upregulates activity in the sympathetic nervous system and hypothalamic-pituitary-adrenal axis, which together govern a host of physiological processes. This upregulation of bodily stress response in response to acute stressors is sometimes referred to as "fight or flight" and serves an important role in protecting individuals from immediate threats or infections. However, chronic activation of these systems in response to repeated social stress exposure gives rise to a host of physiological pathologies, including the promotion and redistribution of bodily fat stores. Together, these physiological changes result in increased weight gain and visceral adiposity (Scott, Melhorn, and Sakai 2012). A number of studies link chronic stress exposure—including the stress associated with material deprivation and hardship—to increased risk of obesity and metabolic risk in both children and adults (Boen 2020; Garasky et al. 2009; Tate et al. 2015). In fact, chronic stress exposure in childhood may affect more than obesity risk in childhood: the damaging effects of stress on health during this critical stage of brain and physiological development may also affect long-term health (Yang et al. 2017). Indeed, exposure to chronic stress in childhood—including exposure to the many stressors or strains associated with low SES—can result in permanent or lasting changes to neurobiology and physiology that result in metabolic abnormalities across the life span and through late life (Tamayo, Herder, and Rathmann 2010).

Levels of household stress, which are shaped by household socioeconomic conditions, can also affect child obesity risk indirectly through behavioral mechanisms. Because of structural constraints, parents and caregivers in low-wealth households need to devote significant time, energy, and resources to managing the many strains, conflicts, and stressors associated with having low or inadequate financial resources. As a result, they

may have fewer resources to invest in establishing health-promoting environments and behaviors in children (McCurdy, Gorman, and Metallinos-Katsaras 2010; Schmeer 2012). For these reasons, we expect that children in low-wealth households, which are characterized by greater financial strain and higher levels of familial and caregiver stress, will exhibit worse health behaviors than children in high-wealth families. Together, these direct biophysiological and indirect behavioral pathways may link the stress of low levels of wealth accumulation or high debt to child health in the short-term and increased health risk across the adult life course.

Second, household wealth may affect child health through consumption by shaping the quantity and quality of goods available to children (Berger and Houle 2019). Households with less wealth have less capital than higher-wealth families to invest in education, childcare and afterschool programs, housing, and other expenditures that affect child health and well-being. Because they lack the financial security and material resources afforded by wealth, lower wealth families may struggle to meet basic health needs of children; they may face difficulties securing housing, purchasing food, and paying for adequate levels of childcare. By contrast, households with more wealth may be able to spend more on household and child-related costs in ways that promote child health and well-being. These linkages may be particularly relevant to the wealth-BMI connection because of the high cost of critical health resources needed to support healthy lifestyles and environments (Powell and Bao 2009). In these ways, the risks and constraints faced by low-wealth families—including high levels of stress and financial challenges—may undergird the links between household wealth and child BMI.

The Life Course Perspective

In addition to elucidating the drivers of child well-being, research on the links between wealth and child health expands knowledge about the early-life origins of adult health and social well-being. Evidence indicates that early-life socioeconomic exposures shape life course trajectories of health both directly and indi-

rectly through a variety of social and biological mechanisms (Kuh et al. 2003). Childhood is a sensitive period of development when social exposures—including socioeconomic exposures—can induce structural and functional biological and physiological changes that affect later-life health and disease risk (Kuh et al. 2003; Yang et al. 2017). This is particularly true in the case of childhood obesity. Childhood weight status reflects social exposures occurring in utero, during infancy, and throughout childhood (Isong et al. 2018), and childhood BMI is a widely documented risk factor for adult obesity (Ward et al. 2017). Childhood obesity has been positively associated with premature morbidity and mortality in adulthood, including increased risk of blood pressure, insulin resistance, low-density lipoprotein and total cholesterol, physiological inflammation, and coronary heart disease (Park et al. 2012; Reilly et al. 2003). In addition to their direct biophysiological impacts, childhood socioeconomic exposures can shape life course trajectories of health and well-being indirectly by affecting cognitive development, educational achievement and attainment, earnings, and other forms of human capital (Currie and Stabile 2003). Children in low-SES homes miss more days of school and experience more hospitalizations (Case, Lubotsky, and Paxson 2002) in ways that pattern their health and socioeconomic status across the life span. Evidence further suggests that upward social mobility in adulthood may not erase the health disadvantages associated with early-life socioeconomic hardship, particularly for individuals of color, who may experience especially challenging pathways toward mobility (Gaydosh et al. 2018) characterized by high levels of exposure to discrimination and stigmatization (Assari 2018). Assessing the links between household wealth and health during childhood can thus shed new light on the possible early-life social and biological mechanisms underlying adult patterns of health and well-being. Together, theory and research from the life course perspective reveal that consideration of the early-life origins of adult health risk is essential to preventing disease and population disparities before they emerge and, in many cases, diverge with age.

Research Questions

We use nationally representative, longitudinal household- and child-level data from the PSID to study the association between household wealth and child BMI. We use a combination of multilevel mixed-effects models and the parametric g-formula to assess the links between wealth and child health and to examine a host of stress- and consumption-related mechanisms underlying the relationship between wealth and child BMI and obesity risk. Together, these methods allow us to estimate the direct and indirect pathways linking wealth and child BMI and obesity risk in a longitudinal, counterfactual causal inference framework. We ask three questions:

Does household wealth relate to BMI and obesity risk during childhood?

Do various components of wealth—including savings, stocks, home equity, and debt—differentially relate to childhood BMI and obesity risk?

What are the mechanisms linking household wealth to childhood BMI?

DATA AND ANALYTIC METHODS

As noted, our data come from the Panel Study of Income Dynamics, the longest running nationally representative, longitudinal survey of individuals and families in the United States. The PSID has interviewed respondents and their family members continuously since 1968, including biennial interviews since 1997. We use the main PSID file, the Child Development Supplement (CDS), and the Transition to Adulthood Supplement (TAS). The CDS is a longitudinal study of children who were twelve years old or younger in 1997 and followed over three waves (CDS-1 in 1997, CDS-2 in 2002–2003, and CDS-3 in 2007–2008). The TAS began in 2005 and followed children from the original CDS cohort into young adulthood. Data on our outcomes come predominately from the CDS, and we use data from the TAS (2009, 2011, 2013) to follow the CDS respondents who entered the CDS as infants and young children and who were followed in the TAS until they are eighteen. We link data on the CDS and TAS children

to family and household characteristics available in the main file of the PSID, as well as household wealth data from the PSID wealth supplement. The data are from six survey waves (1994, 1999, 2005, 2007, 2009, and 2011) of the main PSID file that include information on family and household characteristics. These data predate the CDS data to enable lagged wealth measures.

The 2007–2009 recession, an exogenous shock to household wealth, improves our ability to make inferences about the relationship between wealth and health. Concerns about endogeneity are a major challenge to scholarship on the links between wealth and health. To improve our ability to make inferences about the relationship between wealth and health, we leverage the Great Recession's exogenous shock to household wealth. Our period of observation includes the years leading up to (1997–2005), during (2007–2009), and after (2011–2013) the recession. By CDS III (2007–2008), many households—particularly black and Hispanic households (Pfeffer, Danziger, and Schoeni 2013) and households headed by younger adults (Boshara, Emmons, and Noeth 2015)—experienced significant wealth losses as a result of the recession. During the Great Recession, households lost wealth through market mechanisms such as the "bursting" housing bubble—rather than as a consequence of changes to individual health. Documented links between wealth and health observed during this period are therefore less likely to be subject to concerns about reverse causality and endogeneity. We take empirical advantage of this shock to household wealth and the ensuing economic downturn to better isolate the relationship between wealth and child health.

Outcomes: Childhood BMI

Our outcome variable is body mass index (BMI). Research across disciplines links childhood BMI and health risk in both childhood and adulthood. Whereas measures of disability, disease, or mortality are widely used in studies of adults, BMI reflects continuous changes in well-being that can be measured in childhood and across the life span, making it particularly well suited for studying age trajectories of

health (Deaton and Paxson 1998; Shaw and Krause 2002). In preliminary analyses, we also studied several other child health outcomes, including a count index of chronic conditions, a continuous depressive symptoms score, and markers of child self-rated health and caregiver-rated health. However, few children had any chronic conditions, elevated depressive scores, or poor rated health. Without enough variation on the dependent variables, we could not assess whether or how wealth is associated with these outcomes. By contrast, BMI trajectories can be observed across childhood, and social gradients in BMI emerge early in the life span, serving an important role in shaping long-term health across a number of cardiometabolic outcomes. High BMI puts children at risk of future health problems. In this study, we operationalize childhood BMI two ways. First, we include a continuous measure of BMI (kg/m^2). Second, we include a measure of age-specific BMI z-score, which indicates where respondents fall on the BMI distribution at every age during childhood. The continuous measure allows us to assess how wealth shapes trajectories of BMI; age-specific z-scores allow us to better understand how wealth relates to childhood overweight and obesity risk. To measure BMI, PSID interviewers measured child height and weight during the CDS-TAS interviews. Both BMI measures are time-varying indicators calculated using the measured height and weight at each wave.

Key Exposures and Mechanisms

The key exposure of interest is total household wealth, a continuous measure that reflects household net worth (a sum of household assets minus debts). We adjust the wealth measure for inflation (measured in 2017 dollars) and household size. Household wealth is included as a time-varying, normalized, lagged measure so that child health at time t is modeled as a function of wealth at time t–1. In addition to assessing the links between total household wealth and child health, we also examine how various components of wealth relate to child BMI and obesity risk. To do so, we create measures of home equity, stocks and bonds, checking and savings, value of other as-

sets, and total debt, all included as continuous, inflation-adjusted, lagged measures. We also include a measure of home value, which we include as a percentile of the PSID sample distribution, given the extreme skew of home values in the sample. Finally, we include a dummy indicator for whether the family owns a home. Supplemental analyses with alternative operations of all of the wealth variables (inverse hyperbolic sine transformed, squared measures, spline regression with varying numbers of knots to test for nonlinearities, and so on) yielded substantively similar results to those reported here.

An alternative specification of these models might include separate indicators for liquid (for example, cash accounts such as checking accounts, other financial assets) and illiquid assets (the family home, business assets, other tangible assets). We explored breaking wealth into liquid and illiquid assets, but, consistent with previous work (Boen, Keister, and Aronson 2020) our analyses showed that using home equity, stock and bond value, the value of checking and savings accounts, the value of other assets, and total other debts is a better representation of the wealth ownership of the households we study. This is consistent with research showing that the primary residence (an illiquid asset) is the most significant asset a median household owns and that stocks (a liquid asset) are becoming more commonly held among median households, particularly in retirement accounts. Other illiquid assets (such as businesses) are not commonly held by the median household and make little difference in our models.

To model the direct stress-related mechanisms, we include two measures of familial stress. First, parenting strain is measured using the Aggravation in Parenting Scale of the CDS. The CDS asked parents or primary caregivers of CDS respondents nine questions about their level of parenting stress (for example, feeling trapped by responsibility, feeling tired from raising a family). The final scale is an average score of their responses to the nine items. Second is family economic strain. The CDS asked parents or primary caregivers fifteen yes or no questions reflecting different dimensions of

economic strain (for example, postponed major purchase because of economic problems, fallen behind in paying bills). Our final scale is the sum of binary responses to the questions. The inclusion of the economic strain measure allows us to examine how low wealth may create financial stress in parents in ways that shape child health. Further, inclusion of the parenting strain allows us to capture how the constraints and challenges of low wealth may have spillover consequences for other domains of family stress. As described, because of structural constraints, parents in low-wealth households may need to devote more time and energy to dealing with the challenges of financial insecurity—including securing housing and figuring out how to pay bills—in ways that restrict the time or resources they are able to devote to other domains. In this way, low wealth may be a primary stressor in the lives of low-wealth parents, but may also give to a host of secondary stressors, including parenting strain (Pearlin et al. 1990), in ways that pattern child health.

To assess whether wealth shapes child health through child behavioral mechanisms, we include indicators of child physical activity (total minutes of physical activity per week), fruit and vegetable consumption (sum of number of days in the last week respondent ate fruits and respondent ate vegetables), and sleep (average number of hours per night). All of these behaviors are highly associated with child BMI and obesity risk and thought to be key mechanisms linking familial financial stressors and constraints to child health.

Finally, we include four spending-related mechanisms, including indicators of educational spending, which measures all school-related educational expenditures; childcare spending; health spending, which includes expenditures for hospitals and nursing homes, doctors, prescription drugs, and insurance; and housing spending, which includes mortgage and loan payments, rent, property tax, insurance, utilities, cable television, telephone, internet charges, home repairs, and home furnishings. Families can use accumulated wealth to make human capital investments in children, establish a desired standard of living, and pass along class status to descendants (Oliver

and Shapiro 2013). Households with more wealth may be able to invest more in their children's education, their childcare, their health care, and their housing in ways that shape children's long-term trajectories of health. Each of these measures indicated annual household spending on the respective categories. Across a variety of model specifications, only education spending was significantly associated with child BMI and obesity risk. For this reason, in our final models, we include only education spending as a consumption-related mechanism. Supplementary analyses operationalizing the spending variables as proportions of total annual income or wealth produced substantively similar results.

Other Measures

To assess racial disparities in household wealth and child health, we include a measure of parent-primary caregiver race (1 = non-Hispanic white; 2 = non-Hispanic black; 3 = other). Among children in the CDS, levels of match between parent-caregiver and child race are high; fewer than 4 percent of cases were discordant. In the majority of discordant cases, parent-caregiver race was white or black, and child race was marked as other. Supplementary analyses using child race yielded substantively similar results. Because of tremendous racial disparities in household wealth—corresponding to parent-caregiver race, rather than child race—we use parent-caregiver race in our final analytic models. To test for differential associations between wealth and child BMI by race, we ran supplementary models that included an interaction for race*wealth, but the interaction term was not statistically significant and thus was excluded from final models. Our models include a number of other covariates reflecting child sociodemographic characteristics, including age (continuous), gender (1 = male), and birth order. We also include a number of household characteristics, including parental-caregiver marital status (1 = married), maternal education (1 = high school or less, 2 = some college, 3 = bachelor's degree or higher), annual household income, and child health insurance status (1 = insured). Supplementary analyses also adjusted for parental age, which was not associated with the

outcomes and excluded from final model estimates.

Analytic Sample

The analytic sample includes respondents from the original CDS-1 followed through age eighteen. We include respondents with at least one observation. The mixed-effects models assessing the associations between total wealth, the wealth components, and the outcomes use the full sample of CDS and TAS respondents (n = 2,271, 5,411 person-years). To handle missing data, we used multiple imputation by chained equations procedures with thirty imputations and thirty burn-in iterations (van Buuren and Groothuis-Oudshoorn 2011).

Analytic Strategy

We first present descriptive analyses for the full sample. Although we do not explicitly model racial disparities in BMI, we also show black-white differences in household wealth to highlight the particularly stark levels of black-white wealth inequality among child households in the PSID.

Next, we use longitudinal mixed-effects models to estimate the associations between total household wealth, the wealth components, and childhood BMI and obesity risk as children age. In these models, observations at level 1 are nested within individuals at level 2 (Raudenbush and Bryk 2002). The models include random intercepts and clustered standard errors at household level. We model BMI and BMI z-scores as linear outcomes. These models proceed in a stepwise fashion. Model 1 includes all child sociodemographic characteristics, family structure, and socioeconomic factors but does not include any of the wealth measures. Models 2 through 5 build on model 1 by including the wealth measures: model 2 includes total wealth; model 3 includes continuous measures of home equity, debt, stocks, checking and savings, and other assets; model 4 includes an indicator for homeownership; and model 5 includes home value. Together, results from these models show how the measures of household wealth relate to child health across childhood. Supplemental analyses including wealth*age interactions revealed that the associations between wealth and BMI were consistent with age, so the interactions were excluded from the final models.

Finally, we use the parametric g-formula (Keil et al. 2014; Naimi, Cole, and Kennedy 2017) to estimate how wealth relates to child health over time both directly and indirectly through our hypothesized mechanisms. This recently developed methodology in epidemiological causal inference allows us to parameterize the contributions of wealth and the stress, behavioral, and spending mechanisms to child BMI over time under a less restrictive set of confounding assumptions than conventional regression adjustment. In estimating the proportion of the total effect explained by a mediating variable, conventional regression conditions on measured confounders of the exposure-outcome relationship and assumes that no mediator-outcome confounders are affected by the exposure of interest (such as family wealth). However, if a variable both confounds the mediator-outcome relationship and acts as a mediator between the exposure and the outcome, it is not possible in a regression setting to control for the confounding pathways and not simultaneously overcontrol the mediating pathways. This issue can become compounded over repeated observations of the exposure and mediators, often leading to biased estimates of the mediating effect of a specific variable (Naimi, Cole, and Kennedy 2017). For example, in our study, parental strain may influence wealth, child BMI, and other mediators of wealth-health (for example, economic strain); at the same time, wealth may influence child BMI through patterning parental strain over time. In this study, we use the g-formula approach to estimate the pathways through which household wealth shapes child BMI directly as well as how its impacts might accumulate indirectly and manifest through other time-varying characteristics across early and middle childhood and adolescence. Figure 1 provides a generalized illustration of this approach. We estimate models at three developmental periods: early childhood (ages three through seven), middle childhood (ages eight through twelve), and adolescence (ages thirteen through seventeen). In each set of models, we include time-varying characteristics that serve as both confounders and mediators in the relationship

Figure 1. Parametric G-Formula Approach

Confounders (age, sex, maternal education)						
Wealth	Mediators (economic/parenting strain, exercise)	Wealth	Mediators (economic/parenting strain, exercise)	Wealth	BMI	BMI
	BMI		BMI			
PSID 1994	CDS 1997 Ages 3–7	PSID 1999	CDS 2002 Ages 8–12	PSID 2005	CDS 2007 Ages 13–77	
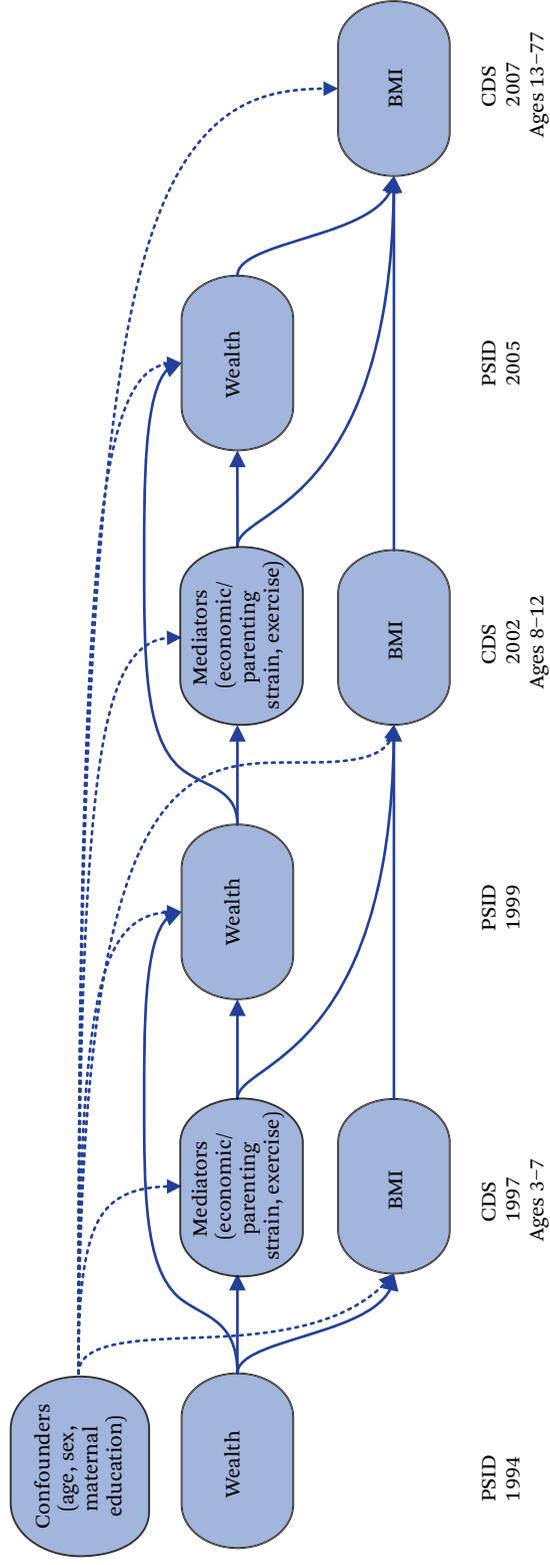
Table 1. Descriptive Statistics

	Mean/Proportion	Standard Deviation
Child body mass index (BMI) (kg/m^2)	20.85	(6.05)
Child BMI age-specific z-score	0.09	(0.93)
Household wealth (US$; median)	29,922.56	(138,057.51)
House value (US$; median)	102,932.4	(1,042,752.69)
Home equity (US$; median)	13,601.17	(116,149.21)
Total debt (US$; median)	680.06	(24,850.84)
Total stocks (among households who own stocks; US$; median)	16,378.95	(214,002.23)
Checking and savings value (US$; median)	13,146.43	(47,598.8)
Other assets (US$; median)	3,538.44	(214,668.29)
Owns home (1 = yes)	0.69	()
Owns any stocks (1 = yes)	0.28	()
Parenting strain (range: 17)	2.26	(0.77)
Economic strain (range: 115)	0.96	(1.66)
Education spending (dollars)	1,894.38	(5,376.24)
Physical activity (minutes per week)	138.68	(88.1)
Fruit and vegetable consumption (number of times ate fruit or vegetables in last week)	8.98	(3.46)
Sleep (hours per night)	8.52	(1.71)
Child age (years)	11.51	(4.13)
Child gender (1 = male)	0.52	()
Child birth order (mean)	1.58	(0.83)
Child race (1 = black)	0.18	()
Family structure (proportion married parents)	0.75	()
Maternal education (1 = BA+)	0.25	()
Child insured (1 = yes)	0.89	()
Family income (US$; median)	36,032.39	(41,946.75)
Person-years	5,411	
Unique children	2,271	

Source: Authors' tabulation.
Note: Household income and all wealth measures are inflation adjusted (2017 dollars); n = 2,271; 5,411 person-years.
*p < .05; **p < .01; ***p < .001

between wealth and child health. In early childhood, we model BMI and the proposed mechanisms as a function of lagged family characteristics, including wealth. In middle childhood, we model BMI and the mediating mechanisms as a function of lagged early-childhood characteristics and exposures (including lagged BMI, familial stressors, health behaviors, and household spending). In adolescence, we model the outcomes and mechanisms as a function of lagged childhood characteristics and exposures. In this way, we use the g-formula to parameterize the entire "cascade" of exposures across the child life span that link household wealth to adolescent BMI.

RESULTS

Table 1 presents descriptive statistics for the full sample. Among households with children, the median wealth is $29,923. Still, racial wealth inequality among child households is high. Figure 2 depicts racial differences in household wealth between black and white children by showing the striking overdispersion of black households with near-zero net worth relative to white households.

Figure 2. Black-White Disparities in Household Wealth Among Child Households (PSID, 1997–2013)
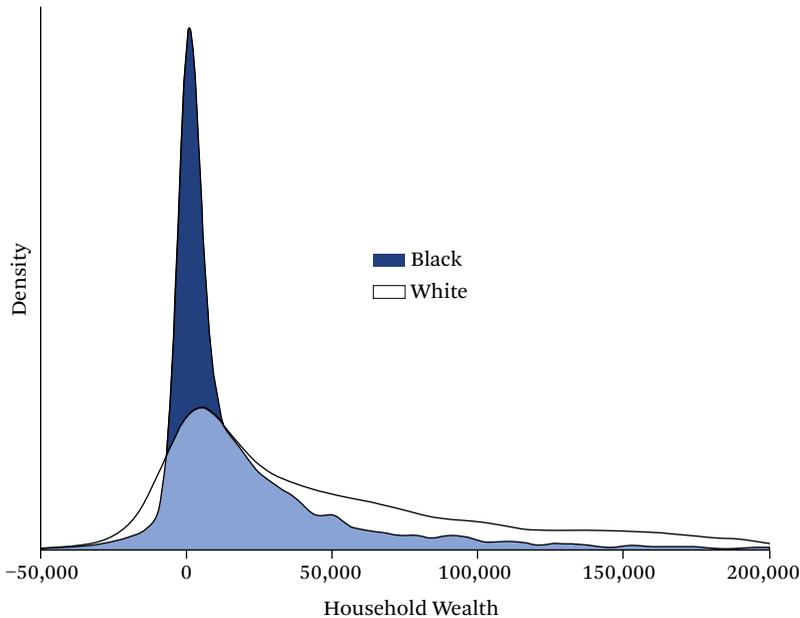
Source: Authors' tabulation based on the PSID.
Note: Household wealth is operationalized as total net worth (assets minus debts), inflation adjusted to 2017 dollars, adjusted for family size, and truncated between $150,000 and $500,000.

Results from longitudinal mixed-effects continuous BMI models are in table 2. Results from models using the age-specific BMI z-score outcome were substantively similar to those using the continuous BMI measure (see table A1). Model 1 is a basic model that includes all covariates except the wealth measures. Aside from child race and age, the other measures of household sociodemographic context included in model 1—including family structure, maternal education, household income, and insurance status—are not associated with child BMI. Model 2 builds on model 1 by including total household wealth and reveals that household wealth is negatively associated with child BMI ($-0.35, p < .05$), net of other indicators of household SES including household income and maternal education. We document a similar association in model 2 of table A1, where total wealth is negatively associated with age-specific BMI z-score ($-0.07, p < .01$). Together, results from model 2 show that household wealth is associated with child BMI and obesity risk, net of other important dimensions of household

socioeconomic status. In model 3, we disaggregate the total wealth measure into continuous measures of various wealth components, including home equity, stocks, checking and savings, other assets, and wealth. Results in table 2 and table A1 indicate that home equity is associated with child BMI ($-0.27, p < .05$) and age-specific BMI z-score ($-0.05, p < .01$). We find no significant associations between debt, stocks, checking and savings, or other assets and the outcomes. In model 4, we build on model 1 by adjusting for homeownership. We find no association between the dichotomous measure of homeownership and child BMI or obesity risk. Finally, in model 5, we build on model 1 by adjusting for home value and find no association between home value and child BMI or obesity risk.

Results of the parametric g-formula mediation analyses are presented in table 3. In these models, we decompose the disparity in average adolescent BMI between respondents at -1 standard deviation (SD) below mean household wealth and $+1$ SD above the mean. We estimate

Table 2. Household Wealth and Childhood BMI (PSID, 1997–2013)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	12.66	(0.81)***	12.25	(0.84)***	12.26	(0.83)***	12.70	(0.82)***	12.54	(0.82)***
Child gender (1 = male)	0.22	(0.25)	0.23	(0.25)	0.21	(0.24)	0.22	(0.25)	0.22	(0.25)
Child birth order	0.16	(0.13)	0.15	(0.13)	0.17	(0.13)	0.16	(0.13)	0.15	(0.13)
Black	1.20	(0.33)***	1.12	(0.33)***	1.17	(0.33)***	1.24	(0.32)***	1.09	(0.33)**
Other race	0.45	(0.63)	0.41	(0.64)	0.79	(0.65)	0.46	(0.63)	0.43	(0.62)
Child age	0.76	(0.04)***	0.76	(0.04)***	0.76	(0.04)***	0.76	(0.04)***	0.76	(0.04)***
Householder age	0.00	(0.02)	0.01	(0.02)	0.01	(0.02)	0.00	(0.02)	0.01	(0.02)
Family structure (1 = married)	0.07	(0.30)	0.00	(0.30)	0.02	(0.30)	0.14	(0.33)	0.06	(0.32)
Maternal education (1 = BA+)	0.68	(0.35)	0.58	(0.34)	0.63	(0.34)	0.69	(0.35)*	0.59	(0.35)
Child insured (1 = yes)	0.60	(0.37)	0.55	(0.37)	0.63	(0.38)	0.64	(0.37)	0.51	(0.38)
Household income	0.05	(0.21)	0.11	(0.23)	0.22	(0.23)	0.06	(0.21)	0.02	(0.22)
Household wealth			0.35	(0.14)*						
Home equity					0.27	(0.11)*				
Total debt					0.16	(0.11)				
Total stocks					0.32	(0.20)				
Total checking and savings					0.02	(0.11)				
Other assets					0.31	(0.20)				
Owns home (1 = yes)							0.21	(0.31)		
House value (percentile)									0.01	(0.01)
Person-years	5,411		5,411		5,411		5,411		5,411	
Individuals	2,271		2,271		2,271		2,271		2,271	

Source: Authors' tabulation based on the PSID.

Note: Results of longitudinal mixed effects models for childhood body mass index (kg/m2). Household income and all wealth measures are adjusted for inflation (2017 dollars) and household size. n=2,271; 5,411 person-years.

*p < .05; **p < .01; ***p < .001

Table 3. Mediation Results: Parametric G-Formula

	Model 1				Model 2			
	Coef.	SE		Explained	Coef.	SE		Explained
Total effect	1.39	(0.61)	**	100%	0.25	(0.09)	**	100%
Direct effect	1.08	(0.61)	*	77	0.20	(0.09)	**	79
Indirect, parenting strain	0.06	(0.09)		5	0.01	(0.02)		6
Indirect, economic strain	0.09	(0.06)	*	7	0.02	(0.01)	*	6
Indirect, education spending	0.13	(0.10)	+	9	0.02	(0.02)	+	7
Indirect, exercise minutes	0.05	(0.08)		4	0.01	(0.01)		3
Indirect, fruit or vegetable days	0.02	(0.08)		1	0.00	(0.02)		1
Indirect, sleep hours	0.01	(0.04)		0	0.00	(0.00)		0

Source: Authors' tabulation based on the PSID.

Note: Results of parametric g-formula decomposition showing average difference in BMI (model 1: continuous BMI; model 2: age standardized BMI z-score) for children ages thirteen through seventeen with family wealth at +1 SD versus 1 SD; n = 2,271; 5,411 person-years.

$^{+}p < .10$; $^{*}p < .05$; $^{**}p < .01$

the total direct contribution of household wealth to the adolescent BMI disparity as well as the contributions of our time-varying mechanisms (including the stress, behavioral, and spending measures) to the BMI disparity. Model 1 of table 3 shows results of the continuous BMI models, and model 2 shows results of the age-specific BMI z-score models.

Consistent with results from table 2 and table A1, results in models 1 and 2 of table 3 show that household wealth is strongly associated with adolescent BMI, as indicated by the parameter estimate of the total effect (model 1: −1.39, $p < .01$; model 2: −0.25, $p < .01$). For both outcomes, the majority of the estimated total effect of wealth on the adolescent BMI disparity operates directly (77 percent for continuous BMI in model 1 and 79 percent for BMI z-score in model 2). Together, these estimates indicate that most of the association of household wealth exposures across childhood and adolescence on adolescent BMI is not accounted for by our stress, spending, and behavioral mechanisms. Results from table 3 indicate that roughly 20 percent of the effect of household wealth operates indirectly through the hypothesized mechanisms. In particular, familial economic strain is a key indirect pathway linking household wealth to adolescent BMI (7 and 6 percent of the total wealth effect in models 1 and 2, respectively). Household wealth also operates indirectly through education spending,

with 9 and 7 percent of the total effect of wealth on the adolescent BMI and obesity risk explained by household spending on education-related expenses, respectively. Importantly, results from models 1 and 2 provide little evidence that child health behaviors (exercise, diet, or sleep) mediate the association between household wealth and child BMI.

DISCUSSION

A large and growing body of research links wealth and adult health (Boen, Keister, and Aronson 2020; Boen and Yang 2016). Still, despite slow rates of wealth accumulation and growing wealth inequality among households with children (Gibson-Davis and Percheski 2018), little is known about whether or how household wealth shapes child health. In particular, we know little from research about how household wealth and child BMI are related. Given that BMI is a critical indicator of child health and well-being that has implications for health and other outcomes across the life course, this gap is particularly salient. Merging rich, longitudinal data from the CDS, TAS, and the main file of the PSID, this study is among the first to examine the association between household wealth and childhood BMI and to assess the direct and indirect pathways linking wealth to child BMI and obesity risk.

This study makes three key contributions to the literatures on wealth and child BMI. First,

our study shows that household wealth is an important—yet largely understudied—correlate of child BMI, net of other indicators of family social and economic context, including maternal education, household income, child health insurance status, and parental marital status. Results shown in model 2 of table 2 and table A1 demonstrate that household wealth is negatively associated with child BMI and obesity risk, such that increases in household wealth are associated with lower childhood BMIs and BMI z-scores. In table 3, results similarly show a strong total cumulative effect of household wealth on BMI and obesity risk in adolescence. Studies across disciplines provide evidence of a socioeconomic gradient in child health (Larson and Halfon 2010; Martinson and Reichman 2016), but little research to date has assessed the role of wealth in child health inequality. Findings from this study suggest that, net of widely used indicators of household SES such as income and parental education, wealth provides health protections to children in ways that shape trajectories of health across childhood and adolescence. Given that childhood BMI has been positively associated with premature morbidity and mortality in adulthood (Park et al. 2012; Reilly et al. 2003), our findings on the robust links between wealth and child BMI indicate that childhood wealth exposures may play a critical role in shaping life course patterns of population health inequality.

Second, our results show that total household wealth is an essential correlate of child BMI that is largely consistent across the components of net worth. That is, the association between the various assets and debts that make up total net worth are generally associated with childhood BMI in consistent ways. One potential exception is that home equity is negatively associated with child BMI. Home equity may affect child health directly by shaping familial financial security, but it may also relate to health indirectly by serving as a proxy for unmeasured indicators of social status such as homeownership or school or neighborhood quality. Still, results from models 4 and 5 of table 2 and table A1 suggest that homeownership and home value—which are perhaps better proxies of neighborhood context than home equity—were not associated with child BMI. Still,

results also showed that none of the other wealth measures—including debt, stocks, checking and savings, and other assets—is associated with child BMI. Although research on adults shows that the components of wealth relate to health in different ways (Boen, Keister, and Aronson 2020), they do not for childhood BMI. It is possible that though children are largely unaware of any particular dimension of their household finances, the overall status of their family's financial stability and well-being—as captured by measures of total net worth—holds great bearing on their day-to-day lives in ways that matter for health. Altogether, findings from this study point to the important but largely understudied role of household wealth in shaping the emergence and divergence of child health disparities.

Third, findings from this study offer new evidence of the mechanisms linking household wealth to childhood BMI. Assessing and parameterizing the links between household wealth and child health presents tremendous empirical challenges in part because of the difficulties related to properly accounting for the complex interplay between time-varying confounding and mediation. As shown in figure 1, we use the recently developed g-formula simulation to model the pathways through which household wealth affects child BMI directly as well as how its impacts might accumulate and manifest vis-à-vis other time-varying characteristics across childhood. Results from table 3 show that household wealth contributes to child BMI and obesity risk both directly and indirectly in several ways. In particular, results from the parametric g-formula analyses show that household wealth relates to child BMI over time by shaping parental economic strain and patterning household spending on education. We hypothesized that family stress would be an important indirect mechanism linking household wealth to child health. Research indicates that parents and caregivers under high levels of economic stress need to expend tremendous time and energy to managing the many social, emotional, and financial challenges associated with having few financial resources. In addition to shaping parental behavior, high levels of familial economic strain may also affect child BMI directly by chronically up-regulating physiological

stress response systems in ways that promote weight gain and the redistribution of bodily fat stores (Scott, Melhorn, and Sakai 2012). Our results show that parental economic stress accounted for 7 percent and 6 percent of the association between household wealth and BMI and BMI z-score, respectively.

We also find that household wealth shaped BMI in childhood and adolescence by affecting household spending on education. Preliminary analyses also included other household consumption mechanisms, including spending on housing, childcare, and health spending, but none was significantly related to child BMI. Households with more wealth have more capital to invest in their children's education in ways that could shape child BMI through a variety of human capital (for example, increased knowledge, self-efficacy) and environmental exposure (healthier food options, opportunities for physical activity) pathways that we are unable to examine here but offer opportunities for future research.

Perhaps surprisingly, results in table 3 show that none of the hypothesized child behavioral mechanisms links household wealth to child health. Although health behaviors such as diet and physical activity garner much attention in policy and intervention discussions related to the childhood obesity epidemic, our results show that these behavioral factors do not help explain the wealth gradient in child BMI. Instead, results show that most of the association between household wealth and child BMI was unaccounted for by our mechanisms, including the indicators of stress, spending, and child health behaviors. These findings suggest that future research should continue to theorize and empirically test how household wealth shapes family life in ways that matter for child health and well-being, including how other meso-level environmental factors and indicators—such as school quality and neighborhood context—might undergird the links between wealth and child health. Future research should also consider the factors that can buffer against the health-harming effects of low wealth among children.

Taken together, this study provides new knowledge of the role of wealth inequality in producing population health disparities beginning early in the life course. Our findings add to the large and growing body of research showing strong, prospective associations between wealth and health that extend to the early life period. The results demonstrate that the wealth gradient in health emerges early in the life course, long before individuals begin to accumulate their own assets and debts. Levels of wealth inequality are particularly stark among child households in the United States (Gibson-Davis and Hill 2021, this issue; Gibson-Davis and Percheski 2018), and the findings presented here show that this inequality greatly affects the development and divergence of health disparities among America's children. Future research should build on the findings presented here to consider how long-term trajectories of household wealth shape child health. Given stark racial differences in household wealth, our findings also suggest that wealth inequality likely also plays an essential role in the early-life emergence and intergenerational and historical persistence of racial health inequities. Findings from this project support the call for policy and intervention efforts to focus on building wealth among households with children as a way to promote child health equity. Efforts aimed at building and redistributing wealth are not solely economic in nature; wealth policies are health policies with important consequences for the health and well-being of children.

Table A1. Household Wealth and Childhood BMI Z-Score (PSID, 1997–2013)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE	Coef.	SE
Intercept	0.02	(0.14)	0.09	(0.14)	0.07	(0.14)	0.01	(0.14)	0.04	(0.14)
Child gender (1 = male)	0.05	(0.04)	0.05	(0.04)	0.04	(0.04)	0.05	(0.04)	0.05	(0.04)
Child birth order	0.04	(0.02)	0.04	(0.02)	0.04	(0.02)	0.04	(0.02)	0.04	(0.02)
Black	0.20	(0.06)***	0.19	(0.06)**	0.20	(0.06)***	0.20	(0.06)***	0.18	(0.06)**
Other race	0.09	(0.11)	0.08	(0.11)	0.13	(0.12)	0.09	(0.11)	0.09	(0.11)
Child age	0.00	(0.01)	0.00	(0.01)	0.00	(0.01)	0.00	(0.01)	0.00	(0.01)
Householder age	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)	0.00	(0.00)
Family structure (1 = married)	0.03	(0.05)	0.01	(0.05)	0.02	(0.05)	0.03	(0.06)	0.00	(0.06)
Maternal education (1 = BA+)	0.11	(0.06)	0.09	(0.06)	0.10	(0.06)	0.11	(0.06)	0.09	(0.06)
Child insured (1 = yes)	0.11	(0.07)	0.11	(0.07)	0.12	(0.07)	0.12	(0.07)	0.10	(0.07)
Household income	0.01	(0.04)	0.02	(0.04)	0.04	(0.04)	0.01	(0.04)	0.01	(0.04)
Household wealth			0.07	(0.02)**						
Home equity					0.05	(0.02)**				
Total debt					0.02	(0.02)				
Total stocks					0.06	(0.03)				
Total checking and savings					0.01	(0.02)				
Other assets					0.06	(0.04)				
Owns home (1 = yes)							0.03	(0.06)		
House value (percentile)									0.00	(0.00)
Person-years	5,411		5,411		5,411		5,411		5,411	
Individuals	2,271		2,271		2,271		2,271		2,271	

Source: Authors' tabulation based on the PSID.

Note: Results of longitudinal mixed-effects models for childhood body mass index (z-score). Household income and all wealth measures are adjusted for inflation (2017 dollars) and household size. n=2,271; 5,411 person-years.

*p < .05; **p < .01; ***p < .001

REFERENCES

Assari, Shervin. 2018. "Health Disparities Due to Diminished Return Among Black Americans: Public Policy Solutions." *Social Issues and Policy Review* 12(1): 112–45.

Berger, Lawrence M., and Jason N. Houle. 2019. "Rising Household Debt and Children's Socioemotional Well-Being Trajectories." *Demography* 56(4): 1273–301.

Boen, Courtney. 2016. "The Role of Socioeconomic Factors in Black-White Health Inequities Across the Life Course: Point-in-Time Measures, Long-Term Exposures, and Differential Health Returns." *Social Science & Medicine* 170 (December): 63–76.

———. 2020. "Death by a Thousand Cuts: Stress Exposure and Black-White Disparities in Physiological Functioning in Late Life." *Journals of Gerontology: Series B* 75(9): 1937–950.

Boen, Courtney, Lisa A. Keister, and Brian Aronson. 2020. "Beyond Net Worth: Racial Differences in Wealth Portfolios and Black-White Health Inequality Across the Life Course." *Journal of Health and Social Behavior* 61(2): 153–69.

Boen, Courtney, and Y. Claire Yang. 2016. "The Physiological Impacts of Wealth Shocks in Late Life: Evidence from the Great Recession." *Social Science & Medicine* 150 (February): 221–30.

Bond Huie, Stephanie A., Patrick M. Krueger, Richard G. Rogers, and Robert A. Hummer. 2003. "Wealth, Race, and Mortality." *Social Science Quarterly* 84(3): 667–84.

Boshara, Ray, William R. Emmons, and Bryan J. Noeth. 2015. "The Demographics of Wealth—How Age, Education and Race Separate Thrivers from Strugglers in Today's Economy." In *Demographics of Wealth*. St. Louis, Mo.: Federal Reserve Bank of St. Louis.

Bronfenbrenner, Urie, and Stephen J. Ceci. 1994. "Nature-Nurture Reconceptualized in Developmental Perspective: A Bioecological Model." *Psychological Review* 101(4): 568–86.

Case, Anne, Darren Lubotsky, and Christina Paxson. 2002. "Economic Status and Health in Childhood: The Origins of the Gradient." *American Economic Review* 92(5): 1308–34.

Cesarini, David, Erik Lindqvist, Robert Östling, and Björn Wallace. 2016. "Wealth, Health, and Child Development: Evidence from Administrative Data on Swedish Lottery Players." *Quarterly Journal of Economics* 131(2): 687–738.

Chen, Edith, Andrew D. Martin, and Karen A. Matthews. 2006. "Socioeconomic Status and Health: Do Gradients Differ Within Childhood and Adolescence?" *Social Science & Medicine* 62(9): 2161–70.

Currie, Janet, and Mark Stabile. 2003. "Socioeconomic Status and Child Health: Why Is the Relationship Stronger for Older Children?" *American Economic Review* 93(5): 1813–23.

Darity, William A., Jr., and A. Kirsten Mullen. 2020. *From Here to Equality: Reparations for Black Americans in the Twenty-First Century*. Chapel Hill: University of North Carolina Press.

Deaton, Angus S., and Christina H. Paxson. 1998. "Aging and Inequality in Income and Health." *American Economic Review* 88(2): 248–53.

Erixson, Oscar. 2017. "Health Responses to a Wealth Shock: Evidence from a Swedish Tax Reform." *Journal of Population Economics* 30(4): 1281–336.

Garasky, Steven, Susan D. Stewart, Craig Gundersen, Brenda J. Lohman, and Joey C. Eisenmann. 2009. "Family Stressors and Child Obesity." *Social Science Research* 38(4): 755–66.

Gaydosh, Lauren, Kristen M. Schorpp, Edith Chen, Gregory E. Miller, and Kathleen Mullan Harris. 2018. "College Completion Predicts Lower Depression But Higher Metabolic Syndrome Among Disadvantaged Minorities in Young Adulthood." *Proceedings of the National Academy of Sciences* 115(1): 109–14.

Gibson-Davis, Christina, and Heather D. Hill. 2021. "Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 1–26. DOI: 10.7758/RSF.2021.7.3.01.

Gibson-Davis, Christina, Lisa A. Keister, and Lisa Genettian. 2020. "Net Worth Poverty in Child Households by Race and Ethnicity, 1989–2019." *Journal of Marriage and Family.* Published online November 26. DOI: 10.1111/jomf.12742.

Gibson-Davis, Christina M., and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55(3): 1009–32.

Hamilton, Darrick, and William Darity Jr. 2010. "Can 'Baby Bonds' Eliminate the Racial Wealth Gap in Putative Post-Racial America?" *Review of Black Political Economy* 37(3-4): 207–16.

Isong, Inyang A., Sowmya R. Rao, Marie-Abèle Bind,

Mauricio Avendaño, Ichiro Kawachi, and Tracy K. Richmond. 2018. "Racial and Ethnic Disparities in Early Childhood Obesity." *Pediatrics* 141(1): e20170865. DOI: 10.1542/peds.2017-0865.

Keil, Alexander P., Jessie K. Edwards, David R. Richardson, Ashley I. Naimi, and Stephen R. Cole. 2014. "The Parametric G-Formula for Time-to-Event Data: Towards Intuition with a Worked Example." *Epidemiology* 25(6): 889–97.

Keister, Lisa A. 2014. "The One Percent." *Annual Review of Sociology* 40(1): 347–67.

Killewald, Alexandra, Fabian T. Pfeffer, and Jared N. Schachner. 2017. "Wealth Inequality and Accumulation." *Annual Review of Sociology* 43(1): 379–404.

Kochnar, Rakesh, and Anthony Cilluffo. 2017. "How Wealth Inequality Has Changed in the U.S. Since the Great Recession, by Race, Ethnicity and Income." *Fact Tank* (Pew Research Center blog), November 1. Accessed December 16, 2020. http://www.pewresearch.org/fact-tank/2017/11 /01/how-wealth-inequality-has-changed-in-the -u-s-since-the-great-recession-by-race-ethnicity -and-income.

Kuh, Diana, Yoav Ben-Shlomo, John Lynch, Johan Hallqvist, and Chris Power. 2003. "Life Course Epidemiology." *Journal of Epidemiology and Community Health* 57(10): 778–83.

Larson, Kandyce, and Neal Halfon. 2010. "Family Income Gradients in the Health and Health Care Access of US Children." *Maternal and Child Health Journal* 14(3): 332–42.

Marmot, Michael. 2004. "Status Syndrome." *Significance* 1(4): 150–54.

Martinson, Melissa L., and Nancy E. Reichman. 2016. "Socioeconomic Inequalities in Low Birth Weight in the United States, the United Kingdom, Canada, and Australia." *American Journal of Public Health* 106(4): 748–54.

McCurdy, Karen, Kathleen S. Gorman, and Elizabeth Metallinos-Katsaras. 2010. "From Poverty to Food Insecurity and Child Overweight: A Family Stress Approach." *Child Development Perspectives* 4(2): 144–51.

Naimi, Ashley I., Stephen R. Cole, and Edward H. Kennedy. 2017. "An Introduction to G Methods." *International Journal of Epidemiology* 46(2): 756–62.

Oliver, Melvin, and Thomas Shapiro. 2013. *Black Wealth/White Wealth: A New Perspective on Racial Inequality*, 2nd ed. New York: Routledge.

Park, Min Hae, Catherine Falconer, Russell Viner, and Sanjay Kinra. 2012. "The Impact of Childhood Obesity on Morbidity and Mortality in Adulthood: A Systematic Review." *Obesity Reviews* 13(11): 985–1000.

Pearlin, Leonard I. 1989. "The Sociological Study of Stress." *Journal of Health and Social Behavior* 30(3): 241–56.

Pearlin, Leonard I., Joseph T. Mullan, Shirley J. Semple, and Marilyn M. Skaff. 1990. "Caregiving and the Stress Process: an Overview of Concepts and Their Measures." *The Gerontologist* 30(5): 583–94.

Pfeffer, Fabian T., Sheldon Danziger, and Robert F. Schoeni. 2013. "Wealth Disparities Before and After the Great Recession." *Annals of the American Academy of Political and Social Science* 650(1): 98–123.

Piketty, Thomas. 2013. *Capital in the Twenty-First Century*. Cambridge, Mass.: Harvard University Press.

Pollack, Craig E., Sekai Chideya, Catherine Cubbin, Brie Williams, Mercedes Dekker, and Paula Braveman. 2007. "Should Health Studies Measure Wealth?: A Systematic Review." *American Journal of Preventive Medicine* 33(3): 250–64.

Powell, Lisa M., and Yanjun Bao. 2009. "Food Prices, Access to Food Outlets and Child Weight." *Economics & Human Biology* 7(1): 64–72.

Raudenbush, Stephen W., and Anthony S. Bryk. 2002. *Hierarchical Linear Models: Applications and Data Analysis Methods*. Thousand Oaks, Calif.: Sage Publications.

Reilly, John J., E. Methven, Zoe C. McDowell, Belinda Hacking, D. Alexander, Laura Stewart, and Christopher J. H. Kelnar. 2003. "Health Consequences of Obesity." *Archives of Disease in Childhood* 88(9): 748–52.

Schmeer, Kammi K. 2012. "Family Structure and Obesity in Early Childhood." *Social Science Research* 41(4): 820–32.

Scott, Karen A., Susan J. Melhorn, and Randall R. Sakai. 2012. "Effects of Chronic Social Stress on Obesity." *Current Obesity Reports* 1(1): 16–25.

Shaw, Benjamin A., and Neal Krause. 2002. "The Impact of Salient Role Stress on Trajectories of Health in Late Life Among Survivors of a Seven-Year Panel Study: Analyses of Individual Growth Curves." *International Journal of Aging and Human Development* 55(2): 97–116.

Spilerman, Seymour. 2000. "Wealth and Stratifica-

tion Processes." *Annual Review of Sociology* 26(1): 497–524.

Tamayo, Teresa, Christian Herder, and Wolfgang Rathmann. 2010. "Impact of Early Psychosocial Factors (Childhood Socioeconomic Factors and Adversities) on Future Risk of Type 2 Diabetes, Metabolic Disturbances and Obesity: A Systematic Review." *BMC Public Health* 10(1): 525.

Tate, Eleanor B., Wendy Wood, Yue Liao, and Genevieve F. Dunton. 2015. "Do Stressed Mothers Have Heavier Children? A Meta-Analysis on the Relationship Between Maternal Stress and Child Body Mass Index." *Obesity Reviews* 16(5): 351–61.

van Buuren, Stef, and Karin Groothuis-Oudshoorn. 2011. "MICE: Multivariate Imputation by Chained Equations in R." *Journal of Statistical Software* 45(1): 1–67.

Ward, Zachary J., Michael W. Long, Stephen C. Resch, Catherine M. Giles, Angie L. Cradock, and Steven L. Gortmaker. 2017. "Simulation of Growth Trajectories of Childhood Obesity into Adulthood." *New England Journal of Medicine* 377(22): 2145–53.

Yang, Y. Claire, Karen Gerken, Kristen Schorpp, Courtney Boen, and Kathleen Mullan Harris. 2017. "Early-Life Socioeconomic Status and Adult Physiological Functioning: A Life Course Examination of Biosocial Mechanisms." *Biodemography and Social Biology* 63(2): 87–103.

All Wealth Is Not Created Equal: Race, Parental Net Worth, and Children's Achievement

JORDAN A. CONWELL● AND LEAFIA ZI YE●

Using data from the children of the National Longitudinal Survey of Youth 1979 cohort, spanning 1986 to 2014, we investigated whether White, Black, and Hispanic children whose parents had the same wealth, measured as net worth, have equal math and reading achievement trajectories from age five through fourteen. Black and Hispanic children often had significantly worse scores than same-wealth Whites. We also found racial variation, to the disadvantage of Blacks and Hispanics relative to same-wealth Whites, in measures of family demographic context and financial portfolio composition, both of which research has linked to children's achievement. Whereas previous research has found that structural racial inequality contributes to racial differences in wealth, we find evidence of similar processes in same-wealth comparisons that have potential implications for children's academic success.

One of the most consistent findings in the social science literature on wealth is that wealth is unequally distributed by race, to the disadvantage of Blacks and Hispanics relative to Whites (Conley 1999; Darity et al. 2018; Gittleman and Wolff 2004; Killewald and Bryan 2018; Killewald, Pfeffer, and Schachner 2017; Oliver and Shapiro 2006; Smith 1995; Taylor et al. 2011). Racial wealth gaps are vastly larger than racial income gaps, and racial wealth gaps have markedly increased over the same time period

that racial income gaps have remained relatively stable (Percheski and Gibson-Davis 2020; Wolff 2017). Moreover, racial inequalities in other aspects of socioeconomic status (SES), such as income and educational attainment, do not fully account for racial disparities in wealth. Wealth is one measure of the multigenerational and structural nature of racial inequality (Brown 2016; Conley 1999; Herring and Henderson 2016; Oliver and Shapiro 2006), which a single generation's socioeconomic at-

Jordan A. Conwell is assistant professor of sociology and educational policy studies at the University of Wisconsin-Madison, United States. **Leafia Zi Ye** is a PhD candidate in sociology and an affiliate of the Center for Demography and Ecology at the University of Wisconsin-Madison, United States.

tainments, regardless of how elite or hard-won, often cannot fully erase. Recent policy discussions have also called attention to racial wealth gaps. In 2019, multiple candidates for president offered plans to reduce them, including facilitating homeownership for families of color and "baby bonds" (Astor 2019). In the tumultuous year of 2020, renewed calls for racial justice in many domains of social, economic, political, and cultural life also highlighted the issue.

Household wealth is correlated with children's academic, behavioral, health, and other outcomes (Destin 2013; Hällsten and Pfeffer 2017; Shanks 2007; see also, from this issue, Boen, Keister, and Graetz 2021; Gibson-Davis and Hill 2021; Nepomnyaschy et al. 2021; Miller et al. 2021). As Christina Gibson-Davis and Heather Hill outline in the introduction to this issue, wealth provides child households with resources, security, and class status. Wealth facilitates parents' time and money investments in children, contributes to parents' sense of financial well-being, raises future expectations for children in areas such as schooling, and lowers parental stress. The ways that wealth allows parents to purchase school and neighborhood quality for children—which Gibson-Davis and Hill describe as a secondary mechanism of wealth effects on child development—are especially salient here, given our focus in this article on children's math and reading achievement. Racial disparities in wealth mean that, relative to White children, Black and Hispanic children are less likely to benefit from these processes. Further, because wealth is distinct from income—and unequally distributed by race, net of income—Black and Hispanic children remain less likely to fully benefit from these processes even if their parents have the same income as Whites.

An existing research stream has investigated relationships between race, wealth, and children's school achievement and related outcomes, such as grade retention. This work has often assessed the extent to which average racial disparities in wealth account for average racial gaps in these outcomes, with wealth entered into statistical models after a number of other explanatory factors (Easton-Brooks and Davis 2007; Kaushal and Nepomnyaschy 2009; Orr 2003; Yeung and Conley 2008). This research finds that racial wealth disparities may slightly mediate racial gaps in achievement, but wealth accounts for a small share of achievement gaps in these studies.

In this study, we contribute to the literature on race, wealth, and children's achievement by analyzing the math and reading achievement of White, Black, and Hispanic children whose parents have the same wealth (net worth). We make these comparisons at the 25th, 50th, and 75th percentiles of net worth to capture potential variation in patterns of interest across the wealth distribution. Analyses examine the extent to which White, Black, and Hispanic children whose parents have the same position in the wealth distribution have comparable achievement trajectories and comparable access to resources for their academic development. To our knowledge, ours is the first study in the literature on race, wealth, and children's achievement to leverage same-wealth comparisons in these ways.

If we do find such racial achievement gaps between same-wealth children, it would mean that wealth, at least when measured as parental net worth, still does not fully capture racial differences in children's developmental opportunities—indicating the need to search out racial differences between same-wealth families in other factors relevant to children's achievement. To this end, we assess potential racial differences between same-wealth White, Black, and Hispanic families in two areas: (1) family demographic and developmental context characteristics and (2) asset and debt composition of net worth portfolios. Both domains include characteristics of families and households that link parental wealth to children's development (see Gibson-Davis and Hill 2021, this issue). The latter analysis investigates the possibility that Black, Hispanic, and White households reach a given position in the wealth distribution by different pathways. We interpret such differences as due to racially unequal exposure to historical and contemporary structural constraints on certain types of wealth accumulation, such as persistent racial discrimination in the mortgage and housing market (see, for example, Quillian, Lee, and Honoré 2020). Research on race and wealth has leveraged structural perspectives to understand the factors that con-

tribute to racial differences in wealth, to the disadvantage of Blacks and Hispanics relative to Whites (Brown 2016; Herring and Henderson 2016; Keister 2000). Here, we extend this logic to understand potential racial variation in the pathways that households with children take to attain the same wealth levels and these routes' potential implications for children's developmental opportunities.

We investigate these possibilities using data from the children of the National Longitudinal Survey of Youth 1979 cohort (C-NLSY), spanning from 1986 through 2014. When merged with children's mothers' records from the original NLSY79, the data provide fine-grained, longitudinal information on family financial circumstances. This includes summary parental net worth measures and detailed measures of specific categories of assets and debts, many other measures of children's family demographic characteristics and developmental contexts, and children's math and reading achievement scores. The original NLSY79 sampling frame's racial diversity allows us to track potential differences between Whites, Blacks, and Hispanics. We arrange the data into a child-age panel and use multilevel growth curve modeling techniques to analyze trends of interest for children age five through fourteen.

BACKGROUND

Racial disparities in wealth are large and persistent (Conley 1999; Darity et al. 2018; Gittleman and Wolff 2004; Killewald and Bryan 2018; Killewald, Pfeffer, and Schachner 2017; Oliver and Shapiro 2006; Smith 1995; Taylor et al. 2011). They have also grown in recent years given the Great Recession's (2007–2009) racially unequal impact on wealth portfolios. Although Blacks, Whites, and Hispanics all lost wealth during this period, Blacks' and Hispanics' wealth declined disproportionately, and Whites and Hispanics (but not Blacks) have recovered much of their losses (Percheski and Gibson-Davis 2020; Taylor et al. 2011; Wolff 2017). In 2004, median Black net worth ($15,000) was less than 10 percent of median White net worth ($150,000). By 2016, median Black net worth ($3,400) was just over 2.4 percent of median White net worth ($140,500) (Wolff 2017). The Hispanic-White gap in me-

dian wealth has remained relatively flat over this period, due to both groups losing wealth around the Great Recession yet being able to recover. In both 2004 and 2016, Hispanic median wealth was approximately one-twentieth that of median White wealth. Wealth gaps between Whites, Blacks, and Hispanics also persist net of socioeconomic status (SES) characteristics such as income (Darity et al. 2018; Smith 1995) and educational attainment (Meschede et al. 2017).

Recent studies have also investigated wealth disparities among households with resident children, our study's target population (Gibson-Davis and Percheski 2018; Percheski and Gibson-Davis 2020). This work demonstrates that wealth inequality's magnitude and over-time trend differs between households with and without resident children, including when it comes to racial wealth gaps. Relative to the Black-White wealth gap among households without children, that among child households was already larger in the early 2000s and increasing before the Great Recession (Percheski and Gibson-Davis 2020). By 2016, Black households with children held one cent of wealth per dollar of White wealth, relative to eight cents per dollar among households without resident children. In contrast, among Hispanics, the two gaps followed similar trends until the 2013 to 2016 period, when Hispanic child households made gains relative to their White peers but Hispanic childless households did not; by 2016, Hispanic households with children held eight cents of wealth per dollar of White wealth, relative to two cents per White dollar among households without resident children (Percheski and Gibson-Davis 2020).

Many scholars have interpreted racial differences in wealth as primarily due to manifestations of race's multigenerational and structural influence across various domains of social, economic, and political life (see Bonilla-Silva 1997). These processes disadvantage Blacks and Hispanics and advantage Whites, with both advantages and disadvantages compounding across generations. Cedric Herring and Loren Henderson (2016) summarize this interpretation of wealth gaps as focused on racial discrimination and unequal opportunity in three interrelated

markets—labor, credit, and housing. In the labor market, audit studies have demonstrated that discrimination hampers Blacks and Hispanics' labor-market participation and types of jobs they are offered relative to Whites who have comparable human and social capital backgrounds, such as equal educational attainment (Gaddis 2015; Pager, Western, and Bonikowski 2009). These labor-market processes contribute to racial income gaps that leave Blacks and Hispanics with, on average, less money than Whites to save or invest. In the credit market, among other instances of unequal opportunity, Blacks and Hispanics face discrimination in obtaining loans for small businesses, a potential way to build wealth (Blanchflower, Levine, and Zimmerman 2003; Cavalluzzo and Cavalluzzo 1998). In the housing market, Blacks and Hispanics also have comparatively lower rates of homeownership than Whites, and, among owners, lower wealth returns to their properties (see Killewald 2013), attributable in part to racial discrimination in mortgages and housing that disadvantages Blacks and Hispanics relative to Whites (Quillian, Lee, and Honoré 2020).

Other structural processes that do not fall as neatly within the three markets typology also contribute to racial disparities in wealth. One of many consequences of multigenerational wealth inequality in families is that, even among those who are well off, Blacks and Hispanics are more likely than similarly advantaged Whites to provide financial support to less well-off kin (Heflin and Pattillo 2006), and these processes have been found to contribute to the Black-White wealth gap (O'Brien 2012). Racial disparities in the likelihood of having an incarcerated family member, to the disadvantage of Blacks relative to Whites, also contribute to Black-White wealth gaps (Sykes and Maroto 2016). Black and Hispanic children are more likely than White children to grow up in single parent households (McLanahan and Percheski 2008), implying the possibility that Black and Hispanic fathers may be more likely than White fathers to have unsecured debt in the form of child support arrears, which decrease wealth and are negatively correlated with children's socioemotional outcomes (see Nepomnyaschy et al. 2021, this issue).

Race, Wealth, and Children's Achievement

A number of studies have investigated wealth's role in Black-White and Hispanic-White gaps in children's K–12 educational outcomes. This work has often assessed the extent to which average racial disparities in wealth account for average racial gaps in these outcomes, net of a number of other explanatory factors, including parental SES characteristics such as education and income (Easton-Brooks and Davis 2007; Kaushal and Nepomnyaschy 2009; Orr 2003; Yeung and Conley 2008). On balance, this work indicates that racial wealth disparities may slightly mediate racial gaps in achievement, as well as related outcomes like grade retention. However, the share of racial gaps that wealth accounts for in these studies is small.

Studies by Jean Yeung and Dalton Conley (2008) and Amy Orr (2003) exemplify this approach and its results using data on math and reading achievement from children in a similar age range to our sample. Using data from the Panel Study of Income Dynamics on children between the ages of three and twelve, Yeung and Conley find that significant Black-White gaps in children's reading and math scores were fully accounted for by background characteristics including parental education, occupation, and income, and grandparent's education, which they entered into statistical models before wealth. Despite Black-White achievement gaps being explained prior to the entry of wealth variables, Yeung and Conley find that, net of other variables, some forms of wealth had significant effects on children's achievement at the conditional mean, with liquid and income-producing assets, such as stocks and mutual funds, being particularly beneficial and debts being detrimental, particularly for the math scores of the older age group (six through twelve) in their sample. Orr came to a similar group of conclusions using data from the National Longitudinal Survey of Youth 1979 Children and Young Adult Study (C-NLSY), a data set covering children born to women in the National Longitudinal Study of Youth 1979 cohort (NLSY79). In analyses of math scores of children aged five through fourteen, background characteristics entered into statistical models prior to wealth largely explained the Black-White math gap; wealth did little to further ex-

plain the gap; and income-producing assets were positively and significantly associated with children's achievement at the conditional mean, net of many other covariates, but non-income-producing assets (homes and vehicles) were not.

We contribute to the literature on race, wealth, and children's achievement by shifting the axis of comparison to racial achievement gaps between children whose parents have the same wealth. Whereas previous research in this area has often considered parental wealth after a host of other factors, we foreground wealth by comparing the achievement of White, Black, and Hispanic children whose parents have low, middle, and high wealth. Our comparisons are motivated by the observation that disparities in wealth by race are one of the most stubborn vestiges of multigenerational and structural racial inequality. Thus, it seems reasonable to assume that White, Black, and Hispanic children whose parents have the same or a similar position in the wealth distribution will have relatively comparable access to resources for their academic development and, as a result, relatively comparable achievement.

However, if we do find racial achievement gaps between same-wealth children, it would mean that wealth, at least when measured as parental net worth, still does not fully capture racial differences in children's developmental opportunities—indicating the need to search out racial differences between same-wealth families in other factors relevant to children's achievement. To this end, we first assess racial differences at our three focal wealth levels in a set of family demographic characteristics and measures of children's developmental contexts. These variables operationalize a number of the hypothesized mechanisms for household wealth's effects on children's outcomes that Gibson-Davis and Hill outline in the introduction—particularly resources, class status, parental stress, and parental warmth and sensitivity.

The NLSY data we use contain measures of parental net worth (our primary measure of wealth), as well as detailed variables for the asset and debt components that make up net worth. This information allows us to subsequently investigate the extent to which there are racial differences in same-net-worth fami-

lies' asset and debt portfolios. Such differences may also contribute to racial achievement gaps between children whose parents have the same wealth. As reviewed, liquid and income-producing assets are positively correlated with children's achievement (Orr 2003; Yeung and Conley 2008), net of other factors. Both Orr (2003, see table 1) and Yeung and Conley (2008, see table 1) find that, on average, Blacks have substantially fewer or lower levels of these types of assets than Whites (see also Keister 2000). It is less clear how such differences will play out in same-wealth comparisons, and those studies' samples did not include Hispanics. However, it is possible that Blacks' and Hispanics' wealth portfolios contain fewer of these types of assets than those of same-wealth Whites.

If, at a given level of net worth, Blacks and Hispanics have fewer assets than Whites, it would imply that they also have fewer debts. Yeung and Conley (2008) find that, on average, Whites were almost twice as likely as Blacks to have debt (a summary measure of all debts other than mortgages) and held almost three times as much of it, although this debt was negatively correlated with children's achievement, net of other factors. The same caveats noted above apply to how those trends could be borne out in our analyses. Further, the distinction between good and bad debt (see Gibson-Davis and Hill 2021, this issue, figure 4) is also relevant. Certain types of debt may, under ideal (non-predatory) circumstances, aid children's development. Mortgage debt, for example, could allow a family to reside in a high-quality public school's catchment area that they otherwise would not be able to access.

This Study

To summarize, racial disparities in wealth are vast and long-standing. Black and Hispanic children are substantially less likely than White children to reap the child development benefits of parental wealth. A number of studies have investigated the extent to which racial differences in parental wealth account for average racial achievement gaps. However, we are not aware of any that have investigated racial achievement gaps between children whose parents have the same wealth. In this study, we track the achievement trajectories, from age

five to fourteen, of White, Black, and Hispanic children whose parents have low (25th percentile), middle (50th percentile), and high (75th percentile) wealth. We also descriptively assess two sets of potential explanations for any racial achievement gaps between same-wealth children. To do so, we investigate racial differences between same-wealth families in characteristics of families (mechanisms of wealth's influence on child development) and their finances (financial portfolio composition).

DATA AND METHODS

Data for this study come from the National Longitudinal Survey of Youth 1979 Children and Young Adult study (C-NLSY) (Center for Human Resource Research 2009). The study is sponsored by the Bureau of Labor Statistics and conducted by the Center for Human Resource Research at the Ohio State University and NORC at the University of Chicago. C-NLSY is made up of data on children born to the women in the original NLSY79 cohort (see Center for Human Resource Research 2001). In the NLSY79's base year of 1979, data were collected from a nationally representative sample of 12,686 respondents between the ages of fourteen and twenty-two (born between 1957 and 1965). NLSY79 respondents were interviewed annually from the base year through 1994, and in even years since then. Beginning in 1986, NLSY began collecting data on children born to these women, with interviews and assessments occurring every two years.

We restructured the C-NLSY data into a child-age record, drawing on all available outcome and explanatory variable observations for children when they were between the ages of five and fourteen. We did not use multiple imputation because most children had a nonmissing observation on our variables of interest in at least one survey wave between those ages. We

adjusted standard errors for the study's complex sampling design. When weighted, the C-NLSY data are representative of children born to the NLSY79's representative sample of women.

Variables

Our outcome variables are children's Peabody Individual Achievement Test (PIAT) math and reading recognition assessment scores from age five through fourteen (for more information on these tests' psychometric properties and administration procedures, see National Longitudinal Surveys n.d.).[1] The math assessment tested skills ranging from number recognition to geometry. The reading recognition assessment primarily tested children's ability to read aloud words that ranged in difficulty from the preschool to the high school levels (essentially an oral reading exam). We use children's age-adjusted percentile scores on these assessments.

We measure families' wealth with the NLSY's variable for total family net wealth (assets minus debts). We take this variable from children's mothers' NLSY79 records, which we merge onto their children's C-NLSY records.[2] NLSY created the total net wealth variable based on respondents' answers to a detailed battery of questions about the family's assets and debts. The categories of assets and debts are home value; mortgages and other residential debt; value of farm, business, or real estate; debts of farm, business, or real estate; debt of vehicles; value of stocks, bonds, or mutual funds; value of CDs; value of trusts; value of IRAs; value of 401ks and 403bs; value of cash savings; value of other assets such as jewelry and collections; and value of all other debts such as credit cards and student loans. This information is available in NLSY79 survey waves from 1985 to 1990, 1992 to 2000, 2004, 2008, 2012, and 2016. In some years, wealth is

---

1. We do not use children's scores on the PIAT reading comprehension test, also available in the C-NLSY data. Children had to have a high enough score on the reading recognition test to take the reading comprehension test, resulting in small samples of children younger than seven (see National Longitudinal Surveys n.d.). From age seven to fourteen, reading recognition results are substantively similar to those we present for reading recognition.

2. The survey's definition of a family includes those related to the respondent by blood, marriage, or adoption. These variables, therefore, do not capture assets and debts of cohabiting partners who are not married to the mother.

top-coded at $50,000. In these years, we multiplied top-coded values by 1.33. We capture families' positions in the wealth distribution using (child) age-specific wealth percentiles, based on the distribution of households with children and adjusted for family size. We enter this variable into our models as average percentile across the years when a child was between the ages of five and fourteen. Some of our analyses also use information on specific categories of the assets and debts used to calculate net wealth. Our analyses of families' economic situations also draw on the separate variable for total net family income based on income from the past calendar year, available in all NLSY79 survey waves.

Other explanatory variables include family demographic characteristics and children's developmental contexts, which we measure with variables used in previous studies that have used the C-NLSY data to investigate relationships between these factors and children's developmental outcomes (see, for example, Carlson and Corcoran 2001). These variables are child's age, birth order, gender, and birth weight (low or not); whether their father lives in the household; number of children in the household; HOME (Home Observation Measurement of the Environment) score; and mother's age at the child's birth, years of education, CES-D score (a measure of depressive symptoms), Pearlin Mastery Score, and Armed Forces Qualifying Test score.

Analytic Strategy
Our analysis proceeds in two stages. First, we assess potential racial differences in the relationship between parental wealth and children's achievement with multilevel growth curve models. In these models, years (in age, five through fourteen) are nested within children. The model includes a three-way interaction of race (a vector containing indicator variables for whether a child is White, Black, or Hispanic), average wealth percentile, and child's age. We model the functional form of the relationship between wealth and children's achievement as linear, following previous research (Hällsten and Pfeffer 2017).[3] We generate predictions based on this model, using Stata's margins command, of the math and reading recognition percentile scores of White, Black, and Hispanic children across the parental wealth distribution as they age from five to fourteen.

Second, we provide a set of descriptive analyses to assess potential racial differences, net of wealth, in families' demographic and financial characteristics. We do so by predicting, at the 25th, 50th, and 75th percentiles of average wealth, Whites', Blacks', and Hispanics' means on variables for family demographic characteristics and other aspects of children's developmental contexts and a subset of the assets and debts used to calculate net wealth, plus family income. These predictions come from regression models that successively use each variable (averaged, child age five through fourteen) as the outcome and regress it on an interaction of race and average wealth percentile. We treat the asset and debt variables as percentiles to deal with inflation and related issues. Descriptive statistics for assets and debts, therefore, provide families' ranks in the distributions of those holdings.

RESULTS
Figure 1 presents histograms, by race, of wealth percentile, averaged across the years when a child was between the ages of five and fourteen. Predictably, relative to White families, Black and Hispanic families are more likely to be found toward the bottom of the wealth distribution and less likely to be found toward the top. The large spikes in Blacks' and Hispanics' wealth percentile distributions are due to reports of $0 net wealth. In results presented later in this article, relative to Whites, standard errors of estimates for Blacks and Hispanics increase by a greater magnitude as net worth percentile increases. This is one of our modeling strategy's desirable properties because it reflects uncertainty based on differential coverage, by race, of families at various points in the wealth distribution.

Figure 2 shows side-by-side box plots of the

3. We also tested other functional forms of the relationship between wealth percentile and the achievement outcomes. On balance, fit statistics favored the linear specification (see table A1).

Figure 1. Histograms of Wealth Percentiles
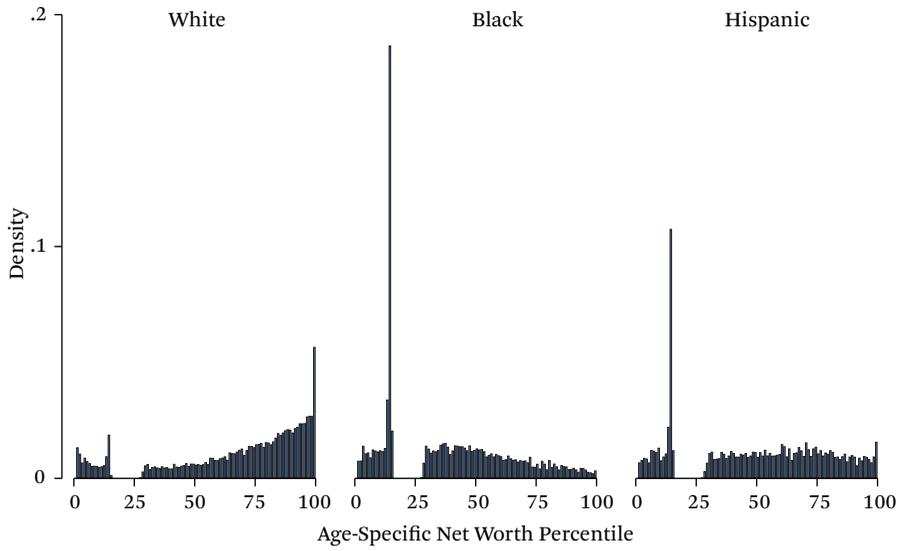
Source: Authors' tabulations based on NLSY and C-NLSY.
Note: Wealth adjusted for square root of household size. Results weighted using the C-NLSY child sampling weight.

Figure 2. Box Plots of Wealth Percentiles by Race Relative to Overall Wealth Percentile
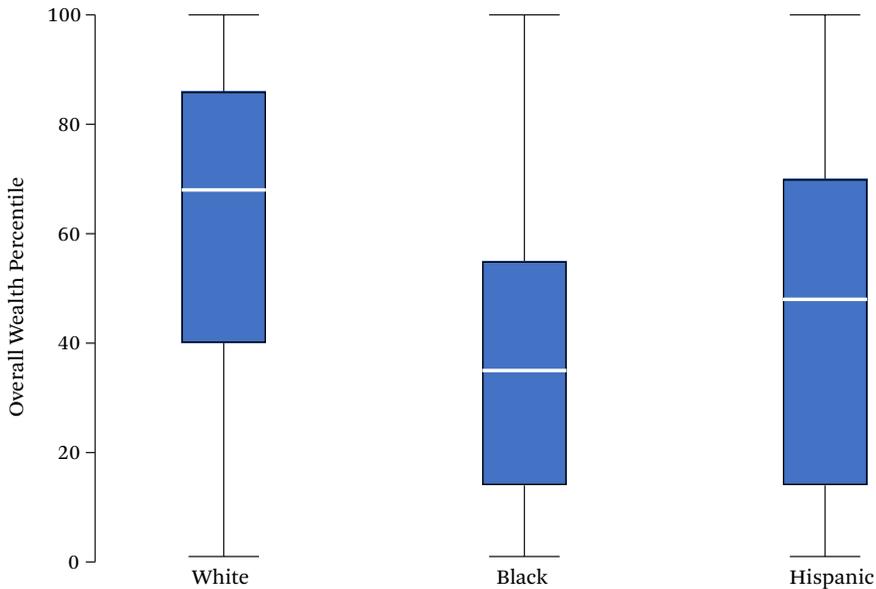
Source: Authors' tabulations based on NLSY and C-NLSY.
Note: Wealth adjusted for square root of household size. Results weighted using the C-NLSY child sampling weight.

Table 1. Predicted Math, Reading Recognition, and Reading Comprehension Scores

Test Subject and Wealth Percentile	Percentile Scores, Age Five	Percentile Scores, Age Fourteen	Gap Change Age Five to Fourteen, in Percentiles
Math			
25th percentile			
White	47.26	49.38	—
Black	39.26***	35.68***	5.70
Hispanic	38.80***	39.62***	1.30
50th percentile			
White	53.92	57.54	—
Black	44.85***	43.08***	5.39
Hispanic	44.23***	46.87***	0.98
75th percentile			
White	60.59	65.69	—
Black	50.44***	50.49***	5.05
Hispanic	49.66***	54.13***	0.63
Reading recognition			
25th percentile			
White	55.24	51.73	—
Black	55.14	37.93***	13.70
Hispanic	47.11***	47.12*	−3.52
50th percentile			
White	61.24	59.38	—
Black	61.46	44.84***	14.76
Hispanic	54.06***	53.95***	−1.75
75th percentile			
White	67.23	67.02	—
Black	67.79	51.76***	15.82
Hispanic	61.01***	60.77***	0.03

Source: Authors' tabulation based on NLSY and CNLSY.
Note: Predictions are based on multilevel growth curve models (see model 1 for each subject in table A2). Numbers of observations: math (31,717 observations, 8,513 children); reading recognition (31,591 observations, 8,504 children). Gap change is the difference, in percentiles, between the gap at age five and the gap at age fourteen. Significance tests are relative to same-wealth-percentile Whites, based on robust standard errors (not shown).
*$p < .05$; **$p < .01$; ***$p < .001$

25th, 50th, and 75th wealth percentiles, by race, with the overall (all races) wealth percentiles on the y-axis. The figure provides additional context for our results by showing where households at the 25th, 50th, and 75th percentiles of the overall wealth distribution fall in their own race's income distribution. For example, Black and Hispanic households at the 50th percentile of the overall wealth distribution fall, respectively, at the 75th and 60th percentiles of their own-race wealth distributions. Readers should keep these

distributions in mind when considering the results that follow, particularly at relatively high wealth percentiles, where few Hispanic and even fewer Black families are found. For the remainder of the study, all results are based on the overall (all races) wealth percentiles.

Race, Parental Net Worth, and Children's Math and Reading Achievement
Table 1 shows predicted test scores, by race, for a child whose parents are at 25th, 50th, and 75th

Figure 3. Predictions on Math, 50th Wealth Percentile
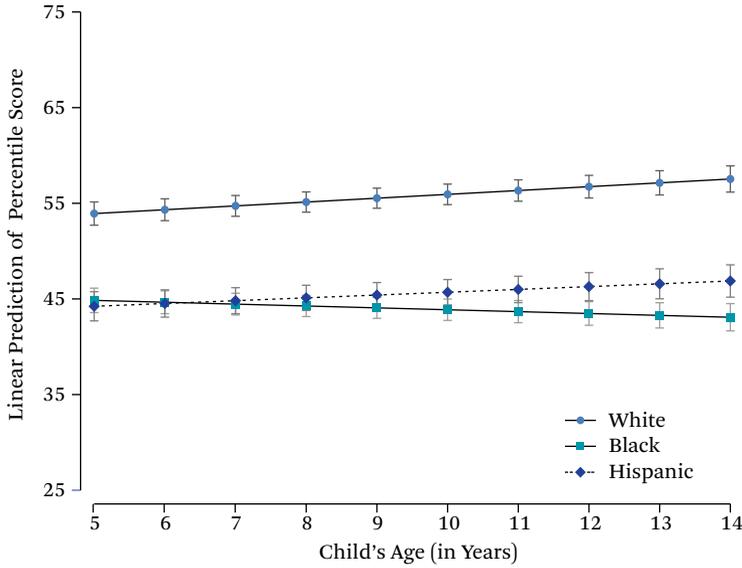
Source: Authors' tabulations based on NLSY and C-NLSY.

Figure 4. Predictions on Reading, 50th Wealth Percentile
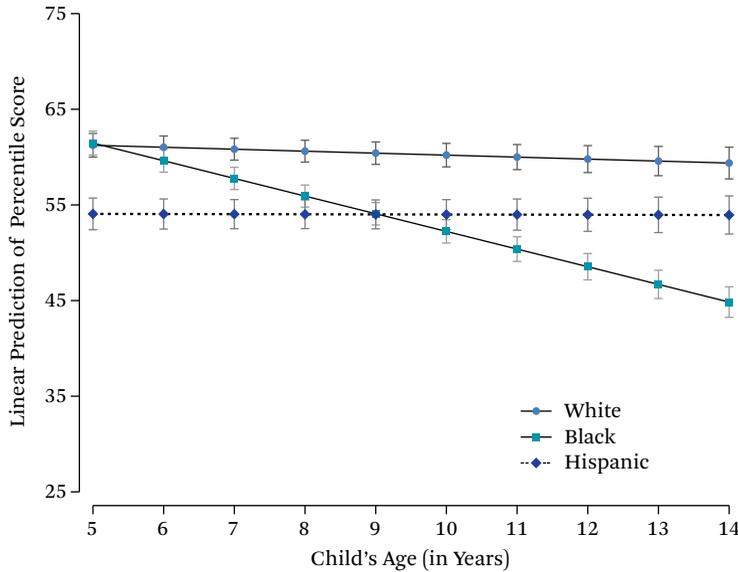
Source: Authors' tabulations based on NLSY and C-NLSY.

percentiles of the wealth distribution, at ages five and fourteen. Table A2 provides the coefficients from the multilevel growth curve models on which these predictions are based. Figure 3 (math) and figure 4 (reading recognition) depict results at the 50th wealth percentile, across all ages from five through fourteen. Two key trends emerge from these results. First, Black and Hispanic children often have significantly lower math and reading scores than

same-wealth White children at age five, the age typically associated with the start of formal schooling in kindergarten. However, these patterns vary systematically by test subject and racial group. In math, both Black and Hispanic children's scores lag behind those of same-wealth Whites. Although all three groups' scores predictably increase as parental wealth increases, a gap of approximately one decile in the achievement distribution is visible at all three focal percentiles ($p < .001$ for all comparisons). For example, at the median of the parental wealth distribution, White children's math scores are at the 54th percentile, and Black and Hispanic children's scores are both near the 44th percentile. In reading recognition, Black children's scores at age five are statistically indistinguishable from those of same-wealth Whites, but Hispanics' scores are significantly below those of same-wealth Whites at all three focal percentiles. For example, median-wealth Black and White children have reading recognition scores at the 62nd percentile (difference *NS*), while same-wealth Hispanic children's scores are at the 54th percentile ($p < .001$ versus Whites).

Second, achievement differences between same-wealth White, Black, and Hispanic children change as children age from five to fourteen, but these gap changes are much larger and more deleterious for Blacks than for Hispanics. In math, Black-White gaps between same-wealth children grow by approximately 5 achievement percentiles at each wealth percentile; Hispanic-White gaps grow by no more than 1 achievement percentile. These patterns are even more striking in reading recognition. In that subject, the Black-White gap grows by between 14 and 16 percentiles. Hispanic-White gaps, in contrast, remain stable (75th wealth percentile) or decrease by up to 4 achievement percentiles (25th wealth percentile). Together, these patterns serve to maintain the substantive and statistical significance of Black-White and Hispanic-White achievement gaps between same-wealth children in the comparisons where we observed them at age five, and they create newly significant gaps where we did not (Black-White comparisons in reading recognition).

Race, Parental Net Worth, and Family Characteristics

Racial gaps in achievement trajectories between same-wealth children raise the question of the extent to which there are measurable differences between same-wealth White, Black, and Hispanic families that may help account for the gaps. Here, we focus descriptively on two related explanatory domains where we may uncover racial variation, net of wealth—families and their finances. For the first, we assess Black-White and Hispanic-White differences between same-wealth families in measures of family demographic characteristics and other aspects of children's developmental contexts. Table 2 provides these descriptive results for the 25th, 50th, and 75th percentiles of average wealth across the years when the child was age five through fourteen.

Across the wealth distribution, Black and Hispanic families often have significantly different profiles on this set of variables, compared to same-wealth Whites. Notably, these differences are not always to the disadvantage of families of color. At the 25th and 50th percentiles of average wealth, Hispanic (but not Black) mothers have later ages at childbirth than same-wealth White mothers ($p < .05$ for both), and this difference is more than one year at the 25th wealth percentile. At these wealth levels, therefore, Hispanic children are more likely than White children to benefit from the positive developmental correlates of later maternal age (Duncan, Kalil, and Ziol-Guest 2017; Lopez Turley 2003).

The majority of the other racial differences between same-wealth families that we observe, however, are to Blacks' and Hispanics' disadvantage relative to same-wealth Whites, according to research about the factors' relationships to children's development. For example, at each wealth percentile, Blacks (but not Hispanics) spend a significantly lower proportion of years between the ages of five and fourteen with a father present in the household than same-wealth Whites. At the 25th wealth percentile, Blacks' figure is less than one-quarter of this period, relative to just under half for same-wealth Whites ($p < .001$). Blacks' and Whites' proportions both increase with parental wealth.

Table 2. Family Demographic and Child Developmental Context Characteristics, by Race and Wealth (Average Percentile, Child Age Five to Fourteen)

Variable	White Mean or Proportion	Black Mean or Proportion	Hispanic Mean or Proportion
25th percentile			
Mother's age at child's birth	24.34	25.13	25.44*
Child was first born	0.42	0.25***	0.27***
Child's birthweight is low	0.09	0.12	0.08
Average number of children in the household	2.23	2.72***	2.91***
Proportion years father present in the household	0.46	0.22***	0.42
Average mother's years of schooling	11.56	11.83	10.54***
Mother's armed forces qualifying test score	40.56	18.58***	16.97***
Mother's CES-D score	6.80	6.19	6.81
Mother's Pearlin Mastery score	18.43	20.47***	19.38
Average HOME observation and measurement score	40.49	26.43***	29.53***
Child is female	0.51	0.51	0.45
50th percentile			
Mother's age at child's birth	26.31	26.58	26.96*
Child was first born	0.42	0.29***	0.30***
Child's birthweight is low	0.07	0.11**	0.07
Average number of children in the household	2.33	2.57***	2.76***
Proportion years father present in the household	0.62	0.44***	0.60
Average mother's years of schooling	12.56	12.76	11.49***
Mother's armed forces qualifying test score	49.35	25.65***	26.41***
Mother's CES-D score	5.65	5.34	5.65
Mother's Pearlin Mastery score	19.79	21.14***	20.29
Average HOME observation and measurement score	49.80	36.74***	39.83***
Child is female	0.50	0.49	0.47
75th percentile			
Mother's age at child's birth	28.28	28.04	28.48
Child was first born	0.42	0.34**	0.34**
Child's birthweight is low	0.05	0.09*	0.06
Average number of children in the household	2.44	2.41	2.61*
Proportion years father present in the household	0.78	0.67***	0.77
Average mother's years of schooling	13.55	13.70	12.43***
Mother's armed forces qualifying test score	58.15	32.71***	35.85***
Mother's CES-D score	4.50	4.50	4.50
Mother's Pearlin Mastery score	21.15	21.82	21.19
Average HOME observation and measurement score	59.11	47.05***	50.13***
Child is female	0.49	0.47	0.49
Maximum number of observations	5,444	3,206	2,219

Source: Authors' tabulations based on NLSY79 and C-NLSY.

Note: Omitted groups for categorical variables are: child was not first born, child's birthweight was not low, child is male. Significance tests are relative to same-wealth-percentile Whites, based on robust standard errors (not shown).

*$p < .05$; **$p < .01$; ***$p < .001$

But, at the 75th wealth percentile, Blacks still lag behind same-wealth Whites on this measure. White children at that wealth level spend more than three-quarters of their years from five through fourteen with a father present, versus just over two-thirds for same-wealth Black children ($p < .001$). These patterns imply that, relative to same-wealth Whites, Black children are significantly less likely to reap two-parent family structure's positive effects on math and reading achievement (Carlson and Corcoran 2001). Also notable at each wealth level are Blacks' and Hispanics' significant disadvantages relative to same-wealth Whites on HOME scores, a measure of the quality of children's home environment, and Hispanics' (but not Blacks') significant disadvantages relative to same-wealth Whites in maternal education, of approximately one year at each wealth level. The latter difference indicates that Hispanic children are less likely than same-wealth White children to reap the developmental benefits of maternal education (McLanahan 2004).

In supplemental analyses (not shown) we conducted a counterfactual exercise that predicted Blacks' and Hispanics' math and reading achievement scores at age five if they had the same family demographic characteristics and developmental context characteristics as same-wealth Whites. We obtained these predictions by reestimating the growth curve models including all of the family variables as covariates and repredicting Blacks and Hispanics' scores using the means for same-wealth Whites that we obtained in table 2. In math, adjusted Black-White and Hispanic-White gaps between same-wealth children remained significant in most comparisons (with the exception of the Hispanic-White gap at the 25th wealth percentile), but Black-White gaps were reduced by approximately 60 percent, and Hispanic-White gaps by between 53 and 70 percent. In reading, adjusting for these factors resulted in substantively large and statistically significant net Black advantages relative to same-wealth Whites, of around 5 achievement percentiles in each comparison, and fully accounted for Hispanic-White gaps. Therefore, racial variation in demographic and developmental context characteristics, net of wealth, plays a con-

siderable role in racial achievement gaps between Black, Hispanic, and White children observed at age five.

Race, Parental Net Worth, and Family Financial Portfolios

These racial differences in family demographic and developmental context characteristics also bring forward an important puzzle about wealth itself. Why do we observe these differences, often to the disadvantage of families and children of color, net of wealth, considered to be one of the most enduring vestiges of multigenerational and structural racial disadvantage?

Table 3 presents one candidate solution for this puzzle. It shows descriptive statistics for selected components of net worth, by race, at the 25th, 50th, and 75th wealth percentiles. These descriptive statistics reveal systematic distinctions in how White, Black, and Hispanic families have attained positions at the 25th, 50th, and 75th wealth percentiles. Table 3 shows that these distinctions result in substantively large and statistically significant racial differences in families' financial portfolios at a given level of wealth. Moreover, these racial differences vary in magnitude and significance across the wealth distribution.

At the 25th wealth percentile, Blacks (10 percent) and Hispanics (12 percent) are less than half as likely as same-wealth Whites to own residential property, among whom about 25 percent of families are property owners ($p < .001$ for both comparisons). However, among those who own, there are statistically insignificant racial differences in the market value of properties or in debt on the property. Holdings of other assets and debts also differed by race at this wealth level. Both Blacks and Hispanics were approximately half as likely as Whites to have any money assets, such as savings accounts, and three-quarters as likely to have other assets worth more than $500, such as jewelry or collections (all differences significant at $p < .01$ or lower). But, among holders of those assets, differences in their values were again not significant.

Families at the 25th wealth percentile also differed by race in their exposure to other debt.

Table 3. Descriptive Statistics for Selected Components of Net Worth, Plus Income, by Race and Net Worth (Average Percentile, Child Age Five to Fourteen)

Variable	White Mean or Proportion	Black Mean or Proportion	Hispanic Mean or Proportion
25th percentile			
Own residential property?	0.25	0.10***	0.12***
Market value of owned residential property percentile	19.91	22.83	17.94
Amount of mortgages and back taxes owed on residential property percentile	40.49	34.32	36.58
Any money assets (savings account)?	0.53	0.27***	0.27***
Amount of money assets percentile	20.17	22.86	24.08
Own any other assets worth more than $500?	0.39	0.32**	0.28***
Market value of assets worth more than $500 percentile	29.82	28.50	25.10
Any other debt more than $500?	0.55	0.31***	0.34***
Amount of other debt more than $500 percentile	54.03	43.04***	42.50***
Household income percentile	40.11	29.33***	29.84***
50th percentile			
Own residential property?	0.51	0.40***	0.44***
Market value of owned residential property percentile	38.99	36.93	38.18
Amount of mortgages and back taxes owed on residential property percentile	48.15	42.13**	46.55
Any money assets (savings account)?	0.69	0.53***	0.51***
Amount of money assets percentile	39.39	39.15	40.59
Own any other assets worth more than $500?	0.59	0.57	0.51***
Market value of assets worth more than $500 percentile	44.05	42.98	41.42
Any other debt more than $500?	0.48	0.36***	0.37***
Amount of other debt more than $500 percentile	53.24	45.78***	47.01***
Household income percentile	54.95	47.93***	47.60***
75th percentile			
Own residential property?	0.78	0.70***	0.75
Market value of owned residential property percentile	58.07	51.04***	58.42
Amount of mortgages and back taxes owed on residential property percentile	55.82	49.95**	56.53
Any money assets (savings account)?	0.85	0.79***	0.74***
Amount of money assets percentile	58.62	55.44*	57.10
Own any other assets worth more than $500?	0.79	0.83	0.74
Market value of assets worth more than $500 percentile	58.28	57.46	57.74
Any other debt more than $500?	0.40	0.41	0.40
Amount of other debt more than $500 percentile	52.45	48.53	51.52
Household income percentile	69.80	66.54*	65.36***
Maximum number of observations	4,650	3,020	2,104

Source: Authors' tabulation based on NLSY79 and C-NLSY.
Note: Significance tests are relative to same-wealth-percentile Whites, based on robust standard errors (not shown).
*p < .05; **p < .01; ***p < .001

Blacks (31 percent) and Hispanics (34 percent) were both significantly less likely than their White counterparts (55 percent) to report other debts more than $500. Further, among those holding this debt, Blacks and Hispanics held significantly less than Whites: Blacks and Hispanics were just above the 40th percentile, whereas Whites were a decile higher in the distribution, above the median ($p < .001$ for both comparisons). This category of debt conflates types of debt like credit card debt, potentially "bad debt," and educational debt, potentially "good debt." Therefore, relative to Whites, Blacks and Hispanics may be less exposed to bad debt at this wealth level. However, these figures may also signal racial disparities, to the disadvantage of families of color, in access to good debt.

Many of these racial differences persisted at the median of the wealth distribution, alongside predictable changes in groups' means and proportions as wealth increases. Notably, Whites', Blacks', and Hispanics' figures for other debt more than $500 were similar at the 25th and 50th wealth percentiles. Using Blacks as an example, supplemental tests (not shown) reveal that the proportion of Blacks reporting this type of debt is significantly higher at the median of the wealth distribution (36 percent) than at the 25th percentile (31 percent, $p < .01$ for comparison), but the amount of debt held is not significantly different (46th percentile at the median versus 43rd percentile at the 25th wealth percentile). It is possible that, at the median of the wealth distribution, this type of debt includes a higher proportion of educational and other productive debt.

Patterns are more distinct at the 75th wealth percentile. At this wealth level, Blacks (70 percent), but not Hispanics (75 percent) are significantly less likely to own residential property than Whites (78 percent, $p < .001$ for Black-White comparison). Further, at this wealth level, Blacks' residential property has significantly lower value than Whites' (51st percentile for Blacks versus 58th percentile for Whites, $p < .001$), a candidate explanation for their significantly lower level of mortgages and back taxes owed (50th percentile for Blacks versus 56th percentile for Whites, $p < .01$). Blacks and Hispanics continue to be significantly less

likely than same-wealth Whites to have money assets. However, in a trend not observed at the 25th or 50th wealth percentiles, Blacks' amount of such assets among holders was significantly lower than Whites' (55th percentile versus 59th percentile, $p < .05$). We also do not observe racial differences in other debt more than $500 at this highest focal wealth level. It remains that, relative to other financial variables, proportions of families reporting such debt and the amount of it among those who have it both change much less across the wealth distribution.

Table 3 also shows the household income percentiles of Whites, Blacks, and Hispanics at the three focal wealth percentiles. Income is distinct from wealth and generally not considered a part of net worth (see Gibson-Davis and Hill 2021, this issue). However, it is a related aspect of families' financial situations that has strong correlations with the developmental environments families are able to provide for children (Bassok et al. 2016; Kalil et al. 2016), as well as children's math and reading achievement outcomes in early childhood and beyond (Reardon 2011; Reardon and Portilla 2016). As the table shows, income is another measure where Blacks and Hispanics are disadvantaged relative to same-wealth Whites. At each of the three focal wealth levels, both groups of color report significantly lower household incomes than same-wealth Whites.

As was true for family characteristics, these analyses make clear that, even at the same level of wealth, the circumstances of same-wealth White, Black, and Hispanic families differ significantly in ways that matter for children's achievement. In regard to the financial variables in table 3, Whites, Blacks, and Hispanics attain the same positions in the wealth distribution but by different pathways. Relative to same-wealth Whites, Blacks and Hispanics often have significantly fewer assets and significantly fewer debts. The asset side of the ledger includes lower holdings of the liquid assets that research shows are positively correlated with children's achievement net of a host of other factors (Orr 2003; Yeung and Conley 2008).

On the debt side of the ledger, Blacks and Hispanics were significantly less likely than same-wealth Whites to own homes in many

comparisons, and Blacks (but not Hispanics) often had significantly lower levels of mortgage debt. Blacks at the 75th wealth percentile also owned homes of significantly lower value than same-wealth Whites. We interpret these findings in light of persistent anti-Black and anti-Hispanic discrimination in mortgages and housing. As Lincoln Quillian, John Lee, and Brandon Honoré (2020) show in a meta-analysis of previous research from 1976 through 2016, including experimental audits, Blacks and Hispanics continue to face discrimination relative to Whites in housing market outcomes, such as the number of units they are shown, as well as mortgage market outcomes, such as loan approval and mortgage cost. This work and other studies have pointed to housing's role in Black-White and Hispanic-White wealth gaps (Killewald and Bryan 2016). Here we show that racial differences remain in housing characteristics among households that have the same net worth. Larger Black-White than Hispanic-White differences in some comparisons, such as property value among families at the 75th wealth percentile, are consistent with findings that some forms of housing discrimination have more negative impacts on Blacks than on Hispanics (Quillian, Lee, and Honoré 2020).

Our focus on children's achievement calls attention to these patterns' implications for the Black-White and Hispanic-White achievement gaps between children with same-wealth parents that we have documented above (see table 1, figures 3 and 4). Lower rates of homeownership and lower home values among owners signal that, at a given wealth level, Black and Hispanic families may live in less socioeconomically advantaged neighborhoods than Whites, potentially resulting in fewer developmental opportunities from neighborhoods and schools. Income differences between Black, Hispanic, and White families who have the same net worth—to Blacks' and Hispanics' disadvantage—also provide evidence in favor of such a process. Previous work has demonstrated correlations between parental income and neighborhood and school characteristics, with implications for children's achievement (Owens 2018).

DISCUSSION AND CONCLUSION

Using data from the NLSY79 and C-NLSY, we investigated possible differences in the achievement trajectories, from age five through fourteen, of White, Black, and Hispanic children whose parents have the same wealth, measured as average net worth over the years when the child was in this age range. We also explored two sets of explanations for any such differences, guided by an explanatory framework holding that there may be racial differences, net of wealth, in (1) families' demographic and developmental context characteristics and (2) their financial portfolios, both of which research links to children's achievement.

Our study brings three main findings forward. First, across the distribution of parental wealth, Black and Hispanic children often have significantly worse math and reading scores than same-wealth Whites by age five, and these disparities often increase through age fourteen, particularly for Black-White comparisons. Second, racial differences are clear between same-wealth families, often to the disadvantage of families of color, in family demographic and developmental context characteristics—measures of some of the mechanisms through which household wealth is related to children's development (see Gibson-Davis and Hill 2021, this issue). Third, at a given level of net worth, relative to same-wealth Whites, Black and Hispanic families often have significantly fewer assets and significantly fewer debts. On the asset side of the ledger, such racial differences included Blacks and Hispanics having lower holdings of the liquid assets that research demonstrates are positively correlated with children's achievement net of a host of other factors (Orr 2003; Yeung and Conley 2008). On the debt side, relative to Whites, Blacks and Hispanics were often less likely to own homes, and among owners Blacks had lower property values than Whites at the 75th wealth percentile. These patterns could mean that, relative to same-wealth Whites, Blacks and Hispanics have less access to developmentally advantageous school and neighborhood contexts.

We interpret racial variation in financial portfolios at a given level of net worth as struc-

tured by opportunities and constraints that disadvantage Blacks and Hispanics and advantage Whites. These include, but are not limited to, historical and contemporary discrimination and inequality in three key markets for wealth accumulation—labor, credit, and housing (Herring and Henderson 2016). Research on racial disparities in wealth demonstrates how, for example, unequal asset ownership (Keister 2000) and housing and mortgage discrimination (Quillian, Lee, and Honoré 2020) contribute to racially disparate opportunities for families to build wealth. We show some differences consistent with these patterns among Black, Hispanic, and White families who reach the same point in the wealth distribution. As a summary measure of parental wealth, net worth may obscure systematic racial disparities in access to assets, such as savings accounts, and debts, such as mortgages, that may garner access to socioeconomically advantaged neighborhoods, which could be beneficial for children's achievement. We believe the analytic vantage point of same-wealth comparisons holds considerable value for future research on race and wealth in a number of areas beyond its implications for children's achievement, which has been our focus here.

These findings and their implications should be considered in light of the study's limitations. First, we observed children's achievement beginning at age five, toward the conclusion of the early childhood period, when developmental trajectories are particularly sensitive to inputs, including those related to household wealth. Measures from birth through age five would contribute to better understanding of the processes that result in racial achievement gaps, to the disadvantage of children of color relative to same-wealth Whites, in math and reading achievement by age five. Second, the C-NLSY data leave us unable to investigate possible racial differences between same-wealth families in school and neighborhood contexts. Schools, neighborhoods, and the peers children encounter in them are all key mechanisms of the relationship between household wealth and children's developmental outcomes (see Gibson-Davis and Hill 2021, this issue). We also lack data on instances of discrimination and inequality that Black and Hispanic students may encounter within schools. These could depress Black and Hispanic children's achievement relative to that of same-wealth Whites, including within socioeconomically advantaged and racially integrated schools and districts, that is, net of the potential differences in school quality just discussed (see Ispa-Landa and Conwell 2015; Keels, Durkee, and Hope 2017; Lewis-McCoy 2014; Lewis and Diamond 2015). Further, relative to the family characteristics we assess, school and neighborhoods influences on children's development increase as they age (see Chase-Landsdale et al. 1997), making them highly relevant to children's achievement trajectories from age five through fourteen.

Table A1. Fit Statistics for Alternative Specifications of Wealth in Multilevel Growth Curve Models

	N	df	BIC
Math			
Wealth	31,717	17	285,061.5
Wealth + wealth-squared	31,717	23	285,019.5
Wealth + wealth-squared + wealth-cubed	31,717	29	285,069.5
Reading recognition			
Wealth	31,591	17	279,640.8
Wealth + wealth-squared	31,591	23	279,655.1
Wealth + wealth-squared + wealth-cubed	31,591	29	279,697

Source: Authors' tabulation based on NLSY79 and C-NLSY.

Table A2. Coefficients from Multilevel Growth Curve Models

Variable	Math	Reading Recognition
Race = Black	−3.58	6.58*
	(2.81)	(2.82)
Race = Hispanic	−6.33	−12.05***
	(3.36)	(3.44)
Average net worth percentile, child age 5–14	.23***	.20***
	(.02)	(.03)
Black x average net worth percentile	−.05	.03
	(.04)	(.05)
Hispanic x average net worth percentile	−.06	.08
	(.05)	(.05)
Child age (years)	.07	−.57**
	(.19)	(.22)
Black x child age	−.67**	−1.40***
	(.26)	(.28)
Hispanic x child age	−.18	.59
	(.31)	(.34)
Average net worth percentile x child age	.01*	.00*
	(.00)	(.00)
Black x average net worth percentile x child age	.00	.00
	(.00)	(.00)
Hispanic x average net worth percentile x child age	.00	−.01
	(.00)	(.00)
Child is female	−.54	4.82***
	(.45)	(.48)
Constant	40.51***	49.72***
	(2.08)	(2.15)
Number of observations	31,717	31,591
Number of groups	8,513	8,504

Source: Authors' tabulation based on NLSY79 and C-NLSY.
Note: Robust standard errors in parentheses.
*$p < .05$; **$p < .01$; ***$p < .001$

REFERENCES

Astor, Maggie. 2019. "Kamala Harris and Elizabeth Warren Introduce Racial Equity Plans." *New York Times*, July 6. Accessed December 1, 2020. https://www.nytimes.com/2019/07/06/us/politics/harris-essence-festival-2020-democrats.html.

Bassok, Daphna, Jenna E. Finch, RaeHyuck Lee, Sean F. Reardon, and Jane Waldfogel. 2016. "Socioeconomic Gaps in Early Childhood Experiences." *AERA Open* 2(3): 1–22.

Blanchflower, David G., Phillip B. Levine, and David J. Zimmerman. 2003. "Discrimination in the Small-Business Credit Market." *Review of Economics and Statistics* 85(4): 930–43.

Boen, Courtney, Lisa A. Keister, and Nick Graetz. 2021. "Household Wealth and Child Body Mass Index: Patterns and Mechanisms." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 80–100. DOI: 10.7758/RSF.2021.7.3.04.

Bonilla-Silva, Eduardo. 1997. "Rethinking Racism: Toward a Structural Interpretation." *American Sociological Review* 62(3): 465–80.

Brown, Tyson H. 2016. "Diverging Fortunes: Racial/Ethnic Inequality in Wealth Trajectories in Middle

and Late Life." *Race and Social Problems* 8(1): 29–41.

Carlson, Marcia J., and Mary E. Corcoran. 2001. "Family Structure and Children's Behavioral and Cognitive Outcomes." *Journal of Marriage and Family* 63(3): 779–92.

Cavalluzzo, Ken S., and Linda C. Cavalluzzo. 1998. "Market Structure and Discrimination: The Case of Small Business." *Journal of Money, Credit and Banking* 30(4): 771–92.

Center for Human Resource Research. 2001. *NLSY79 User's Guide*. Columbus: The Ohio State University.

———. 2009. *NLSY79 Child & Young Adult Data Users Guide*. Columbus: The Ohio State University.

Chase-Landsdale, P. Lindsay, Rachel A. Gordon, Jeanne Brooks-Gunn, and Pamela K. Klebanov. 1997. "Neighborhood and Family Influences on the Intellectual and Behavioral Competence of Preschool and Early School-Age Children." In *Neighborhood Poverty: Context and Consequences for Children*, edited by Jeanne Brooks-Gunn, Greg J. Duncan, and J. Lawrence Abner. New York: Russell Sage Foundation.

Conley, Dalton. 1999. *Being Black, Living in the Red: Race, Wealth, and Social Policy in America*. Berkeley: University of California Press.

Darity, William, Jr., Darrick Hamilton, Mark Paul, Alan Aja, Anne Price, Anotonio Moore, and Caterina Chiopris. 2018. "What We Get Wrong About Closing the Racial Wealth Gap." Durham, N.C., and Oakland, Calif.: Samuel DuBois Cook Center on Social Equity and Insight Center for Community Economic Development.

Destin, Mesmin. 2013. "Integrating Resource-Based and Person-Based Approaches to Understanding Wealth Effects on School Achievement." *Economics of Education Review* 33 (April): 171–78.

Duncan, Greg J., Ariel Kalil, and Kathleen M. Ziol-Guest. 2017. "Increasing Inequality in Parent Incomes and Children's Schooling." *Demography* 54(5): 1603–26.

Easton-Brooks, Donald, and Alan Davis. 2007. "Wealth, Traditional Socioeconomic Indicators, and the Achievement Debt." *Journal of Negro Education* 76(4): 530–41.

Gaddis, S. Michael. 2015. "Discrimination in the Credential Society: An Audit Study of Race and College Selectivity in the Labor Market." *Social Forces* 93(4): 1451–79.

Gibson-Davis, Christina, and Heather D. Hill. 2021. "Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 1–26. DOI: 10.7758/RSF.2021.7.3.01.

Gibson-Davis, Christina M., and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55 (May): 1009–32.

Gittleman, Maury, and Edward N. Wolff. 2004. "Racial Differences in Patterns of Wealth Accumulation." *Journal of Human Resources* 39(1): 193–227.

Hällsten, Martin, and Fabian T. Pfeffer. 2017. "Grand Advantage: Family Wealth and Grandchildren's Educational Achievement in Sweden." *American Sociological Review* 82(2): 328–60.

Heflin, Colleen M., and Mary Pattillo. 2006. "Poverty in the Family: Race, Siblings, and Socioeconomic Heterogeneity." *Social Science Research* 35(4): 804–22.

Herring, Cedric, and Loren Henderson. 2016. "Wealth Inequality in Black and White: Cultural and Structural Sources of the Racial Wealth Gap." *Race and Social Problems* 8(1): 4–17.

Ispa-Landa, Simone, and Jordan Conwell. 2015. "'Once You Go to a White School, You Kind of Adapt': Black Adolescents and the Racial Classification of Schools." *Sociology of Education* 88(1): 1–19.

Kalil, Ariel, Kathleen M. Ziol-Guest, Rebecca M. Ryan, and Anna J. Markowitz. 2016. "Changes in Income-Based Gaps in Parent Activities with Young Children from 1988 to 2012." *AERA Open* 2(3): 1–17.

Kaushal, Neeraj, and Lenna Nepomnyaschy. 2009. "Wealth, Race/Ethnicity, and Children's Educational Outcomes." *Children and Youth Services Review* 31(9): 963–71.

Keels, Micere, Myles Durkee, and Elan Hope. 2017. "The Psychological and Academic Costs of School-Based Racial and Ethnic Microaggressions." *American Educational Research Journal* 54(6): 1316–44.

Keister, Lisa A. 2000. "Race and Wealth Inequality: The Impact of Racial Differences in Asset Ownership on the Distribution of Household Wealth." *Social Science Research* 29(4): 477–502.

Killewald, Alexandra. 2013. "Return to Being Black, Living in the Red: A Race Gap in Wealth That

Goes Beyond Social Origins." *Demography* 50(4): 1177–95.

Killewald, Alexandra, and Brielle Bryan. 2016. "Does Your Home Make You Wealthy?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 110–28. DOI: 10.7758/RSF.2016.2.6.06.

———. 2018. "Falling Behind: The Role of Inter- and Intragenerational Processes in Widening Racial and Ethnic Wealth Gaps through Early and Middle Adulthood." *Social Forces* 97(2): 705–40.

Killewald, Alexandra, Fabian T. Pfeffer, and Jared N. Schachner. 2017. "Wealth Inequality and Accumulation." *Annual Review of Sociology* 43(1): 379–404.

Lewis, Amanda E., and John B. Diamond. 2015. *Despite the Best Intentions: How Racial Inequality Thrives in Good Schools*. New York: Oxford University Press.

Lewis-McCoy, R. L'Heureux. 2014. *Inequality in the Promised Land: Race, Resources, and Suburban Schooling*. Stanford, Calif.: Stanford University Press.

Lopez Turley, Ruth N. 2003. "Are Children of Young Mothers Disadvantaged Because of Their Mother's Age or Family Background?" *Child Development* 74(2): 465–74.

McLanahan, Sara. 2004. "Diverging Destinies: How Children Are Faring Under the Second Demographic Transition." *Demography* 41(4): 607–27.

McLanahan, Sara, and Christine Percheski. 2008. "Family Structure and the Reproduction of Inequality." *Annual Review of Sociology* 34(1): 257–76.

Meschede, Tatjana, Joanna Taylor, Alexis Mann, and Thomas Shapiro. 2017. "'Family Achievements?': How a College Degree Accumulates Wealth for Whites and Not For Blacks." *Federal Reserve Bank of St. Louis Review* 99(1): 121–37.

Miller, Portia, Tamara Podvysotska, Laura Betancur, and Elizabeth Votruba-Drzal. 2021. "Wealth and Child Development: Differences in Associations by Family Income and Developmental Stage." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 152–74. DOI: 10.7758/RSF.2021.7.3.07.

National Longitudinal Surveys. n.d. "National Longitudinal Survey of Youth, 1979, Children and Young Adults: Assessments." Accessed December 1, 2020. https://www.nlsinfo.org/content/cohorts/nlsy79-children/topical-guide/assessments.

Nepomnyaschy, Lenna, Allison Dwyer Emory, Kasey J. Eickmeyer, Maureen R. Waller, and Daniel P. Miller. 2021. "Parental Debt and Child Well-Being: What Type of Debt Matters for Child Outcomes?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 122–51. DOI: 10.7758/RSF.2021.7.3.06.

O'Brien, Rourke L. 2012. "Depleting Capital? Race, Wealth and Informal Financial Assistance." *Social Forces* 91(2): 375–96.

Oliver, Melvin L., and Thomas M. Shapiro. 2006. *Black Wealth/ White Wealth: A New Perspective on Racial Inequality*. New York: Routledge.

Orr, Amy J. 2003. "Black-White Differences in Achievement: The Importance of Wealth." *Sociology of Education* 76(4): 281–304.

Owens, Ann. 2018. "Income Segregation Between School Districts and Inequality in Students' Achievement." *Sociology of Education* 91(1): 1–27.

Pager, Devah, Bruce Western, and Bart Bonikowski. 2009. "Discrimination in a Low-Wage Labor Market: A Field Experiment." *American Sociological Review* 74(5): 777–99.

Percheski, Christine, and Christina Gibson-Davis. 2020. "A Penny on the Dollar: Racial Inequalities in Wealth Among Households with Children." *Socius: Sociological Research for a Dynamic World* 6(1): 1–17.

Quillian, Lincoln, John J. Lee, and Brandon Honoré. 2020. "Racial Discrimination in the U.S. Housing and Mortgage Lending Markets: A Quantitative Review of Trends, 1976–2016." *Race and Social Problems* 12(1): 13–28.

Reardon, Sean F. 2011. "The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations." In *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane. New York: Russell Sage Foundation.

Reardon, Sean F., and Ximena A. Portilla. 2016. "Recent Trends in Income, Racial, and Ethnic School Readiness Gaps at Kindergarten Entry." *AERA Open* 2(3): 1–18.

Shanks, Trina R. 2007. "The Impacts of Household Wealth on Child Development." *Journal of Poverty* 11(2): 93–116.

Smith, James P. 1995. "Racial and Ethnic Differences

in Wealth in the Health and Retirement Study." *Journal of Human Resources* 30 (Special Issue): S158–83.

Sykes, Bryan L., and Michelle Maroto. 2016. "A Wealth of Inequalities: Mass Incarceration, Employment, and Racial Disparities in U.S. Household Wealth, 1996 to 2011." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 129–54. DOI: 10.7758/RSF.2016.2.6.07.

Taylor, Paul, Rakesh Kochhar, Richard Fry, Gabriel Velasco, and Seth Motel. 2011. *Wealth Gaps Rise to Record Highs Between Whites, Blacks and Hispanics*. Washington, D.C.: Pew Social & Demographic Trends.

Wolff, Edward N. 2017. "Household Wealth Trends in the United States, 1962 to 2016: Has Middle Class Wealth Recovered?" *NBER* working paper no. 24085. Cambridge, Mass.: National Bureau of Economic Research.

Yeung, W. Jean, and Dalton Conley. 2008. "Black-White Achievement Gap and Family Wealth." *Child Development* 79(2): 303–24.

Parental Debt and Child Well-Being: What Type of Debt Matters for Child Outcomes?

LENNA NEPOMNYASCHY, ALLISON DWYER EMORY, KASEY J. EICKMEYER, MAUREEN R. WALLER, AND DANIEL P. MILLER

Wealth inequality in the United States has increased tremendously over the last several decades and has potentially serious repercussions for disparities in child well-being. Household debt, a key component of wealth, may also play a role in such disparities. In this study, we explore the associations of parents' unsecured debt with children's socioemotional well-being. Using data from the Fragile Families and Child Well-being Study, we compare the associations of mothers' unsecured household debt, fathers' unsecured household debt, and fathers' child support arrears with socioemotional outcomes among nine- and fifteen-year-old children who have a nonresident father. We find robust evidence that nonresident fathers' child support arrears, but not other types of parental household debt, are associated with worse outcomes and that these associations become stronger as children age.

Keywords: parental debt, child support arrears, child well-being, adolescent well-being, nonresident fathers

Wealth inequality in the United States, particularly among families with children, has increased tremendously over the last several decades and has potentially serious repercussions for socioeconomic and racial-ethnic disparities in child well-being (Pfeffer and Schoeni 2016; Yeung and Conley 2008; Gibson-Davis and Percheski 2018; Pfeffer and Waitkus 2021, this issue; Gibson-Davis and Hill 2021, this issue). Family wealth is the stock of accumulated goods and assets to which a family has access. Research has linked family wealth with various domains of child well-being, and these accumulated resources may have both direct and indirect benefits for children (Elliott, Destin, and Friedline 2011; Grinstein-Weiss, Shanks, and Beverly 2014; Shanks 2007; Moulton et al. 2020; Conwell and Ye 2021, this issue; Boen, Keister, and Graetz 2021, this issue; Miller et al. 2021, this issue).

Lenna Nepomnyaschy is associate professor at the Rutgers School of Social Work, United States. **Allison Dwyer Emory** is assistant professor in the Department of Sociology at the University at Buffalo, United States. **Kasey J. Eickmeyer** is a senior research methodologist at the Center for Policing Equity, United States. **Maureen R. Waller** is professor in the Department of Policy Analysis and Management at Cornell University, United States. **Daniel P. Miller** is associate professor at the Boston University School of Social Work, United States.

One important factor contributing to increasing wealth inequality is the growing accumulation of debt by low-income families (Carr and Jayadev 2015; Gibson-Davis and Percheski 2018; Saez and Zucman 2016). For these families, debt has increased in response to a series of economic changes over the last several decades, including stagnating wages, rising costs of housing, child care, education, and health care (Mishel, Gould, and Bivens 2015), and easier access to credit (Rona-Tas and Guseva 2018), often on subprime terms (Fourcade and Healy 2013). Although the debt of all households in the United States has increased, inequality in debt holdings is growing, based on the types of debt accrued and the terms under which that debt is owed (Foote, Loewenstein, and Willen 2016; Rona-Tas and Guseva 2018; Conwell and Ye 2021, this issue). This inequality mirrors growing disparities in wealth that, in turn, have important implications for growing disparities in economic security among families (Dwyer 2018) and potentially for children's well-being.

Research on the negative consequences of debt for debt-holders and their children has often focused on unsecured debt, which is not tied to any form of collateral, such as a home or car. Unsecured debt is more often shouldered by lower-income and otherwise disadvantaged groups (Dwyer 2018; Saez and Zucman 2016; Houle 2014). Although some types of debt can benefit children and their families (Gibson-Davis and Hill 2021, this issue), parents' unsecured debt may be more likely to signal economic distress, which is detrimental to children. One type of unsecured debt rarely considered in this body of work is child support arrears owed by parents (most often fathers) who have a nonresident child. These arrears include unpaid child support as well as interest, fees, and costs that can be added to the original obligation (Turetsky and Waller 2020). Like other forms of unsecured debt, child support arrears have grown substantially over the past several decades (Office of Child Support Enforcement 2018) and are largely owed by nonresident fathers whose income levels are very low (Sorensen, Sousa, and Schaner 2007).

Fathers who fall behind on child support often face legal, economic, and social sanctions, including suspension of drivers' licenses, pub-lic shaming, and incarceration. A growing body of research suggests that child support debt leads to lower employment and compliance with child support orders, less involvement with children, and worse mental health among nonresident fathers (McLeod and Gottlieb 2018; Miller and Mincy 2012; Link and Roman 2017; Turner and Waller 2016; Cancian, Heinrich, and Chung 2013; Um 2019). Thus, it is likely that child support arrears may be a particularly harmful form of debt for children. No study, however, has examined the association of child support arrears with child outcomes, or how child support arrears compare (or work in concert) with other forms of parental household debt to affect child well-being.

In this study, we examine the associations of unsecured parental debt—including both household debt and child support arrears—with socioemotional outcomes among a national sample of urban children who have a nonresident father. Given the adverse effects of unsecured debt documented in the existing literature, and that half of U.S. children will live apart from their biological fathers (Kennedy and Bumpass 2008), we focus our analysis on three types of unsecured debt that may have implications for the well-being of many U.S. children. Using longitudinal data, we model the associations of mothers' household debt, nonresident fathers' household debt, and nonresident fathers' child support arrears in middle childhood with internalizing, externalizing, and delinquent behaviors and anxiety and depression among nine- and fifteen-year-old children.

BACKGROUND

Total household debt in the United States has reached more than $14 trillion, surpassing the pre–Great Recession peak of $12.6 trillion (Federal Reserve Bank of New York 2019). Nationally, the largest sources of this debt include mortgages, auto loans, education loans, and credit card debt. Mortgages are the largest single source ($9.5 trillion) but are much more likely to be held by older individuals. Student loan debt has tripled over the last fifteen years and is now the second largest source—representing 11 percent of debt ($1.5 trillion) across all borrowers, but nearly 40 percent among those age

eighteen to twenty-nine. The total accumulated credit card debt ($930 billion) has fluctuated to a minor degree since 2008 but is more equally distributed by age of borrower (Federal Reserve Bank of New York 2019). The most recent data on family-level debt holding, which are most relevant to our work, are only available from the 2016 Survey of Consumer Finances. These data reveal that among the 44 percent of families with a credit card balance, the average debt was $5,700. In comparison, of the 20 percent of families with education loans, the average amount was $34,000 (Bricker et al. 2017).

These national figures omit key debts among many lower-income families, most notably legal debts associated with the criminal justice system and child support arrears. Surveys have largely not measured the full scope of legal debts, though existing research indicates legal fees, fines, and sanctions are widespread and increasing (Harris, Evans, and Beckett 2010), with serious negative implications for family economic security (Katzenstein and Waller 2015; Comfort 2016). More is known about the prevalence and outstanding amounts of child support arrears for lower-income families. Like student loan debt, child support arrears have grown substantially over the past several decades to more than $118 billion, with the typical obligor owing about $11,020 (Office of Child Support Enforcement 2018). Typical debt calculations may thus substantially undercount the debts held by low-SES parents, who are overrepresented in the group who owe arrears. Omitting this key source of debt in overall and household-level debt calculations poses a serious limitation for our understanding of debt holding in the United States, especially among low-SES families.

Types of Debt

Debt is often categorized into two types: secured debt, which is tied to an asset or other form of collateral (such as a home, business, or car) that can be repossessed in the case of default; and unsecured debt, which lacks such collateral and typically takes the form of credit

card debt, medical bills, student loans, legal fees, and other personal loans. Secured and unsecured debt can be further classified into prospective credit offers or retrospective debt obligations; and these distinctions provide further insight into how types of debt may contribute to inequality and differentially affect family and child well-being (Dwyer 2018). Prospective credit offers include credit cards, store cards, bank loans, and student loans, which may promote financial independence and facilitate the development of human, social, or economic capital (Dwyer 2018). However, such lines of credit are generally awarded based on the myriad of factors that contribute to a credit score (Rona-Tas and Guseva 2018) and are disproportionately made available to White and higher-income individuals and households (Dwyer 2018). Retrospective debt obligations include medical debt, legal fines and fees, government fees (such as tax penalties), past-due rent and utility bills, and child support debt. These types of debt imply punishment or accountability for past behaviors and are disproportionately borne by minority and lower-income individuals and households. Thus, because retrospective debt often involves legal, economic, or social sanctions and does not facilitate the development of human, social, or economic capital, it can have immediate and long-term impacts on child and family well-being and contribute to disparities in outcomes.

Child support arrears are a particularly salient debt for low-income fathers and their children.[1] Over the past forty years, the deteriorating economic prospects of many men at lower skill and educational levels (Ruggles 2015; Wilson 2011; Edin and Nelson 2013; Smeeding, Garfinkel, and Mincy 2011), combined with the enactment of a series of more stringent measures to collect child support payments from nonresident fathers, contributed to a dramatic growth in outstanding arrears over the period (Sorensen, Sousa, and Schaner 2007). Notably, child support obligations are often set beyond the ability of low-income fathers to pay (Turet-

1. Although both mothers and fathers can be noncustodial parents of a child and have arrears, the overwhelming majority in the United States are men (Smock and Schwartz 2020; Office of Child Support Enforcement 2018). Thus, throughout this article, we consider and refer to child support arrears among fathers.

sky 2019). Courts may set child support orders based on imputed income if fathers do not appear in court, are unemployed, or cannot produce documentation of their income; however, this practice is used much more often for lower- than higher-income fathers (Turetsky and Waller 2020). Moreover, it can be very difficult for low-income parents to modify child support orders when they are out of work or incarcerated. Arrears typically double during periods of incarceration (National Council of State Legislatures 2019) and are three times higher among fathers with a history of incarceration (Dwyer Emory et al. 2020). In addition to unpaid support owed under the terms of a child support order, arrears may also include interest, fees, Medicaid birthing costs, and retroactive support assessed for periods before child support orders are established (Heinrich, Burkhardt, and Shager 2011; Wheaton and Sorensen 2007). Thus, child support arrears are both unsecured and retrospective debt, providing the least benefit to families and potentially extracting the largest cost.

Historically, the majority of child support arrears were owed to the government to recover the cost of benefits paid to families receiving cash assistance. As welfare caseloads have declined, so has the share of arrears owed to the government (Sorensen 2014, 2019). Today, about 80 percent of this debt is owed to families (Putze 2017). Nonetheless, most states continue to withhold child support to recover these costs. Moreover, most families in the child support system participate in some type of public assistance program, and about half have incomes below 150 percent of the poverty line (Sorensen, Pashi, and Morales 2016). Thus, it is not surprising that fully 75 percent of fathers who owe arrears have less than $10,000 in annual income, and 60 percent report no income whatsoever (Arthur 2018). Fathers who accrue arrears may be subject to punitive enforcement measures, such as incarceration, suspension of drivers' and professional licenses, and seizure of assets and tax returns (Turetsky and Waller 2020), which are the same sanctions imposed on those who have legal financial obligations (court fines and fees) (Harris 2016). Data are limited on the total debt burden facing fathers who are behind on both child support arrears and fines and fees related to their criminal justice system involvement, but the cost recovery goals and enforcement tools in these two systems, as well as the group of low-income men of color who are most likely to owe both types of debt, clearly converge (Turetsky and Waller 2020).

Debt and Child Well-Being

The associations between parental debt and child well-being, like other indicators of socioeconomic status (SES), may operate through parental resources or investments and through parental stress (Duncan, Magnuson, and Votruba-Drzal 2014; Magnuson and Votruba-Drzal 2009). In addition, Christina Gibson-Davis and Heather Hill (2021, this issue) identify two other pathways through which debt, as an indicator of wealth, may be conceptualized to affect child well-being: parents' subjective financial well-being and parents' future expectations for the child. These pathways are related to the ways in which wealth (or the lack of wealth), can independently create feelings of security or insecurity and stability or instability and act as a marker of comparative social class and hierarchy.

As true of other measures of SES, the parental investment pathway suggests that greater resources allow parents to purchase goods and services that can promote children's health and development. These investments may include better neighborhoods, safer housing, higher quality childcare, better schools, developmentally rich after-school activities, toys, books, and more nutritious foods that all may contribute to better child outcomes (Berger, Paxson, and Waldfogel 2009). The parental stress pathway suggests that constrained or scarce resources in a household increase parents' financial and emotional stress, which negatively affect both parents' physical and mental health as well as parental warmth and sensitivity, leading to lower quality parenting and a less nurturing environment for children (Conger, Conger, and Martin 2010; Conger et al. 1994; Mistry et al. 2002).

The subjective financial well-being pathway reflects how parents perceive their status and circumstances in relation to others, their past experiences, and their expectations for the fu-

ture (Vera-Toscano, Ateca-Amestoy, and Serrano-Del-Rosal 2006). It also illustrates how wealth (or lack of wealth), as a potential marker of constrained resources and unrealized financial independence, may reduce parents' future orientation and dampen expectations for themselves and their children. For example, parents discouraged by high levels of debt may communicate bleaker expectations about future economic security, pessimism about access to future opportunities, or reduced life-chances to their children based on their current economic situation. These pathways may be particularly salient for children's socioemotional outcomes (Magnuson and Votruba-Drzal 2009; Gibson-Davis and Hill 2021, this issue; Miller et al. 2021, this issue).

Different types of debt may signal particular economic contexts within the household and operate differently to affect child outcomes (Conwell and Ye 2021, this issue). To the extent that debt constrains household resources, higher levels of parental debt should reduce both parents' ability to provide necessities for their families, increase parental stress, and reduce subjective financial well-being and expectations for children's future. For example, retrospective debt can force the reallocation of scarce household resources away from expenditures on items that promote health and well-being toward repayment of that debt, hindering families' economic stability and ability to respond to unexpected needs (Seefeldt 2015). In the worst cases, such debt can lead to reallocation of resources away from basic necessities, causing utility shut-offs, food shortages (Brewer 2018; Chang, Chatterjee, and Kim 2014), and evictions (Lundberg and Donnelly 2019; Desmond 2016).

Alternatively, debt may supplement family resources over the short or long term or allow parents to make investments that contribute to future wealth. As noted, when kept at manageable levels, unsecured debt offered through prospective credit offers, such as credit cards or personal loans, can provide families access to resources that allow them to smooth consumption during spells of unemployment or other negative financial shocks (Dwyer 2018; Seefeldt 2015; Babiarz, Widdows, and Yilmazer 2013). This means that parents can temporarily

provide necessities and otherwise shield children from hardships that could affect their well-being. Similarly, student loan debt allows the borrower to accumulate human capital and serves as a potential investment, and these financial obligations may be offset by returns to additional education or the promise of future returns. Although acquiring this type of debt may still lead to some parental stress, in this context it may not diminish resources to children and may increase optimism about the future and enhance future orientation. Taken together, this framework suggests that associations between unsecured household debt and children's socioemotional outcomes may be offsetting, and thus our a priori expectations are ambiguous.

Child support arrears, which are a type of both retrospective and unsecured debt, may affect child well-being through the pathways discussed as well as through changes in father involvement unique to this form of debt. As with other debts, arrears may reduce available household resources—though in different ways for custodial mothers and nonresident fathers. Evidence suggests that arrears reduce fathers' motivation to secure employment because up to 65 percent of their earnings can be withheld, further constraining resources within their households (Link and Roman 2017; Miller and Mincy 2012). If arrears are owed to the state, they are likely to affect only fathers. On the other hand, if the arrears are due to both the mother and the state (as is most often the case), they are both a source of debt in the nonresident father's household and a source of strain and resource deprivation in the mother's household. Thus, child support debt may constrain the resources available to children in both custodial mothers' and nonresident fathers' households.

Child support arrears may be a particularly harmful source of debt for parents, reducing subjective financial well-being as well as future expectations for themselves and their children. Beyond the debt itself, having child support arrears is likely to have collateral consequences for fathers and their families, some of which can further undermine their family relationships and ability to pay off these debts. Fathers who accrue arrears may lose their drivers' li-

censes, be publicly shamed through "deadbeat dads" billboards and websites, have wages garnished at high rates, or be incarcerated for nonpayment (Office of the Inspector General 2000; Roberts and Vinson 2004; Turetsky 2019; McLeod and Gottlieb 2018). Child support arrears are associated with lower employment, greater risk of incarceration, worse mental health, and lower child support payments among nonresident fathers (Miller and Mincy 2012; McLeod and Gottlieb 2018; Link and Roman 2017; Cancian, Heinrich, and Chung 2013; Um 2019). In some cases, men may be forced to rely on family members and partners to make "purge payments" on this debt to avoid immediate incarceration (Katzenstein and Waller 2015), increasing the resource strain and decreasing the subjective financial well-being that families face.

As a pathway unique to this type of debt, evidence suggests that child support arrears may also affect children by reducing nonresident fathers' involvement with them. These reductions may be the result of fathers' economic constraints, stigma around nonpayment, or weakened relationships with the mother due to possible conflict over support (Turner and Waller 2016). A robust body of research indicates that various indicators of nonresident fathers' involvement with children, including engaging in activities, involvement in school, providing material support, and close and warm relationships, are associated with improved cognitive, academic, and socioemotional outcomes for children (Nepomnyaschy, Magnuson, and Berger 2012; Choi 2010; Choi and Pyun 2014; Carlson and Magnuson 2011; Kim and Hill 2015; Adamsons and Johnson 2013; Miller et al. 2020; Gold, Edin, and Nelson 2020; Nepomnyaschy et al. 2020). Reduced father involvement with children is thus a distinct and potentially even stronger pathway through which child support debt may affect child well-being more than parental investment, lower subjective financial well-being, reduced future expectations, or increased parental stress. Unlike for the other types of parental household debt, we expect the associations of arrears with children's socioemotional well-being to be unambiguously negative.

THE EFFECTS OF HOUSEHOLD DEBT LITERATURE

Much of the research on the effects of debt on well-being focuses on physical and mental health outcomes among adults. This body of work, based on nationally representative and smaller-scale studies in the United States and in other developed countries, finds fairly consistent evidence that debt, particularly unsecured debt, is associated with worse physical health, including overall health, higher blood pressure, greater health impairment, and foregone medical care (Sweet et al. 2013; Drentea and Lavrakas 2000; Kalousova and Burgard 2013). A somewhat larger body of work finds such debt to be associated with worse mental health, including higher stress, anxiety, and anger, and more depressive symptoms and higher likelihood of depression (Berger, Collins, and Cuesta 2016; Sweet et al. 2013; Drentea and Lavrakas 2000; Drentea and Reynolds 2012, 2015; Brown, Taylor, and Wheatley Price 2005; Reading and Reynolds 2001). Only two studies examine child support debt and its effects on fathers' well-being. They find that, among nonresident fathers, arrears are associated with higher likelihood of substance abuse (Um 2019) and depression (Turner and Waller 2016; Um 2019).

Only two studies explore the associations of parental debt with children's socioemotional well-being, and both focus on parents' household debts. Based on panel data from the National Longitudinal Study of Youth 1979 (NLSY-79), they find that parents' unsecured debt, measured as credit card debt, medical debt, and money owed to businesses, individuals, or banks, but not educational debt, is associated with worse internalizing and externalizing behavior problems among children (Berger and Houle 2016, 2019). We are not aware of any studies exploring how child support debt compares with or combines with other types of parental debt to affect child well-being outcomes.

Expected Differences in Associations

The effects of debt on children's socioemotional well-being may differ by some individual and family characteristics. First, as mentioned, the negative effects of debt should be particularly pronounced for lower-income families be-

cause these families have higher levels of unsecured household debt (Rona-Tas and Guseva 2018; Dwyer 2018) and these fathers have higher child support arrears (Arthur 2018; Sorensen, Sousa, and Schaner 2007). Thus, debt should be considered not just at absolute levels, but as the burden of debt to income. Further, because Black low-income men are particularly disadvantaged in the labor market and are at much greater risk of incarceration (Western and Wildeman 2009; Pager 2003; Pate 2016; Dwyer Emory et al. 2020), and because Black families are often saddled with debt on poor credit terms and may have less access to "good" types of debt (Dwyer 2018; Rona-Tas and Guseva 2018; Conwell and Ye 2021, this issue), these associations may differ by parents' racial and ethnic background. Next, because boys and girls are likely to exhibit socioemotional problems in different ways (Hankin, Mermelstein, and Roesch 2007; Newsome et al. 2016; Rutter, Caspi, and Moffitt 2003), we expect possible differences in these associations by child sex. Finally, because debt, particularly child support debt, may accumulate over the child's life, and because older children may be more aware of and less shielded from family financial circumstances, it is possible that associations may be stronger for older children (Orr 2003; Miller et al. 2021, this issue).

Current Study

In this study, we explore the associations of parental debt with parents' reports of children's internalizing and externalizing behaviors, and children's own reports of their delinquent behaviors and anxiety or depression. We make four key contributions to the literature. First, we focus on children with nonresident fathers, given that half of children will experience this type of family form across childhood, and children in such families face substantial economic disadvantage. Second, we consider unsecured debt in the households of both custodial mothers and nonresident fathers. Third, and most important, we include child support arrears accrued by nonresident fathers as a distinct type of parental debt, not previously considered in this context. Fourth, we explore whether the associations of parental debt with child well-being are present when children are roughly

nine years old, and whether parental debt has effects six years later, when children are approximately fifteen years old. Finally, we use both mothers' reports and children's self-reports of their socioemotional well-being to capture both perspectives and to reduce potential bias in reporting. In light of these contributions, we are able to more comprehensively consider how parental debt shapes child outcomes by situating child support arrears within the broader context of household debt, a key driver of wealth inequality.

METHODS

We use longitudinal data from the Fragile Families and Child Wellbeing Study (FFCWS), which follows 4,898 children born in large U.S. cities between 1998 and 2000. The FFCWS aims to understand the circumstances and capabilities of unmarried parents, the role of fathers, the well-being of children, and how larger social and environmental contexts affect such families (Reichman et al. 2001). Births to unmarried mothers were oversampled at a 3:1 ratio, and the data are representative of such births in all U.S. cities with populations greater than two hundred thousand at that time. Mothers and available fathers were interviewed at the time of their child's birth and then followed up one, three, five, and nine years later. Fathers were interviewed regardless of whether they were living with the child and detailed information is available about fathers from mothers' surveys, even when fathers were not interviewed. At the fifteen-year follow-up, primary caregivers, a majority of whom were mothers, were interviewed but fathers who were not primary caregivers were not surveyed. Children were also interviewed at the nine- and fifteen-year surveys. The FFCWS is notable for its high response rates for unmarried fathers at the child's birth (75 percent), a group notoriously absent from most household surveys in the United States (Garfinkel, McLanahan, and Hanson 1998). The FFCWS is also unique in that it is the only study in the United States that includes measures of parents' household debt, nonresident fathers' child support arrears, and children's socioemotional well-being. These data are also ideal for the current study, because the focus on parents

with nonmarital births yields a large sample of children with nonresident fathers in lower-income families, who are more likely to bear the burden of unsecured debt and child support arrears.

Sample

This study seeks to explore the associations of parents' household debt at the nine-year follow-up survey with child outcomes at the nine- and fifteen-year follow-up surveys among children with nonresident biological fathers. We are limited to measuring debt at the nine-year wave because this is the only wave that includes both mothers' and fathers' household debt amounts. Of the 4,898 families in the baseline sample, 3,630 (74 percent) were followed up at year nine. Because our focus is on children with nonresident fathers, we further limit the sample to children living with their biological mothers all or most of the time and who have a living nonresident biological father at year nine (n = 1,914). Finally, our analyses are limited to children with valid information on behavioral outcome measures at year nine (n = 1,788) and at year fifteen (n = 1,780). We address all other item-specific missing data using full information maximum likelihood (FIML) estimation in all our analyses, though findings were very similar when we used the more conservative approach of casewise deletion for families missing information on the key independent variables.[2]

Measures

For *child socioemotional outcomes*, we measure mothers' reports of children's internalizing and externalizing behaviors, and children's self-reported anxiety or depression and delinquent behavior problems when they are approximately nine and fifteen years old. For ease of comparison across models, all child outcomes are modeled as standardized measures (mean = 0, SD = 1) in our analyses. At years nine and fifteen, mothers' reports of children's internalizing and externalizing behaviors were taken from the Child Behavioral Checklist (CBCL), a well-regarded and widely used instrument for measuring problem behavior in children (Achenbach and Rescorla 2001). Internalizing behaviors are based on thirty-one items from the anxious-depressed, withdrawn, and somatic behavior subscales at year nine (α = 0.88) and eight items from the anxious-depressed and withdrawn subscales at year fifteen (α = 0.72). Externalizing behaviors are based on thirty-six items from the aggressive and rule-breaking behavior subscales at year nine (α = 0.89) and nineteen items from these same subscales at year fifteen (α = 0.89). Mothers were asked to report whether each item is not or never true (0), somewhat or sometimes true (1), or very or often true (2) about the child. Scores were averaged across the available items with a range of 0 to 2. In supplementary models for these mother-reported outcomes, we include a measure of behavior at the prior wave.

Children's self-reported socioemotional outcomes were measured differently between the nine- and fifteen-year surveys. At year nine, children's anxiety or depression was taken from the Self-Description Questionnaire (SDQ) (Marsh 1990), which measures how children get along with others and how they feel about school. Responses of not at all true (0) to very true (3) were averaged across eight items, such as: I feel sad a lot of the time and I worry about taking tests (α = 0.78). Child-reported delinquent behaviors were based on a list of seventeen items modeled after the Things That You Have Done scale (Maumary-Gremaud 2000), such as ran away from home, and thrown rocks or bottles at people or cars. Affirmative responses were averaged

2. The largest source of missing data was information on fathers' household debt, as this is measured only from fathers' interviews. Of the 1,788 children in our nine-year analyses, 1,004 fathers were interviewed at the nine-year follow-up, and of those, 963 had valid information on household debt. An additional 141 cases have missing information on mothers' household debt. Table A1 compares characteristics of parents in the full imputed analysis sample (based on interviewed mothers at year nine) with the complete case sample (based on interviewed fathers at year nine). Samples are similar on all characteristics except that interviewed fathers were more likely to have been married to the mother at the birth of the child than those in the more inclusive sample of interviewed mothers.

across these items to create a 0:1 scale representing the proportion of behaviors reported ($\alpha = 0.70$).

At year fifteen, children's reports of their anxiety were based on six selected items from the Brief Symptom Inventory 18 (BSI 18) (Derogatis and Savitz 1999) (such as "I feel tense or keyed up," or "I feel fearful"), scored as not at all (0) to extremely (3). Self-rated depression was based on five items from the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff 1977) ("I feel sad," or "I feel life is not worth living"), with responses reverse-coded from strongly disagree (0) to strongly agree (3). Scores were averaged across these eleven items with a range of 0 to 3 ($\alpha = 0.85$). Finally, children's self-reported delinquent behaviors at year fifteen were modeled after the Add Health Wave I and Wave II In-Home Questionnaires. Possible responses to thirteen items (such as skipped school without an excuse, or taken or stolen something), were never (0), one or two times (1), three or four times (2), or more than five times (3). These scores were averaged across all items ($\alpha = 0.75$).

For *parental debt*, our independent variables of interest include debt in the mothers' household, debt in the nonresident fathers' household, and nonresident fathers' arrears. These are measured when children were approximately nine years old from mothers' and fathers' interviews. Mothers and fathers were asked whether (and how much) they (or their husband, wife, or partner) had, first, credit and store card debt and, second, student loan debt, or money owed to a bank or a lender, other than that owed for mortgage or car. These two amounts were combined and, following prior work, top-coded at the 99th percentile of the sample, or approximately $100,000 for both parents (Berger and Houle 2016).

Our primary contribution to research on parental debt is the consideration of nonresident fathers' child support arrears as another form of unsecured debt. Both mothers and fathers were asked whether the father "has any arrears on the child support that he owes or is supposed to pay to the mother or to the welfare department for unpaid monthly support or for reimbursing medical costs," and the amount of such arrears. Mothers and fathers who reported that the father did not have a legal agreement to pay child support were not asked about arrears, and these cases were coded as having no arrears. Of the approximately 1,200 mother-father pairs for whom we had information on arrears, 78 percent agreed on whether the father had arrears, and among those in agreement, the correlation in reported amounts was 0.68.[3] Thus, to minimize measurement error and maximize sample size, we first took the maximum of child support arrears reported by either mothers or fathers, and then used mothers' reports if fathers' reports were missing. A number of sensitivity checks for reports of fathers' arrears were conducted, including using mothers' reports only, fathers' reports only, and an average of mothers' and fathers' reports (rather than the maximum). The patterns of results remained unchanged.

We measure parents' household debt and nonresident fathers' arrears in several ways, including the ratio of each type of debt to household income in the respective parent's household and binary measures for whether debt to income ratios were greater than or equal to 0.25 to indicate high debt levels for mothers' household debt, fathers' household debt, and fathers' arrears. We also created a binary measure for whether mothers had any household debt, and a mutually exclusive categorical variable describing fathers' joint holding of household debt and child support arrears: household debt only, arrears only, both, or neither.[4]

For *covariates*, we control for a rich set of individual and family characteristics that may confound the association between debt and child behavior. Child characteristics include the child's sex (male), whether born low birth weight (< 2,500 grams), and age at the time of

3. Overall, mothers were more likely to report that fathers had any arrears and reported higher dollar amounts of arrears.

4. In supplementary models, we also considered absolute levels of debt, transforming reports of the raw amounts of debt to inverse hyperbolic sines, to account for outliers and skewness.

outcome (year nine or fifteen).[5] Parents' sociodemographic characteristics measured at baseline include: whether married at child's birth; both parents' nativity; maternal race/ethnicity (non-Hispanic White, non-Hispanic Black, Hispanic, and other) and whether the father is of the same race-ethnicity (to reduce multicollinearity between parents' demographics); maternal education (less than high school, high school, more than high school) and whether father's education differed from mother; mothers' age (in years) and father's age minus mother's age; whether the child was mothers' or fathers' first born; and whether Medicaid paid for child's birth. To further control for parents' economic capability and potential selection into debt, we include indicators for whether mothers and fathers met criteria for depression at the one-year survey, based on the Composite International Diagnostic Interview (CIDI) (Kessler et al. 1998).[6] Finally, we include characteristics of mothers' and fathers' households at the nine-year survey: household income (logged to account for outliers), whether either parent was currently living with a new partner, and the number of children in each parent's household.

In supplementary models, we also include two variables that may be particularly salient for fathers' accumulation of arrears but are not included in our main models because they likely lie on the causal pathway connecting fathers' child support debt and child outcomes. These variables include fathers' incarceration between the child's birth and the nine-year survey, and mothers' reports of the quality of her relationship with him at year nine, coded as good (excellent, very good, good), poor (fair, poor), or no relationship.

Analytic Strategy

We first provide a rich descriptive portrait of the families in our sample, focusing on their overall levels of debt, the distribution of debt by socioeconomic status, and the degree of overlap between fathers with household debt and child support arrears. We next estimate a series of linear regression models to examine associations between each type of parental debt (mothers' household debt, fathers' household debt, and fathers' arrears) and each of the four child outcomes (at year nine and year fifteen), controlling for all the variables discussed. Our analyses attempt to address two primary challenges that could bias results: missing data and potential selection of parents into debt.

First, as discussed, fathers' household debt (other than arrears) is only available from fathers' interviews. A much larger proportion of mothers were interviewed than fathers, and the nonresident fathers interviewed are likely to be positively selected on unmeasured characteristics (Teitler, Reichman, and Sprachman 2003). In addition, a number of covariates measuring fathers' characteristics have missing information if fathers were not interviewed or if mothers did not know or refused to answer. We address these missing data problems by estimating full information maximum likelihood models using the structural equation modeling suite of commands in Stata 16. Unlike multiple imputation, another common approach to missing data, FIML is a model driven approach that uses maximum likelihood methods to fill in missing values. FIML shares many assumptions with multiple imputation, and previous research suggests that the two methods yield comparable results (Collins 2001; Johnson and Young 2011). Models estimating associations between parental debt and children's socioemotional outcomes only for the sample of interviewed fathers (N = 824) yielded identical results to those in the FIML analysis sample (not shown). Finally, we estimate a number of robustness checks to take account of potential selection of parents into debt, particularly fa-

thers' child support arrears. All analyses are performed using Stata 16 and are based on unweighted data.[7]

RESULTS

Table 1 presents descriptive statistics of child socioemotional outcomes and all covariates. The unstandardized measures of child behavior indicate that mothers reported low average levels of internalizing and externalizing behavior problems for their children at years nine and fifteen. Similarly, average levels of child-reported depression and anxiety fell toward the bottom of their possible ranges. On average, children in the sample endorsed only 8 percent of the seventeen delinquent behaviors they were asked about at year nine and reported limited involvement in delinquent acts at year fifteen.

Reflecting the focus of our study on children with a nonresident father and the design of the FFCWS, our sample is more socioeconomically disadvantaged than nationally representative samples of families.[8] At the birth of the child, only 10 percent of mothers were married to the father of the focal child (another 35 percent were not married, but cohabiting, not shown). The majority of mothers were non-White (85 percent), mostly non-Hispanic Black (62 percent); 70 percent had a high school degree or less. At the birth of the child, mothers were approximately twenty-four years old on average and most of the births (70 percent) were paid for through Medicaid. The child was the first birth for fewer than half of both mothers and

fathers (44 percent and 41 percent, respectively). Approximately one year after the child's birth, 18 percent of mothers and 15 percent of fathers met the criteria for depression. At the nine-year interview, 35 percent of mothers but only 6 percent of fathers were married to or cohabiting with a new partner; mothers reported approximately three children in their households and fathers reported only one. These latter two differences are of particular importance for interpreting parental debt in our study because both parents' incomes and unsecured debt amounts are reported at the household level, including the income and debts of their cohabiting partners. Nearly one-third of fathers had some incarceration experience between the child's birth and year nine. Finally, one-third of mothers reported good relationships with the father, 42 percent reported poor relationships, and 25 percent had no relationship with him.

Descriptive statistics for each measure of parental debt by each parents' household income tercile at the nine-year survey are shown in table 2. The tercile ranges differ for mothers and fathers, as fathers reported higher overall income and higher income within each tercile despite being less likely to share a household with a partner. This suggests that mothers in our sample are economically disadvantaged relative to both a national sample and their children's fathers, regardless of whether they were living with another potential earner.

More than half (55 percent) of mothers reported any household debt, with an average of

---

7. We do not apply weights in our multivariate models for several reasons. First, weights in the FF survey are cross-sectional and constructed based on the reporter (mother, father, child, couple) and the wave. Because we use data from mothers, fathers, and children, and data from multiple waves, weights are not available that are suited to our analyses. Second, as shown in table A1, which compares descriptive statistics between the weighted and unweighted samples, the most important difference is parents' marital status at birth because this was the primary sample selection criterion. All of our models control for this factor. Finally, because our sample focuses on children with nonresident fathers, it is likely that weights (which are created to exaggerate the importance of a few observations in order to generalize the sample to the population) are likely to bias multivariate results.

8. Table A1 presents descriptive statistics applying the nine-year city-level weights (for mothers for the analysis sample and for fathers for the interviewed father subsample) which are designed to make the sample representative of births in each of the cities at the year of the birth and take account of attrition. Reflective of the design of the study, parents in our sample are much less likely to have been married at the birth of the child (10 percent versus 21 percent, respectively). Other differences are much less stark. Most important, differences in whether fathers were incarcerated between the birth and year nine interview (a key measure of disadvantage and selection into arrears) are miniscule (32 percent versus 30 percent) between the unweighted and weighted samples.

Table 1. Descriptive Statistics of Child Behavior Outcomes and Covariates for Full Analysis Sample of Interviewed Mothers

	Percent or Mean	SD
Year 9 child outcomes, N = 1,788		
Mother-reported internalizing behaviors (0–2)	0.16	0.18
Mother-reported externalizing behaviors (0–2)	0.26	0.28
Child-reported depression/anxiety (0–3)	1.22	0.7
Child-reported delinquent behaviors (0–1)	0.08	0.11
Year 15 child outcomes, N = 1,780		
Mother-reported internalizing behaviors (0–2)	0.28	0.30
Mother-reported externalizing behaviors (0–2)	0.27	0.29
Child-reported depression/anxiety (0–3)	0.82	0.57
Child-reported delinquent behaviors (0–3)	0.12	0.20
Covariates, N = 1,788		
Child characteristics		
Male	51	
Low birthweight	16	
Age at year-9 interview (years)	9.28	0.37
Age at year-15 interview (years)	15.56	0.62
Baseline sociodemographics		
Mother and father married at birth	10	
Mother's race-ethnicity		
White, non-Hispanic	14	
Black, non-Hispanic	62	
Hispanic	21	
Other	3	
Mother and father are of same race/ethnicity	82	
Mother was U.S. born	93	
Father was U.S. born	91	
Mother's education at birth		
Less than high school	35	
High school diploma	35	
Some college or more	30	
Mother and father have same education	47	
Mother's age at birth (years)	23.81	5.47
Father's age minus mother's at birth	3.44	3.29
Child's birth was covered by Medicaid	70	
Focal child was mother's first born	44	
Focal child was father's first born	41	
Parents' capability		
Mother depressed (1 year)	18	
Father depressed (1 year)	15	
Household characteristics		
Mother's household income (year 9)	31,408	29,496
Father's household income (year 9)	38,029	35,637
Mother has new spouse or partner (year 9)	35	
Father has new spouse or partner (year 9)	6	
Number of children in mother's household (year 9)	2.76	1.36
Number of children in father's household (year 9)	0.99	1.34
Fathers' characteristics related to arrears, supplementary models only		
Incarcerated b/w birth and year 9	32	
Relationship quality with mother (year 9)		
Good relationship (good, very good, excellent)	33	
Poor relationship (poor, fair)	42	
No relationship	25	

Source: Authors' calculations based on Fragile Families and Child Wellbeing Study data.
Note: SD = standard deviation.

Table 2. Descriptive Statistics of Mothers' and Fathers' Household Debt and Fathers' Arrears by Income Tercile at Year Nine

		Income Terciles		
	All Families	Bottom	Middle	Top
Panel A. Mothers, N = 1,788				
Mother's household income ($)	31,408	8,732	24,638	60,905
Range of income ($)	0–400,000	0–16,792	16,800–34,457	34,679–400,000
Mothers' household debt				
Any household debt (%)	55	44	52*	69*
Total household debt ($)	6853	4913	5268	10431*
Household debt to income ratio	0.19	0.25	0.17*	0.16*
Household debt >25% of income (%)	25	30	24*	20*
Panel B. Fathers, N = 993				
Father's household income ($)	38,982	9,376	32,771	75,337
Range of income ($)	0–385,000	0–22,000	22,026–45,000	45,241–385,000
Fathers' household debt				
Any household debt (%)	43	29	44*	55*
Total household debt ($)	4,809	2,821	4,128	7,576*
Household debt to income ratio	0.11	0.13	0.11	0.10
Household debt >= 25% of income (%)	14	16	14	13
Fathers' arrears				
Any arrears (%)	45	52	43*	38*
Total arrears ($)	4,745	6,191	4,347*	3,677*
Arrears to income ratio	0.18	0.35	0.13*	0.05*
Arrears >= 25% of income (%)	23	41	19*	8*
Arrears and debt (%)				
Household debt only	26	14	26*	37*
Arrears only	28	37	24*	21*
Both	17	15	19	17
Neither	30	34	31	24*

Source: Authors' calculations based on Fragile Families and Child Wellbeing Study data.
Note: Numbers are percentages or means. Tests of significance indicate significant differences between the lowest income tercile (the reference group) and the two others.
*$p < .05$

$6,853. Both the proportion of mothers with debt and the average amounts increased at higher levels of income ($4,913 versus $10,431 in the bottom and top tercile, respectively). On the other hand, mothers' debt to income ratio decreased with rising income, from 0.25 to 0.16 in the bottom to top tercile. Similarly, the proportion of mothers reporting high (>= 0.25) debt to income ratios also declined as income increased (from 30 percent in the bottom tercile to 20 percent in the top). Fewer fathers reported

any household debt (43 percent) and fathers had lower debt on average ($4,809) than mothers. As with mothers, both the proportion with debt and the amount of debt increased at higher levels of income (from $2,821 to $7,576, in the bottom and top tercile, respectively). Because fathers' incomes were higher and unsecured debts lower, their debt to income ratios (and the proportions reporting high debts levels) were much lower than those of all mothers and across income terciles.[9]

9. These average amounts of parental household debt in our study are difficult to compare with other studies because we focus on debt in two households (the resident mother and nonresident father) and a more disad-

The next set of statistics focuses on fathers' child support arrears and reveals a very different picture. First, 45 percent of fathers have arrears, with an average of $4,745, which is nearly equal to their average unsecured debt. Second, unlike household debt, the proportion with arrears and the absolute amount of arrears are much higher at lower levels than higher levels of income (52 percent versus 38 percent and $6,191 versus $3,677 in the bottom and top tercile, respectively). Not surprisingly then, arrears to income ratios decrease substantially as income increases, representing 0.35 and only 0.05 of income in the lowest and highest tercile, respectively. Further, fully 41 percent of fathers in the lowest tercile report that their arrears are at least 25 percent of income and only 8 percent of those in the top tercile are in this situation. Thus, taking account of fathers' unsecured household debt as well as child support arrears, which have not been previously measured, reveals that these fathers have much higher overall debt burden than mothers and that prior studies have substantially undercounted men's unsecured debts (by half or more), and that both of these things are particularly true for the lowest-income fathers.

Another important takeaway from these figures is that household debt (for mothers and fathers) is associated with higher incomes because these families likely have greater access to credit cards and loans (the only types of household debt measured here), whereas child support arrears are associated with lower income among fathers. The last rows of table 2 present the overlap of arrears and household debt among nonresident fathers and highlight this point further. Fathers in the bottom tercile are much more likely to have just arrears but no household debt than those in the top (37 percent versus 21 percent), whereas those in the top income tercile are much more likely to have household debt but no arrears than those in the bottom (37 percent versus 14 percent),

and only 17 percent of all fathers have both types.

Table 3 delves even deeper into the characteristics of fathers who hold different types of debt. Comparing columns 1 (household debt, no arrears) and 2 (arrears, no household debt) reveals that fathers with only arrears have lower levels of education, are less likely to be White, were much less likely to have been married at the birth of the child, are three times more likely to be poor (42 percent versus 14 percent), are more than twice as likely to have been incarcerated (42 percent versus 18 percent), and have lower quality relationships with the mother than those with only household debt. These figures further confirm findings from the prior table that fathers with household debt but not arrears are more socioeconomically advantaged not just than fathers with arrears, but even more so than fathers with neither type of debt (column 4).

Multivariate Results

Table 4 presents the associations of parental debt at year nine with child socioemotional outcomes, reported by mothers and self-reported, when children are nine (first set of four columns) and fifteen years old (second set of columns). All outcomes are standardized (mean = 0, SD = 1), and thus coefficients represent standard deviation changes for each dependent variable. Each column in each panel presents results from a separate regression model that includes all the covariates discussed, though only the coefficients of interest are presented for parsimony (full models in table A2).

Panel A examines the amount of parental debt, measured as debt to income ratio, scaled from zero (0 percent of income) to one (debt is 100 percent or more of income). Among nine-year-old children, we observe no associations of the level of mothers' household debt or fathers' household debt with any outcomes. However, higher arrears to income ratio is associ-

---

vantaged group of children with a nonresident father. Debt is also measured differently across data sets and studies, and across different time horizons and periods. Nonetheless, our estimate of parents' total average household debt ($12,000) is quite close to those of families with young children in the Panel Study of Income Dynamics ($14,000) (Michelmore and Lopoo 2021, this issue), but higher than estimates of families with children in the Survey of Consumer Finances from 1986 to 2016 ($9,000) (Bandelj and Grigoryeva 2021, this issue), and higher than those of families with children in the NLSY ($5,000) (Berger and Houle 2016).

Table 3. Descriptive Characteristics of Interviewed Fathers by Presence of Household Debt and Arrears, N = 993

Interviewed Fathers' Characteristics	Types of Fathers' Debt Holdings			
	Household Debt Only	Arrears Only	Both	Neither
Education				
Less than high school	21	43*	23	41*
High school	37	40	39	42
More than high school	42	16*	38	17*
Race-ethnicity				
White, non-Hispanic	19	8*	16	9*
Black non-Hispanic	60	70*	67	69*
Hispanic	19	19	15	20
Other	3	4	2	2
Age at child's birth (years)	26.7	25.8	25.3*	26.8
Born in the United States	92	98*	95	92
Relationship at birth				
Married	17	9*	9*	11*
Cohabiting	39	35	37	43
Nonresidential	44	57*	54*	46
Child is father's first	50	39*	42	42
Medicaid paid for birth	62	70*	61	73*
Depressed at year 1	15	15	17	23
Poor at year 9	14	42*	22*	31*
Has new partner (year 9)	10	4*	4*	6*
Number of kids in household (year 9)	1.0	1.0	1.2	0.9
Incarcerated since birth	18	42*	33*	32*
Relationship quality with mother (year 9)				
Good	53	31*	26*	52
Poor	39	52*	63*	36
No relationship	7	17*	11	12
N	255	274	168	296
Percent of sample	26	28	17	30

Source: Authors' calculations based on Fragile Families and Child Wellbeing Study data.
Note: All figures in table are percentages except where indicated. Significance tests indicate significant differences between those with household debts only (reference group) and all other groups
*$p < .05$

ated with worse externalizing behaviors and child's self-reported anxiety or depression, but the latter association is just shy of conventional statistical significance ($p = .051$). Among fifteen-year-old children, consistent with the results in the prior panel, fathers' higher arrears to income ratio is associated with worse internalizing and externalizing behaviors and anxiety or depression. In addition, fathers' higher house-hold debt to income ratio is associated with more delinquent behaviors.

In panel B, we examine the associations of parents' high debt to income ratios (>= 0.25) with children's socioemotional outcomes. In these models, neither mothers' nor fathers' high household debt burden is associated with any outcome among nine- or fifteen-year-old children. Among nine-year-olds, nonresident

Table 4. Mothers' Household Debt, Fathers' Household Debt, Fathers' Arrears, and Child Outcomes at Year 9 and 15

	Outcomes at Age 9, N = 1788				Outcomes at Age 15, N = 1780			
	Mother-Reported		Child-Reported		Mother-Reported		Child-Reported	
	Internalizing Behaviors	Externalizing Behaviors	Anxiety or Depression	Delinquent Behaviors	Internalizing Behaviors	Externalizing Behaviors	Anxiety or Depression	Delinquent Behaviors
Panel A. Parents' debt to income ratios (0–1)								
Mothers' household debt	0.07	-0.01	0.002	0.06	0.040	0.00	-0.090	-0.03
	(0.88)	(0.10)	(0.02)	(0.72)	(0.46)	(0.04)	(1.07)	(0.38)
Fathers' household debt	-0.12	0.06	0.11	0.05	0.06	0.07	0.15	0.32*
	(0.87)	(0.44)	(0.86)	(0.40)	(0.47)	(0.54)	(1.19)	(2.28)
Fathers' arrears	0.16	0.23*	0.20*	0.20	0.47***	0.48***	0.26*	0.00
	(1.47)	(2.20)	(1.95)	(1.89)	(4.66)	(4.57)	(2.52)	(0.00)
Panel B. Parents have high (>= 0.25) debt to income ratios								
Mothers' household debt	0.04	0.03	-0.01	0.03	0.03	-0.02	-0.02	-0.01
	(0.72)	(0.48)	(0.15)	(0.58)	(0.60)	(0.34)	(0.40)	(0.19)
Fathers' household debt	0.01	0.05	0.09	0.09	0.07	0.01	0.08	0.16
	(0.14)	(0.49)	(1.04)	(0.93)	(0.71)	(0.14)	(0.84)	(1.58)
Fathers' arrears	0.07	0.11	0.17*	0.12	0.31***	0.27***	0.22**	-0.04
	(0.87)	(1.45)	(2.31)	(1.54)	(3.93)	(3.37)	(2.81)	(0.42)

Source: Authors' calculations based on Fragile Families and Child Wellbeing Study data.

Note: Coefficients in each panel are from one model (for each outcome) controlling for all covariates from table 1. Estimates are from FIML models. All outcomes are standardized (mean = 0, SD = 1). Figures in table are linear regression coefficients with z-statistics in parentheses.

*p < .05; **p < .01; ***p < .001

fathers' high arrears burden is associated with 17 percent standard deviation increase in child-reported anxiety or depression. Among fifteen-year-olds, consistent with the pattern of results in the prior panel, high arrears burden among nonresident fathers is associated with 31 percent, 27 percent, and 22 percent standard deviation increases in mother-reported internalizing and externalizing behaviors and child-reported anxiety or depression, respectively. To contextualize these results, we can compare them with the coefficients for mothers' depression, a factor that is particularly relevant for children's socioemotional well-being. Holding all else constant (full models in table A2), children of mothers who met criteria for depression had 32 percent, 18 percent, and 19 percent standard deviation higher internalizing and externalizing behaviors and anxiety or depression, respectively. Thus, the associations of having a father with high child support arrears are comparable to or greater than those of having a mother with depression.

To summarize results so far, we find consistent evidence, particularly among fifteen-year-old children, that nonresident fathers' arrears, but not other types of parental debt, are associated with worse mother-reported internalizing and externalizing behaviors and child-reported anxiety or depression, but not with child-reported delinquent behaviors. We find little evidence of any association of mothers' or fathers' household debt or household debt burden with child outcomes. These results are robust to alternative measures of debt, including when debts were estimated as absolute amounts (transformed to inverse hyperbolic sines), when each type of parental debt was entered in a separate model (not including other measures of debt), and when we used either mothers' or fathers' reports of his child support debt.

Finally, we explored differences in these associations by racial and ethnic background of parents and by child sex. Because our sample is overwhelmingly non-Hispanic Black (62 percent), we estimated interactions and stratified models for Black versus non-Black parents. No interactions were statistically significant and no pattern of results by either parent race or child sex was observed.

Robustness Checks

We next estimate a number of models to test the robustness of the findings, paying particular attention to fathers' selection into having child support arrears, and focusing on internalizing and externalizing behavior problems among fifteen-year-old children (table 5). Because fathers' incarceration can both be a cause and a consequence of child support arrears, we estimate models controlling for fathers' incarceration (between the child's birth and year nine) and only for the sample of fathers who were not incarcerated. Similarly, we include a control for parents' relationship quality because conflict between parents can also be both a cause and consequence of arrears. Additionally, both of these factors may be markers of more challenging and complex family processes and dynamics, yet because they may also be potential pathways between fathers' child support debt and child outcomes, we do not include them in our primary models. We further attempt to address selection into child support arrears by including a measure of child behavior from the prior wave, estimating models only for those who have any arrears, and including inverse probability of treatment weights that take account of selection into any arrears on observed characteristics. Results from table 5 indicate that the strong associations of nonresident fathers' child support arrears with worse socioemotional outcomes among fifteen-year-olds remain robust across all these model specifications.

DISCUSSION

Mirroring disparities in wealth accumulation, household debt varies substantially by family socioeconomic status in the United States. In this study, we examine whether growing inequality in parental debt has implications for child well-being by modeling associations between three distinct types of parental debt and children's socioemotional outcomes. Our study makes a number of contributions to the small body of research in this area. First, we focus on children with nonresident fathers, a particularly common family form among lower-SES families. Doing so enables us to consider unsecured debt among parents living in separate households. We also examine nonresident fa-

Table 5. Robustness Checks of Associations of Parental Debt with Behavioral Problems Among Fifteen-Year-Old Children

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Panel A. Internalizing behaviors (std)							
Mothers' household debt to income ratio (0–1)	0.04	0.04	0.03	0.03	0.05	-0.08	
	(0.46)	(0.47)	(0.43)	(0.32)	(0.49)	(0.65)	
Fathers' household debt to income ratio (0–1)	0.06	0.07	0.06	0.05	0.12	0.12	
	(0.47)	(0.50)	(0.43)	(0.39)	(0.79)	(0.62)	
Fathers arrears to income ratio (0–1)	0.47***	0.47***	0.45***	.45***	0.55***	0.40**	
	(4.66)	(4.57)	(4.28)	(4.34)	(4.19)	(2.62)	
Any arrears							0.18**
							(2.52)
Panel B. Externalizing behaviors (std)							
Mothers' household debt to income ratio (0–1)	0.003	0.004	0.001	0.02	-0.003	-0.11	
	(0.04)	(0.05)	(0.02)	(0.32)	(0.03)	(0.79)	
Fathers' household debt to income ratio (0–1)	0.07	0.080	0.060	0.00	0.01	0.04	
	(0.54)	(0.60)	(0.47)	(0.00)	(0.06)	(0.19)	
Fathers arrears to income ratio (0–1)	0.48***	0.47***	0.42***	0.32**	0.47**	0.41**	
	(4.57)	(4.44)	(3.87)	(3.22)	(3.43)	(2.64)	
Any arrears							0.15*
							(2.08)
N	1,780	1,780	1,780	1,780	1,206	706	824

Source: Authors' calculations based on Fragile Families and Child Wellbeing Study data.

Note: Coefficients in each column are from one model (for each outcome/panel) controlling for all covariates from table 1. Model 1: base model from table 4. Model 2: Add control for fathers' incarceration to model 1. Model 3: Add control for parents' relationship quality to model 1. Model 4: Add control for child behavior from prior wave to model 1 (lagged dependent variable). Model 5: Limit sample to fathers without incarceration history. Model 6: Limit sample to fathers who have any arrears. Model 7: Include inverse probability of treatment weights for any arrears, based on sample of interviewed fathers. Figures in table are linear regression coefficients with z-statistics in parentheses.

*p < .05; **p < .01; ***p < .001

thers' unsecured debt more comprehensively than prior studies by considering their child support arrears. Finally, we explore whether these associations are only present in middle childhood or whether they extend longer term, into adolescence. Because more than half of children in the United States will live apart from one of their parents at some point during childhood, it is crucial to understand how debt accumulation contributes to intergenerational inequality in these families (Kennedy and Bumpass 2008; U.S. Census Bureau 2020). A key finding of our analyses, consistent with that of Conwell and Ye (2021, this issue), is that the type of household debt matters for children's outcomes. We find no association, in any model, of mothers' household debt with child outcomes, and very little evidence that equivalent measures of nonresident fathers' household debt were associated with child outcomes even when debt to income burdens were high. On the other hand, across numerous measures and model specifications, nonresident fathers' child support arrears were consistently associated with worse child outcomes.

Our finding that debt from credit cards or loans may have little impact on child well-being runs counter to two studies that have linked such unsecured debts to worse child behavior (Berger and Houle 2016, 2019). Several explanations for this inconsistency are possible. First, in those studies, educational debt was modeled separately from other forms of unsecured household debt, and educational debt had no association or a negative association (in some models) with child behavior problems. We are not able to separate these types of debt in this study, and thus, as we hypothesized, there may be offsetting effects of these types of debt leading to our null findings. Second, whereas these two studies relied on nationally representative data from the NLSY, our sample consists of children in urban areas, who were relatively disadvantaged at the time of their birth, and who have nonresident biological fathers—family types commonly undercounted in national data. Studies have documented economic survival and parenting strategies in poor families of color that contribute to their resilience (Stack 1975; Edin and Shaefer 2015; Seefeldt 2015). Low-income families may be able to buf-

fer children from stress and resource loss better than more affluent households. This pattern of results among a more disadvantaged and yet quite prevalent group of children is a key contribution of our study. Finally, research has not accounted for debt in the form of child support arrears, which we hypothesized and which our results confirm may be a particularly pernicious type of parental debt. At a minimum, our results suggest that future surveys on household debt should inquire specifically about child support arrears. They also underscore the importance of including nonresident fathers in household surveys because their economic situation is highly relevant to child outcomes.

We found that child support arrears represent a very large proportion of debt held by fathers with nonresident children. Previous studies have therefore likely substantially underestimated the overall debt burden in all families with children, particularly for the lowest-income families. Consistent with national data, we find that fathers with the fewest economic resources owe the largest amount of arrears and face an average debt to income ratio well over 0.25, a high-burden threshold.

Moreover, our results indicate that high child support arrears burdens are associated with much worse socioemotional outcomes among children, with effect sizes in the range of 20 percent to 30 percent of a standard deviation, associations comparable to those for maternal depression in our results. While parents' household debts and child support arrears are both considered unsecured debts, there are important distinctions in these types of debt that have implications for child well-being. Parents' household debt (from credit cards, bank loans, or student loans) likely represent offers of prospective credit that may facilitate the development of human, social, or economic capital, and may enable parents to access resources and smooth consumption during periods of economic instability. Child support arrears, on the other hand, are a type of retrospective debt obligation that carries economic, social, and legal sanctions that may be more harmful to children. Child support arrears can lead to punitive enforcement actions like license suspension and incarceration, which undermine fathers' ability to work, pay off debts, and spend time

with children; can lead to more conflict in the coparenting relationship, less reliable cash and noncash contributions from fathers, and less involvement with children; cannot be discharged by filing for bankruptcy; and can be extremely difficult for the lowest-income parents to ever repay and thus persist and accumulate throughout childhood. In addition, the parents most affected by arrears, as shown in our study, are more disadvantaged than those who accrue other forms of household debt measured in the survey. Not only are these parents unlikely to have access to credit cards and loans, which are necessary precursors for these other forms of debt, but having arrears can also make them subsequently ineligible to obtain credit, because arrears decrease credit scores (New York State 2020).

The robustness of our results across multiple reporters and multiple sensitivity analyses builds further confidence that these findings reflect true differences in behavior rather than differences in perception alone. We find strong and robust associations of fathers' arrears with worse mother-reported internalizing and externalizing behaviors when children are fifteen, and worse child-reported anxiety or depression when children are nine and fifteen. This is an important contribution to this literature, given that the theoretical pathways through which arrears may affect children—parental stress, future expectations, and subjective financial well-being—may also bias mothers' perceptions of their child's behavior. Finally, we find stronger associations of nonresident fathers' arrears among fifteen-year-olds than among nine-year-olds. As discussed, because arrears are high relative to their incomes and accrue over time, many low-income fathers are unlikely to ever pay them off. The documented harmful effects of arrears on fathers' well-being and ability to be involved with their children likely also accumulate over the child's life, potentially leading to increased harm as they age. Children also become more aware of household finances as they age, and so older children may internalize the stress of family financial strain to a larger degree than younger children (Miller et al. 2021, this issue). In addition, older children may be called upon to take greater responsibilities in the household by working or caring for younger

children, which can also have a negative impact on socioemotional well-being.

Limitations

The FFCWS is uniquely suited to explore the associations of parental debt, especially non-resident fathers' child support arrears, and child outcomes. However, our study is subject to several limitations. First, child support arrears measures are available only for the nonresident father of the focal child. More than a third of the mothers in our sample at year nine are living with a new partner, and these new partners may also owe child support to children in other households. These debts are not measured in the FFCWS data, likely underestimating the overall debt burden in the mother's household, which may account for the null associations between mothers' household debts and child outcomes. Additionally, nonresident fathers' child support arrears are only reported for the focal child. National estimates suggest that nearly 20 percent of all fathers and between 40 and 50 percent of more disadvantaged fathers have multiple-partner fertility (Guzzo 2014; Cancian and Meyer 2005), and it is likely that many of these fathers owe child support to other children living either in the mother's household or in other households. Moreover, mothers and fathers may not know whether or how much child support arrears are owed, as suggested by the substantial disagreement between mothers' and fathers' reports of fathers' arrears in our data. We find that mothers report higher arrears than fathers do, which might suggest an overestimate of his arrears to the current child; however, given all these scenarios, it is likely that arrears owed to all children are substantially underestimated. Thus, although robust to alternative specifications of arrears, our results are likely a conservative estimate of the association of child support arrears and children's socioemotional outcomes.

To date, social surveys have generally failed to collect comprehensive and detailed information on debt (Dwyer 2018). Likewise, the FFCWS does not capture all types of debt that families may accrue or the accumulation of debt over time. Legal fines and fees related to parents' criminal justice system involvement, medical or utility bills, and informal loans may be of

particular consequence for these families (Rona-Tas and Guseva 2018; Harris 2016; Dwyer 2018) but are not measured in our data. We also cannot capture household debts at earlier years in the child's life. It is likely that the ill effects of parental debt may be cumulative, given that children live in persistently indebted households or begin in later childhood to experience constrained household finances in service of debt rather than smoothed consumption (Seefeldt 2015). Our study makes a notable contribution by taking advantage of a unique source to consider child support debt, but future data collection efforts should more comprehensively measure debt among low-SES families, paying specific attention to debt among resident and nonresident parents. Next, as with all observational data, our models may not fully account for unobserved factors that can lead to both more debt and worse child outcomes.

Finally, nonresident fathers' household debts are available only from interviewed fathers. This means that we can only capture these fathers' debts at one interview year (year nine), as only primary caregivers (largely mothers) were interviewed at year fifteen, and prior waves do not include debt measures. Although FIML models take into account the relationships between variables to estimate associations based on the full sample of interviewed mothers, we may still be capturing a conservative estimate of these associations.

Despite these limitations, our study contributes important new evidence on the effects of parental debt for child well-being and affirms the importance of distinguishing "good" from "bad" types of debt (Conwell and Ye 2021, this issue). Our results point to large and robust negative associations of nonresident fathers' arrears for children's socioemotional well-being in the immediate term during middle childhood and extending longer term into adolescence when these behaviors may begin to have compounding effects for the transition to adulthood. Along with prior research pointing to the adverse consequences of child support arrears for fathers' employment, mental health, involvement with children, formal and in-kind support, and coparenting, our study shows that this damage extends to their children's well-being. Consistent with the conceptual framework that Gibson-Davis and Hill lay out in this issue, child support arrears can reduce fathers' ability to invest in their children, increase parental stress and family conflict, and reduce fathers' subjective well-being and future expectations for children, which can all negatively impact children's socioemotional well-being.

Our results point to the need to consider policies to reduce child support arrears among men with nonresident children. Previous research highlights a number of policies and practices that contribute to the high and uncollectable arrears that fathers face, such as setting orders based on imputed income, charging child support retroactively, charging high interest on arrears, and the difficulty of modifying child support orders during periods of unemployment or incarceration (Turetsky 2019). Such punitive policies combined with aggressive enforcement actions like license suspension and incarceration do not increase the likelihood that fathers will pay child support, but only add to their debt burden (Turetsky and Waller 2020). In the end, this high debt burden further reduces low-income fathers' ability to pay and likelihood of paying support as they go forward (Cancian, Heinrich, and Chung 2013). Results from our study suggest that innovative policy reforms (ASCEND 2020) aimed at reducing the likelihood that low-income men accrue arrears and reducing already accrued arrears may be beneficial for child well-being.

Table A1. Comparison of Imputed Analysis Sample of Interviewed Mothers, Interviewed Fathers Subsample, and Both with Nine-Year City Weights Applied

	Mother Sample		Father Subsample	
	Unweighted	Weighted	Unweighted	Weighted
Father's education				
Less than high school	36.7	35.7	33.6	32.1
High school	39.6	38.9	40.0	40.7
More than high school	23.7	25.4	26.5	27.2
Father's race-ethnicity				
White, non-Hispanic	10.9	13.9	12.6	14.8
Black, non-Hispanic	64.3	58.7	66.1	62.3
Hispanic	21.6	24.7	18.3	20.4
Other	3.2	2.7	3.1	2.5
Father's age at birth (years)	26.3	26.8	26.3	26.6
Relationship at birth				
Married	9.5	20.7	11.2	21.4
Cohabiting	34.4	29.8	39.0	34.2
Nonresidential	56.1	49.5	49.8	44.4
Incarcerated since birth	31.9	31.2	31.8	29.9
Mother's race-ethnicity				
White, non-Hispanic	14.1	16.3	15.0	16.9
Black non-Hispanic	62.3	56.7	62.9	59.0
Hispanic	21.0	23.9	19.2	20.4
Other	2.6	3.1	3.0	3.8
Mother's education				
Less than high school	34.7	34.9	31.6	31.1
High school	35.4	36.7	34.9	37.2
More than high school	29.9	28.4	33.4	31.7
Child is male	50.7	51.1	49.1	51.0
Child was low birth weight	11.1	11.1	11.2	10.9
Medicaid birth	70.1	67.6	68.1	64.8
N	1,788	1,788	949	949

Source: Authors' calculations based on Fragile Families and Child Wellbeing Study data.
Note: Nine-year city weights are applied. Numbers are percentages except where noted.

Table A2. Full Models of Parental Debt and Child Socioemotional Outcomes

	Outcomes at 9-Year				Outcomes at 15-Year			
	Mother-Reported		Child-Reported		Mother-Reported		Child-Reported	
	Internalizing Behaviors	Externalizing Behaviors	Anxiety Depression	Delinquent Behaviors	Internalizing Behaviors	Externalizing Behaviors	Anxiety Depression	Delinquent Behaviors
High parental debt burden								
Mothers' household debt >= 25% of income	0.04	0.03	-0.01	0.03	0.03	-0.02	-0.02	-0.01
Fathers' household debt >= 25% of income	0.01	0.05	0.09	0.09	0.07	0.01	0.08	0.16
Fathers' arrears >= 25% of income	0.07	0.11	0.17*	0.12	0.31***	0.27***	0.22**	-0.04
Covariates								
Child is male	0.06	0.20***	0.07	0.43	-0.10*	0.14**	-0.17***	0.25***
Low birthweight	0.03	0.00	0.07	-0.08	0.02	0.10	0.07	-0.08
Child age (years)	0.11	0.00	-0.02	0.07	-0.06	-0.04	0.07	0.05
Marital birth	0.14	0.10	0.01	0.19*	0.01	0.11	-0.15	-0.12
Mother: non-Hispanic black	-0.29**	-0.28***	0.26**	0.24**	-0.46***	-0.07	-0.25***	0.11
Mother: Hispanic	-0.08	-0.25**	0.16	-0.07	-0.38***	-0.13	-0.10	0.03
Mother: other race	0.05	-0.06	0.10	0.06	-0.13	0.10	-0.04	0.32
Parents same race	-0.07	0.02	0.05	0.25*	-0.13	-0.02	0.18*	0.22
Mother: U.S.-born	-0.06	0.10	0.21	-0.02	-0.04	0.14	-0.05	-0.06
Father: U.S.-born	-0.09	0.14	0.03	-0.06	-0.21**	0.05	0.03	-0.10

Mother: high school degree	0.01*	0.04	-0.09	-0.01**	0.01	-0.07	-0.02**
Mother: more than high school	0.01	0.02	-0.15*	0.00	0.01	-0.11	0.01*
Parents same education	0.09	0.00	-0.01	0.00	0.04	0.05	-0.04
Mothers' age (years)	0.07	-0.01	-0.01**	0.05	0.08	-0.02**	0.08
Parent age diff (years)	0.10	0.01	0.00	-0.06	0.07	0.01	0.05
Child fathers' first	0.05	0.02	0.06	-0.01	-0.03	0.08	-0.03
Child mothers' first	0.05	-0.09	-0.03	-0.01	0.16**	-0.22***	-0.04
Medicaid birth	0.11	0.11*	0.11*	-0.17**	-0.05	0.07	-0.03
Mother depressed	0.37***	0.34***	0.11	0.06	0.32***	0.18**	-0.08
Father depressed	0.22*	0.35***	0.10	0.15	0.13	0.15	0.05
Mothers' household income (ln)	-0.03*	-0.02	-0.02	-0.02	-0.01	-0.01	0.00
Fathers' household income (ln)	-0.02	-0.02	0.02*	-0.01	-0.02	-0.02	0.00
Father has cohab part	-0.14	-0.28*	0.16	0.01	-0.06	0.16	0.19
Mother has cohab part	-0.01	-0.04	-0.03	-0.01	0.02	0.05	0.02
Mother, number of kids in household	-0.03	-0.01	0.04	-0.04	-0.02	-0.02	0.01
Father, number of kids in household	0.02	0.00	-0.05*	-0.02	0.02	-0.04	-0.01
N	1,788	1,788	1,788	1,788	1,780	1,780	1,780

Source: Authors' calculations based on Fragile Families and Child Wellbeing Study data.

Note: Estimates are from FIML models. All outcomes are standardized (mean = 0, SD = 1). Figures in table are linear regression coefficients.

p < .05; ** *p* < .01; *** *p* < .001

REFERENCES

Achenbach, Thomas M., and Leslie Rescorla. 2001. *Manual for the ASEBA School-Age Forms & Profiles*. Burlington: University of Vermont, Research Center for Children, Youth & Families.

Adamsons, Kari, and Sara K. Johnson. 2013. "An Updated and Expanded Meta-Analysis of Nonresident Fathering and Child Well-Being." *Journal of Family Psychology* 27(4): 589–99.

Arthur, Joey. 2018. "Do Parents Who Owe the Most Child Support Debt Have Reported Income?" Washington: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Child Support Enforcement. Accessed December 5, 2020. https://www.acf.hhs.gov/css/ocsedatablog/2018/07/do-parents-who-owe-the-most-child-support-debt-have-reported-income.

ASCEND. 2020. "Reducing Arrears." Child Support Policy Fact Sheet, August 26. Washington, D.C.: The Aspen Institute. Accessed December 5, 2020. https://ascend.aspeninstitute.org/resources/child-support-policy-fact-sheet-reducing-arrears.

Babiarz, Patryk, Richard Widdows, and Tansel Yilmazer. 2013. "Borrowing to Cope with Adverse Health Events: Liquidity Constraints, Insurance Coverage, and Unsecured Debt." *Health Economics* 22(10): 1177–98. DOI: 10.1002/hec.2877.

Bandelj, Nina, and Angelina Grigoryeva. 2021. "Investment, Saving, and Borrowing for Children: Trends by Wealth, Race, and Ethnicity, 1998–2016." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 50–77. DOI: 10.7758/RSF.2021.7.3.03.

Berger, Lawrence M., J. Michael Collins, and Laura Cuesta. 2016. "Household Debt and Adult Depressive Symptoms in the United States." *Journal of Family and Economic Issues* 37(1): 42–57. DOI: 10.1007/s10834-015-9443-6.

Berger, Lawrence M., and Jason N. Houle. 2016. "Parental Debt and Children's Socioemotional Well-being." *Pediatrics* 137(2): e20153059. DOI: 10.1542/peds.2015-3059.

———. 2019. "Rising Household Debt and Children's Socioemotional Well-Being Trajectories." *Demography* 56(4): 1273–301. DOI: 10.1007/s13524-019-00800-7.

Berger, Lawrence M., Christina Paxson, and Jane Waldfogel. 2009. "Income and Child Development." *Children and Youth Services Review* 31(9): 978–89. DOI: 10.1016/j.childyouth.2009.04.013.

Boen, Courtney, Lisa A. Keister, and Nick Graetz. 2021. "Household Wealth and Child Body Mass Index: Patterns and Mechanisms." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 80–100. DOI: 10.7758/RSF.2021.7.3.04.

Brewer, Mackenzie. 2018. "Household Debt and Children's Risk of Food Insecurity." *Social Problems*. DOI: 10.1093/socpro/spz027.

Bricker, Jesse, Lisa J. Dettling, Alice Henriques, Joanne W. Hsu, Lindsay Jacobs, Kevin B. Moore, Sarah Pack, John Sabelhaus, Jeffrey Thompson, and Richard A. Windle. 2017. "Changes in U.S. Family Finances from 2013 to 2016: Evidence from the Survey of Consumer Finances." *Federal Reserve Bulletin* 103(3): 1–41.

Brown, Sarah, Karl Taylor, and Stephen Wheatley Price. 2005. "Debt and Distress: Evaluating the Psychological Cost of Credit." *Journal of Economic Psychology* 26(5): 642–63. DOI: 10.1016/j.joep.2005.01.002.

Cancian, Maria, Carolyn J. Heinrich, and Yiyoon Chung. 2013. "Discouraging Disadvantaged Fathers' Employment: An Unintended Consequence of Policies Designed to Support Families." *Journal of Policy Analysis and Management* 32(4): 758–84. DOI: 10.1002/pam.21707.

Cancian, Maria, and Daniel R. Meyer. 2005. "Multiple Partner Fertility: Incidence and Implications for Child Support Policy." *Social Service Review* 79(4): 577–601.

Carlson, Marcia J., and Katherine A. Magnuson. 2011. "Low-Income Fathers' Influence on Children." *Annals of the American Academy of Political and Social Science* 635(1): 95–116. DOI: 10.1177/0002716210393853.

Carr, Michael D., and Arjun Jayadev. 2015. "Relative Income and Indebtedness: Evidence from Panel Data." *Review of Income and Wealth* 61(4): 759–72. DOI: 10.1111/roiw.12134.

Chang, Yunhee, Swarn Chatterjee, and Jinhee Kim. 2014. "Household Finance and Food Insecurity." *Journal of Family and Economic Issues* 3(4): 499–515. DOI: 10.1007/s10834-013-9382-z.

Choi, Jeong-Kyun. 2010. "Nonresident Fathers' Parenting, Family Processes, and Children's Development in Urban, Poor, Single-Mother Families." *Social Service Review* 84(4): 655–77.

Choi, Jeong-Kyun, and Ho-Soon Pyun. 2014. "Non-resident Fathers' Financial Support, Informal Instrumental Support, Mothers' Parenting, and Child Development in Single-Mother Families with Low Income." *Journal of Family Issues* 35(4): 526–46. DOI: 10.1177/0192513X13478403.

Collins, Linda M. 2001. "A Comparison of Inclusive and Restrictive Strategies in Modern Missing Data Procedures." *Psychological Methods* 6(4): 330–51. DOI: 10.1037/1082-989X.6.4.330.

Comfort, Megan. 2016. "'A Twenty-Hour-a-Day Job': The Impact of Frequent Low-Level Criminal Justice Involvement on Family Life." *Annals of the American Academy of Political and Social Science* 665(1): 63–79. DOI: 10.1177/0002716215625038.

Conger, Rand D., Katherine J. Conger, and Monica J. Martin. 2010. "Socioeconomic Status, Family Processes, and Individual Development." *Journal of Marriage and Family* 72(3): 685–704. DOI: 10.1111/j.1741-3737.2010.00725.x.

Conger, Rand D., Xiaojia Ge, Glen H. Elder, Frederick O. Lorenz, and Ronald L. Simons. 1994. "Economic Stress, Coercive Family Process, and Developmental Problems of Adolescents." *Child Development* 65(2): 541–61. DOI: 10.2307/1131401.

Conwell, Jordan A., and Leafia Zi Ye. 2021. "All Wealth Is Not Created Equal: Race, Parental Net Worth, and Children's Achievement." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 101–21. DOI: 10.7758/RSF.2021.7.3.05.

Derogatis, Leonard R., and Kathryn L. Savitz. 1999. "The SCL-90-R, Brief Symptom Inventory, and Matching Clinical Rating Scales." In *The Use of Psychological Testing for Treatment Planning and Outcomes Assessment*, 2nd ed., edited by Mark E. Maruish. Mahwah, N.J.: Lawrence Erlbaum.

Desmond, Matthew. 2016. *Evicted: Poverty and Profit in the American City*. New York: Crown/Archetype.

Drentea, Patricia, and Paul J. Lavrakas. 2000. "Over the Limit: The Association Among Health, Race and Debt." *Social Science & Medicine* 50(4): 517–29.

Drentea, Patricia, and John R. Reynolds. 2012. "Neither a Borrower Nor a Lender Be: The Relative Importance of Debt and SES for Mental Health Among Older Adults." *Journal of Aging and Health* 24(4): 673–95. DOI: 10.1177/0898264311431304.

——. 2015. "Where Does Debt Fit in the Stress Process Model?" *Society and Mental Health* 5(1): 16–32. DOI: 10.1177/2156869314554486.

Duncan, Greg J., Katherine Magnuson, and Elizabeth Votruba-Drzal. 2014. "Boosting Family Income to Promote Child Development." *The Future of Children* 24(1): 99–120.

Dwyer, Rachel E. 2018. "Credit, Debt, and Inequality." *Annual Review of Sociology* 44(1): 237–61. DOI: 10.1146/annurev-soc-060116-053420.

Dwyer Emory, Allison, Lenna Nepomnyaschy, Maureen R. Waller, Daniel P. Miller, and Alexandra Haralampoudis. 2020. "Providing After Prison: Nonresident Fathers' Formal and Informal Contributions to Children." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 6(1): 84–112. DOI: 10.7758/RSF.2020.6.1.04.

Edin, Kathryn, and Timothy Jon Nelson. 2013. *Doing the Best I Can: Fatherhood in the Inner City*. Berkeley: University of California Press.

Edin, Kathryn, and H. Luke Shaefer. 2015. *$2.00 a Day: Living on Almost Nothing in America*. New York: Houghton Mifflin Harcourt.

Elliott, William, Mesmin Destin, and Terri Friedline. 2011. "Taking Stock of Ten Years of Research on the Relationship Between Assets and Children's Educational Outcomes: Implications for Theory, Policy and Intervention." *Children and Youth Services Review* 33(11): 2312–28. DOI: 10.1016/j.childyouth.2011.08.001.

Federal Reserve Bank of New York. 2019. "Quarterly Report on Household Debt and Credit, 2019:Q4." New York: Federal Reserve Bank, Center for Microeconomic Data. Accessed December 5, 2020. https://www.newyorkfed.org/microeconomics/hhdc.html.

Fitch, Chris, Alan Simpson, Sharon Collard, and M. Teasdale. 2007. "Mental Health and Debt: Challenges for Knowledge, Practice and Identity." *Journal of Psychiatric and Mental Health Nursing* 14(2): 128–33. DOI: 10.1111/j.1365-2850.2007.01053.x.

Foote, Christopher L., Lara Loewenstein, and Paul S. Willen. 2016. "Cross-Sectional Patterns of Mortgage Debt During the Housing Boom: Evidence and Implications." *NBER* working paper no. 22985. Cambridge, Mass.: National Bureau of Economic Research. DOI: 10.3386/w22985.

Fourcade, Marion, and Kieran Healy. 2013. "Classification Situations: Life-Chances in the Neoliberal

Era." *Accounting, Organizations and Society* 38(8): 559–72. DOI: 10.1016/j.aos.2013.11.002.

Garfinkel, Irwin, Sara S. McLanahan, and Thomas L. Hanson. 1998. "A Patchwork Portrait of Nonresident Fathers." In *Fathers Under Fire: The Revolution in Child Support Enforcement*, edited by Irwin Garfinkel, Sara S. McLanahan, Daniel R. Meyer, and Judith A. Seltzer. New York: Russell Sage Foundation.

Gibson-Davis, Christina, and Heather D. Hill. 2021. "Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 1–26. DOI: 10.7758/RSF.2021.7.3.01.

Gibson-Davis, Christina, and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55(3): 1009–32. DOI: 10.1007/s13524-018 -0676-5.

Gold, Sarah, Kathryn J. Edin, and Timothy J. Nelson. 2020. "Does Time with Dad in Childhood Pay Off in Adolescence?" *Journal of Marriage and Family* 82(5): 1587–605. DOI: 10.1111/jomf.12676.

Grinstein-Weiss, Michal, Trina R. Shanks, and Sondra G. Beverly. 2014. "Family Assets and Child Outcomes: Evidence and Directions." *The Future of Children* 24(1): 147–70.

Guzzo, Karen Benjamin. 2014. "New Partners, More Kids: Multiple-Partner Fertility in the United States." *Annals of the American Academy of Political and Social Science* 654(1): 66–86. DOI: 10.1177/0002716214525571.

Hankin, Benjamin L., Robin Mermelstein, and Linda Roesch. 2007. "Sex Differences in Adolescent Depression: Stress Exposure and Reactivity Models." *Child Development* 78(1): 279–95. DOI: 10 .1111/j.1467–8624.2007.00997.x.

Harris, Alexes. 2016. *A Pound of Flesh: Monetary Sanctions as Punishment for the Poor*. New York: Russell Sage Foundation.

Harris, Alexes, Heather Evans, and Katherine Beckett. 2010. "Drawing Blood from Stones: Legal Debt and Social Inequality in the Contemporary United States." *American Journal of Sociology* 115(6): 1753–799.

Heinrich, Carolyn J., Brett C. Burkhardt, and Hilary M. Shager. 2011. "Reducing Child Support Debt and Its Consequences: Can Forgiveness Benefit All?" *Journal of Policy Analysis and Management* 30(4): 755–74. DOI: 10.1002/pam.20599.

Houle, Jason N. 2014. "Disparities in Debt: Parents' Socioeconomic Resources and Young Adult Student Loan Debt." *Sociology of Education* 87(1): 53–69.

Houle, Jason N., and Danya E. Keene. 2015. "Getting Sick and Falling behind: Health and the Risk of Mortgage Default and Home Foreclosure." *Journal of Epidemiology and Community Health* 69(4): 382–87. DOI: 10.1136/jech-2014-204637.

Johnson, David R., and Rebekah Young. 2011. "Toward Best Practices in Analyzing Datasets with Missing Data: Comparisons and Recommendations." *Journal of Marriage and Family* 73(5): 926–45. DOI: 10.1111/j.1741-3737.2011.00861.x.

Kalousova, Lucie, and Sarah A. Burgard. 2013. "Debt and Foregone Medical Care." *Journal of Health and Social Behavior* 54(2): 204–20. DOI: 10 .1177/0022146513483772.

Katzenstein, Mary Fainsod, and Maureen R. Waller. 2015. "Taxing the Poor: Incarceration, Poverty Governance, and the Seizure of Family Resources." *Perspectives on Politics; Cambridge* 13(3): 638–56. DOI: 10.1017/S153759271500122X.

Kennedy, Sheela, and Larry Bumpass. 2008. "Cohabitation and Children's Living Arrangements: New Estimates from the United States." *Demographic Research* 19 (December): 1663–92. DOI: 10.4054/DemRes.2008.19.47.

Kessler, Ronald C., Gavin Andrews, Daniel Mroczek, Bedirhan Ustun, and Hans-Ulrich Wittchen. 1998. "The World Health Organization Composite International Diagnostic Interview Short-Form (CIDI-SF)." *International Journal of Methods in Psychiatric Research* 7(4): 171–85. DOI: 10.1002 /mpr.47.

Kim, Sung won, and Nancy E. Hill. 2015. "Including Fathers in the Picture: A Meta-Analysis of Parental Involvement and Students' Academic Achievement." *Journal of Educational Psychology* 107(4): 919–34. DOI: 10.1037/edu0000023.

Link, Nathan W., and Caterina G. Roman. 2017. "Longitudinal Associations Among Child Support Debt, Employment, and Recidivism After Prison." *Sociological Quarterly* 58(1): 140–60. DOI: 10 .1080/00380253.2016.1246892.

Lundberg, Ian, and Louis Donnelly. 2019. "A Research Note on the Prevalence of Housing Eviction Among Children Born in U.S. Cities." *Demography* 56(1): 391–404. DOI: 10.1007/s13524 -018–0735-y.

Magnuson, Katherine, and Elizabeth Votruba-Drzal.

2009. "Enduring Influences of Childhood Poverty." *Focus* 26(2): 32–37.

Marsh, Herbert W. 1990. *The Self Description Questionnaire SDQ: Manual*. MacArthur, AU: University of Western Sydney.

Maumary-Gremaud, Anne. 2000. "Things That You Have Done." Technical Report. Durham, N.C.: Fast Track Project. Accessed December 5, 2020. http://www.fasttrackproject.org/techrept/t/tyd/tyd5tech.pdf.

McLeod, Branden A., and Aaron Gottlieb. 2018. "Examining the Relationship Between Incarceration and Child Support Arrears Among Low-Income Fathers." *Children and Youth Services Review* 94 (November): 1–9. DOI: 10.1016/j.childyouth.2018.09.022.

Michelmore, Katherine, and Leonard M. Lopoo. 2021. "Exposure to the Earned Income Tax Credit in Early Childhood and Family Wealth." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 196–215. DOI: 10.7758/RSF.2021.7.3.09.

Miller, Daniel P., and Ronald B. Mincy. 2012. "Falling Further Behind? Child Support Arrears and Fathers' Labor Force Participation." *Social Service Review* 86(4): 604–35.

Miller, Daniel P., Margaret M.C. Thomas, Maureen R. Waller, Lenna Nepomnyaschy, and Allison D. Emory. 2020. "Father Involvement and Socioeconomic Disparities in Child Academic Outcomes." *Journal of Marriage and Family* 82(2): 515–33. DOI: 10.1111/jomf.12666.

Miller, Portia, Tamara Podvysotska, Laura Betancur, and Elizabeth Votruba-Drzal. 2021. "Wealth and Child Development: Differences in Associations by Family Income and Developmental Stage." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 152–74. DOI: 10.7758/RSF.2021.7.3.07.

Mishel, Lawrence, Elise Gould, and Josh Bivens. 2015. "Wage Stagnation in Nine Charts." Washington, D.C.: Economic Policy Institute.

Mistry, Rashmita S., Elizabeth A. Vandewater, Aletha C. Huston, and Vonnie C. McLoyd. 2002. "Economic Well-Being and Children's Social Adjustment: The Role of Family Process in an Ethnically Diverse Low-Income Sample." *Child Development* 73(3): 935–51.

Moulton, Vanessa, Alissa Goodman, Bilal Nasim, George B. Ploubidis, and Ludovica Gambaro. 2020. "Parental Wealth and Children's Cognitive Ability, Mental, and Physical Health: Evidence From the UK Millennium Cohort Study." *Child Development.* First published online, September 16. DOI: 10.1111/cdev.13413.

National Council of State Legislatures. 2019. "Child Support and Incarceration." Washington, D.C.: National Council of State Legislatures. Accessed December 5, 2020. https://www.ncsl.org/research/human-services/child-support-and-incarceration.aspx#About.

Nepomnyaschy, Lenna, Katherine A. Magnuson, and Lawrence M. Berger. 2012. "Child Support and Young Children's Development." *Social Service Review* 86(1): 3–35.

Nepomnyaschy, Lenna, Daniel P. Miller, Maureen R. Waller, and Allison Dwyer Emory. 2020. "The Role of Fathers in Reducing Socioeconomic Inequalities in Adolescent Behavior Outcomes." *Social Service Review* 94(3) (September). DOI: 10.1086/710546.

Newsome, Jamie, Jamie C. Vaske, Krista S. Gehring, and Danielle L. Boisvert. 2016. "Sex Differences in Sources of Resilience and Vulnerability to Risk for Delinquency." *Journal of Youth and Adolescence* 45(4): 730–45. DOI: 10.1007/s10964-015-0381-2.

New York State. 2020. "Support Enforcement." Albany: New York Department of Child Support Enforcement. Accessed December 5, 2020. https://www.childsupport.ny.gov/dcse/support_enforcement.html.

Office of Child Support Enforcement. 2018. "Office of Child Support Enforcement, Preliminary Report to Congress, FY 2018." Washington: U.S. Department of Health and Human Services, Administration for Children & Families. Accessed December 5, 2020. https://www.acf.hhs.gov/sites/default/files/programs/css/fy_2018_preliminary_data_report.pdf.

Office of the Inspector General. 2000. "The Establishment of Child Support Orders for Low-Income Noncustodial Parents." Report no. OEI-05-99-00390. Washington: U.S. Department of Health and Human Services. Accessed December 5, 2020. http://oig.hhs.gov/oei/reports/oei-05-99-00390.pdf.

Orr, Amy J. 2003. "Black-White Differences in Achievement: The Importance of Wealth." *Sociology of Education* 76 (4): 281–304. DOI: 10.2307/1519867.

Pager, Devah. 2003. "The Mark of a Criminal Re-

cord." *American Journal of Sociology* 108(5): 937–75.

Pate, David J. 2016. "The Color of Debt: An Examination of Social Networks, Sanctions, and Child Support Enforcement Policy." *Race and Social Problems* 8(1): 116–135.

Pfeffer, Fabian T., and Robert F. Schoeni. 2016. "How Wealth Inequality Shapes Our Future." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 2–22. DOI: 10.7758/rsf.2016.2.6.01.

Pfeffer, Fabian T., and Nora Waitkus. 2021. "Comparing Child Wealth Inequality Across Countries." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 28–49. DOI: 10.7758/RSF.2021.7.3.02.

Putze, Dennis. 2017. "Who Owes the Child Support Debt." Washington: U.S. Department of Health and Human Services, Administration for Children and Families. Accessed December 5, 2020. https://www.acf.hhs.gov/css/ocsedatablog/2017/09/who-owes-the-child-support-debt.

Radloff, Lenore Sawyer. 1977. "The CES-D Scale: A Self-Report Depression Scale for Research in the General Population." *Applied Psychological Measurement* 1(3): 385–401. DOI: 10.1177/014662167700100306.

Reading, Richard, and Shirley Reynolds. 2001. "Debt, Social Disadvantage and Maternal Depression." *Social Science & Medicine* 53(4): 441–53. DOI: 10.1016/S0277-9536(00)00347-6.

Reichman, Nancy, Julien Teitler, Irwin Garfinkel, and Sara McLanahan. 2001. "Fragile Families: Sample and Design." *Children and Youth Services Review* 23(4/5): 303–26. DOI: 10.1016/S0190-7409(01)00141-4.

Roberts, Paula, and Michelle Vinson. 2004. "State Policy Regarding Pass-Through and Disregard of Current Months' Child Support Collected for Families Receiving TANF-Funded Cash Assistance." Pub no. 06–04. Washington, D.C.: CLASP.

Rona-Tas, Akos, and Alya Guseva. 2018. "Consumer Credit in Comparative Perspective." *Annual Review of Sociology* 44(1): 55–75. DOI: 10.1146/annurev-soc-060116-053653.

Ruggles, Steven. 2015. "Patriarchy, Power, and Pay: The Transformation of American Families, 1800–2015." *Demography* 52 (6): 1797–823. DOI: 10.1007/s13524-015-0440-z.

Rutter, Michael, Avshalom Caspi, and Terrie E. Moffitt. 2003. "Using Sex Differences in Psychopathology to Study Causal Mechanisms: Unifying Issues and Research Strategies." *Journal of Child Psychology and Psychiatry* 44(8): 1092–115. DOI: 10.1111/1469-7610.00194.

Saez, Emmanuel, and Gabriel Zucman. 2016. "Wealth Inequality in the United States since 1913: Evidence from Capitalized Income Tax Data." *Quarterly Journal of Economics* 131(2): 519–78. DOI: 10.1093/qje/qjw004.

Seefeldt, Kristin S. 2015. "Constant Consumption Smoothing, Limited Investments, and Few Repayments: The Role of Debt in the Financial Lives of Economically Vulnerable Families." *Social Service Review* 89(2): 263–300. DOI: 10.1086/681932.

Shanks, Trina R. 2007. "The Impacts of Household Wealth on Child Development." *Journal of Poverty* 11(2): 93–116. DOI: 10.1300/J134v11n02_05.

Smeeding, Timothy, Irwin Garfinkel, and Ronald B. Mincy. 2011. "Young Disadvantaged Men: Fathers, Families, Poverty, and Policy." *Annals of the American Academy of Political and Social Science* 635(1): 6–21.

Smock, Pamela J., and Christine R. Schwartz. 2020. "The Demography of Families: A Review of Patterns and Change." *Journal of Marriage and Family* 82(1): 9–34. DOI: 10.1111/jomf.12612.

Sorensen, Elaine. 2014. "Major Change in Who Is Owed Child Support Arrears." Child Support Fact Sheet no. 4. Washington: U.S. Department of Health and Human Services, Administration for Children & Families. Accessed December 5, 2020. https://www.acf.hhs.gov/sites/default/files/programs/css/changes_in_who_is_owed_arrears.pdf.

———. 2019. "TANF Arrears Continue to Decline." *Office of Child Support Enforcement* (blog), October 18. Accessed December 5, 2020. https://www.acf.hhs.gov/css/ocsedatablog/2019/10/tanf-arrears-continue-to-decline.

Sorensen, Elaine, Arthur Pashi, and Melody Morales. 2016. "Characteristics of Families Served by the Child Support (IV-D) Program: 2016. US Census Survey Results." Washington: U.S. Department of Health and Human Services, Administration for Children and Families. Accessed December 5, 2020. https://www.acf.hhs.gov/sites/default/files/programs/css/iv_d_characteristics_2016_census_results.pdf.

Sorensen, Elaine, Liliana Sousa, and Simon Schaner. 2007. "Assessing Child Support Arrears in Nine Large States and the Nation." Washington: U.S.

Department of Health and Human Services and Office of Child Support Enforcement.

Stack, Carol B. 1975. *All Our Kin: Strategies for Survival in a Black Community*. New York: Basic Books.

Sweet, Elizabeth, Arijit Nandi, Emma K. Adam, and Thomas W. McDade. 2013. "The High Price of Debt: Household Financial Debt and Its Impact on Mental and Physical Health." *Social Science & Medicine* 91 (August): 94–100. DOI: 10.1016/j.socscimed.2013.05.009.

Teitler, Julien O., Nancy E. Reichman, and Susan Sprachman. 2003. "Costs and Benefits of Improving Response Rates for a Hard-to-Reach Population." *Public Opinion Quarterly* 67(1): 126–38.

Turetsky, Vicki. 2019. "Reforming Child Support to Improve Outcomes for Children and Families." *The Abell Report* 32(5) (June). Accessed December 5, 2020. https://eric.ed.gov/?id=ED596117.

Turetsky, Vicki, and Maureen R. Waller. 2020. "Piling on Debt: The Intersections Between Child Support Arrears and Legal Financial Obligations." *UCLA Criminal Justice Law Journal* 4(1): 117–41.

Turner, Kimberly J., and Maureen Waller. 2016. "Indebted Relationships: Child Support Arrears and Nonresident Fathers' Involvement with Children." *Journal of Marriage and Family* 79(1): 24–43. DOI: 10.1111/jomf.12361.

Um, Hyunjoon. 2019. "The Role of Child Support Debt on the Development of Mental Health Problems Among Nonresident Fathers." *Fragile Families* working paper no. WP19-05-FF. Princeton, N.J.: Princeton University.

U.S. Census Bureau. 2020. "America's Families and Living Arrangements: 2019 (Table Series)." Washington: U.S. Department of Commerce. Accessed December 5, 2020. https://www.census.gov/data/tables/2019/demo/families/cps-2019.html.

Vera-Toscano, Esperanza, Victoria Ateca-Amestoy, and Rafael Serrano-Del-Rosal. 2006. "Building Financial Satisfaction." *Social Indicators Research* 77(2): 211–43. DOI: 10.1007/s11205-005-2614-3.

Western, Bruce, and Christopher Wildeman. 2009. "The Black Family and Mass Incarceration." *Annals of the American Academy of Political and Social Science* 621(1): 221–42.

Wheaton, Laura, and Elaine Sorensen. 2007. "The Potential Impact of Increasing Child Support Payments to TANF Families." Brief no. 5. Washington, D.C.: The Urban Institute. Accessed December 5, 2020. https://www.urban.org/sites/default/files/publication/33011/411595-The-Potential-Impact-of-Increasing-Child-Support-Payments-to-TANF-Families.PDF.

Wilson, William Julius. 2011. *When Work Disappears: The World of the New Urban Poor*. New York: Random House.

Yeung, W. Jean, and Dalton Conley. 2008. "Black–White Achievement Gap and Family Wealth." *Child Development* 79(2): 303–24. DOI: 10.1111/j.1467-8624.2007.01127.x.

Wealth and Child Development: Differences in Associations by Family Income and Developmental Stage

PORTIA MILLER, TAMARA PODVYSOTSKA, LAURA BETANCUR, AND ELIZABETH VOTRUBA-DRZAL

Wealth inequality is at a historic high in the United States. Yet little is known about the implications of wealth on children's development because research has focused mainly on the role of wealth in shaping outcomes in adulthood. Using data from the National Longitudinal Survey of Youth (N = 8,095), we examine how family wealth relates to achievement and behavior problems during early childhood, middle childhood, and adolescence. Further, we explore whether links between wealth and children's development vary by level of income and income volatility. Results show that wealth, controlling for income level and volatility, is uniquely related to both academic and behavioral development in early childhood, middle childhood, and adolescence. Moreover, evidence suggests that wealth plays a buffering role when it comes to protecting children's development from the deleterious effects of low family income, especially as children grow older.

Economic disadvantage threatens children's development. Relative to their more advantaged peers, economically disadvantaged children exhibit lower academic and behavioral skills at the start of kindergarten (Garcia 2015). These disparities persist throughout formal schooling and predict low educational attainment, worse psychological functioning, and intergenerational transmission of low levels of income and wealth in adulthood (Duncan et al. 2007; Duncan and Magnuson 2011; Gibson-Davis and Hill 2021, this issue; Heckman 2000). Accordingly, skills gaps have been the focus of considerable research and policy. Despite this attention, economic disparities in children's outcomes have grown over the past fifty years, even as racial-ethnic disparities have declined (Reardon 2011).

Portia Miller is a research associate in the Learning Research and Development Center at the University of Pittsburgh, United States. **Tamara Podvysotska** is a doctoral candidate in the Department of Psychology at the University of Pittsburgh, United States. **Laura Betancur** is a postdoctoral research associate at the Department of Human Development and Family Studies, Iowa State University, United States. **Elizabeth Votruba-Drzal** is professor of psychology and a research scientist in the Learning Research and Development Center at the University of Pittsburgh, United States.

To date, much of the research and policy agendas aimed at remedying skills gaps has concentrated on how family income relates to disparities in children's outcomes. Much less attention has been paid to the implications of wealth even though wealth inequality is greater than income inequality in the United States (Saez 2017; Wolff 2017) and growth in wealth inequality has outpaced that of income inequality in families with children (Gibson-Davis and Hill 2021, this issue). Indeed, levels of wealth inequality in the United States have reached highs not seen since the turn of the twentieth century (Gibson-Davis and Hill 2021, this issue; Yellen 2016). Median net worth has declined over the past thirty years as mean net worth has risen disproportionately, and the share of households with no wealth or in debt has grown (Pfeffer and Schoeni 2016). Moreover, low net wealth is particularly problematic in families with children (Gibson-Davis and Percheski 2018; Pfeffer and Schoeni 2016). This likely has implications for disparities in achievement and behavioral functioning, as several studies have linked wealth to children's development—primarily academic (see Diemer, Marchand, and Mistry 2020; Elliott, Destin, and Friedline 2011; Ream and Gottfried 2019; Shanks 2007; Yeung and Conley 2008). Understanding the role of wealth in academic and behavioral development may thus be key to reducing economic skills gaps. However, studies have not explored how wealth relates to children's outcomes across various developmental stages of childhood, controlling for other measures of family economic condition.

Using data from the National Longitudinal Survey of Youth (NLSY) and its child supplement (NLSY-CS), this study contributes to our knowledge of the associations between wealth and children's academic and behavioral development. Specifically, we examine how family wealth predicts reading and math achievement and internalizing and externalizing problems at three distinct periods of child development: early childhood; middle childhood; and adolescence. We explore whether wealth acts to buffer children from low levels of family income or high levels of income volatility. By considering the role of wealth in shaping children's development at different stages and how it interfaces

with other dimension of family economic well-being, we hope to help shed light on the potential implications of widening wealth gaps for children's development.

FRAMEWORKS FOR UNDERSTANDING THE ROLE OF WEALTH IN CHILDREN'S DEVELOPMENT

Wealth, defined here as net worth (that is, assets minus debts) but operationalized in various ways as Christina Gibson-Davis and Heather Hill (2021) describe in the introduction to this issue, may affect children in a variety of ways. Drawing from fields of psychology, sociology, and economics, we rely on three theoretical frameworks for helping us conceptualize the role that wealth may play in shaping child development: resource and investment, family stress, and social or cultural capital. First, resource and investment perspectives posit that economic resources dictate families' abilities to invest in materials and experiences that produce better child outcomes, like educational activities, adequate health services, and good neighborhoods and schools (Becker 1991). As discussed in the introduction to this volume, wealth is an important economic resource that families use to invest in their children (Gibson-Davis and Hill 2021). It can be accessed to provide cash resources or used as collateral for securing loans. Wealth is also a stock of resources and enables saving for future expenditures, such as college education (Ford and Thompson 2016; Grinstein-Weiss, Shanks, and Beverly 2014). Qualitative work by Thomas Shapiro (2005) shows how parents leverage their wealth to make life-changing investments in children, particularly in terms of residence in better neighborhoods and enrollment in better schools. Wealth can also generate nonwork income (such as interest or dividend income) without time spent working, which frees up parental time to be invested in enriching interactions with children (Becker 1991).

Next, models of family stress show that economic strain leads to increased psychological distress and interparental conflict. Parental distress and conflict are linked to harsher, more detached, and less nurturing, stimulating, and responsive parenting, which in turn predicts worse outcomes for children, such as increased

internalizing and externalizing problems and less advanced cognitive and academic skills (Brotman et al. 2009; Chazan-Cohen et al. 2009; Farah et al. 2008; Shaw et al. 2001). Wealth can reduce economic strain by providing financial and psychological security against economic crises, especially in times of hardship, such as unemployment or family breakup (Gibson-Davis and Hill 2021, this issue; Yeung and Hofferth 1998). Wealth also affects families' abilities to withstand financial shocks, such as a medical emergency (Ford and Thompson 2016). Moreover, studies have documented that families with negative wealth have heightened levels of stress due to "debt stress" (Brown, Taylor, and Price 2005; Drentea and Lavrakas 2000; Dunn and Mirzaie 2016): stress stemming from owing money, paying high interest rates, or dealing with collection agencies.

Last, wealth is the strongest determinant of class status (Conley 1999). It increases power, independence, and social and cultural capital, which provide positive personal and social effects on family and child well-being beyond those conferred by income alone (Bourdieu and Passeron 1990; Gibson-Davis and Hill 2021, this issue; Oliver and Shapiro 1995). Studies have documented how membership in the middle and upper classes provide families with an understanding of culturally significant cues and institutional know-how, change the way people think and behave, and expand the array of available opportunities (Lareau 2015). In turn, their children are exposed to opportunities and social and cultural capital that foster the acquisition of academic and behavioral skills that ungird future success (Bourdieu and Passeron 1990; Lareau 2015; Orr 2003). For example, Annette Lareau finds that middle- and upper-class parents teach children the "rules of the game" regarding how institutions such as schools operate and how to navigate them (Lareau 2015). As a result, when faced with problems, their children are more inclined to ask for help and have their needs met by these institutions than to become frustrated and give up or address issues in a suboptimal matter (Calarco 2014; Lareau 2015). These skills lead to better academic and behavioral outcomes (Calarco 2014). Wealthier children are also more likely to participate in extracurricular activities; indeed, in

a recent study, wealth (not income) predicted total hours spent engaging in extracurricular activities, including those occurring within schools as well as nonschool extracurriculars (Weiniger, Lareau, and Conley 2015). Participation in extracurricular activities has been linked to both higher achievement and better behavioral outcomes (Covay and Carbonaro 2010; Metsäpalto and Pulkkinen 2012).

In addition to directly relating to child outcomes, wealth may interact with income level and income volatility to alter their links to development. A long literature has documented positive links between family income and children's development including achievement and behavior problems (Blau 1999; Gershoff et al. 2007; Reardon 2011). Much less research has explored how income volatility is related to child functioning, though recent studies have documented links between income volatility and behavior problems; in particular, income losses have been associated with increased externalizing and internalizing behavior problems (Miller et al. 2020; Miller and Votruba-Drzal 2017). Wealth acts to stabilize and enhance family income dynamics (Rauscher and Elliott 2016). For example, consider two low-income families with similar levels of annual income; a family with more wealth, that is, less debt or more assets, may have more money available for child investments if it has fewer debt obligations or less bills to pay because, for instance, the family owns its home or car. The wealthier family may also be able to borrow against assets to meet financial obligations. This may attenuate links between income level and child outcomes. In regard to volatility, as a stabilizer, wealth may reduce stress from economic uncertainty or income loss, which would weaken negative links between volatility and children's self-regulatory and attentional abilities and, in turn, academic and behavioral development (Blair and Raver 2016; Evans et al. 2005; Palacios-Barrios and Hanson 2019; Wadsworth et al. 2016). Similarly, two families experiencing income volatility may have different outcomes if one has wealth, like savings or assets to borrow against, that can be leveraged to supplement their economic resources in times of volatility. In these ways, wealth may buffer children from the negative ramifications of low income levels

or high income volatility on children's achievement and behavior.

LINKS BETWEEN WEALTH AND CHILD OUTCOMES

The literature examining associations between family wealth and children's well-being is growing, the majority of which is focused on academic outcomes. In particular, several studies have explored relations between wealth and achievement, with results varying widely across studies. Inconsistent results may be due to differences in wealth definitions, use of samples varying in age and developmental stage, or differences in the extent to which models account for other aspects of family economic circumstances. Many of these studies draw data from the NLSY and find positive links between wealth and achievement (Mayer 1997; Orr 2003; Zhan 2006). Others draw data from the Panel Study of Income Dynamics (PSID). For example, Jean Yeung and Dalton Conley (2008) find that debt predicts reading and math in early childhood (ages three through five) and that net worth predicts math and liquid assets predict reading during middle childhood (ages six through twelve). Also using PSID data but collapsing across ages three through twelve, Trina Shanks (2007) does not observe associations between wealth and reading skills, but does find that debt and net worth predict math. Other studies find null effects of wealth on achievement. For instance, a study using NLSY data and examining reading skills finds no association between net worth and reading (Phillips et al. 1998). Studies using other data similarly find no associations between wealth and achievement. These include findings of null effects of wealth on academic scores during adolescence in the National Educational Longitudinal Study (Easton-Brooks and Davis 2007) and of savings on high school grades in the National Survey of Families and Households (Zhan and Sherraden 2003). Across the literature, some evidence suggests that links between wealth and math scores are stronger and more consistent than associations between wealth and reading (Elliott, Destin, and Friedline 2011).

Beyond studies examining family wealth and achievement, the research on wealth and other aspects of child development, such as social and emotional functioning, is quite limited. Virtually no studies have examined whether wealth relates to children's behavioral development; however, proximal experiences related to wealth's associations with achievement may also shape children's problem behavior, and the mechanisms driving wealth-achievement relations operate similarly for behavior. One notable exception is Shanks's 2007 study. Using PSID data, she finds that higher net worth predicted fewer behavior problems in a sample of children ranging in age from three through twelve. Another informative study uses NLSY data to look at links between debt and behavior problems (Berger and Houle 2016). Lawrence Berger and Jason Houle (2016) find that family debt is associated with more problem behavior. Studies have also linked childhood wealth to high school dropout (Pfeffer 2018). Additionally, some studies link childhood wealth to a variety of outcomes in adulthood, especially educational attainment (Elliott, Destin, and Friedline 2011; Karagiannaki 2017), adult labor-market outcomes (Karagiannaki 2017), and adult mental health (Lê-Scherban, Brenner, and Schoeni 2016).

DEVELOPMENTAL DIFFERENCES IN THE ROLE OF WEALTH

Studies document developmental differences in links between income and child outcomes (Miller et al. 2020; Votruba-Drzal 2006). It thus seems reasonable to expect that wealth may have differential associations with academic achievement and behavior over the course of development. For several reasons, we hypothesize that its role will become more pronounced as children age. First, adolescents are more aware of their families' financial situations (Orr 2003; Yeung and Conley 2008). Plans to attend college may wane as adolescents process the cost of higher education and their families' ability to pay for it, which could have a negative impact on achievement. In addition, parental expectations for children's educational achievement and attainment, which are positively linked to wealth (Shanks and Destin 2009; Zhan 2006), are likely to intensify as children get older. As college approaches, parents and teachers of children from wealthier families likely begin expressing more demanding and

concrete expectations for the children when it comes to academics or behavior that puts them on the path to top colleges and careers.

Second, as children age, their contact with environments outside the home increases. Thus, to the extent that wealth buys access to better schools and neighborhoods, wealth effects may grow with age as children spend more time in school, with peers, and in their communities. The social and cultural capital that comes with wealth and the neighborhoods and schools it can buy becomes more salient as children age. Wealthier parents can access social and cultural capital to connect their children to networks that put children on trajectories of academic success and guide them away from risky behaviors that may indulge sensation-seeking tendencies that manifest during adolescence. Moreover, with increased exposure to peers and adults outside of the home comes increased awareness of stereotypes and gaps between the experiences of wealthy versus non-wealthy families (Heberle and Carter 2015), which may shape mental health and future goals and thus achievement and behavior.

Last, wealth gaps in children's behavior problems may become more pronounced as children age because of the developmental trajectories of externalizing and internalizing disorders. Externalizing problems are relatively normative during early childhood, with most children desisting from these behaviors as they move into middle childhood and adolescence (Lewis and Rudolph 2014). Externalizing behaviors exhibited in middle childhood and early adolescence are associated with more serious consequences for children's trajectories over the life course. During these times, when externalizing becomes nonnormative, wealth may expose children to sociocultural norms that discourage externalizing behaviors. Internalizing problems, on the other hand, tend to be lower in early childhood. Increases in internalizing disorders occur at the onset of puberty and around the transition to adulthood, and this may be especially pronounced for children who experience low levels of wealth (Lewis and Rudolph 2014). Coupling the normal trajectory of internalizing problems with stereotyping and negative feelings about having less wealth

than their peers during early adolescence suggests that wealth effects on internalizing would grow with age, with the largest effects visible at adolescence (Heberle and Carter 2015). Moreover, when children do experience problem behavior, wealth helps families access mental and behavioral health services to promote more positive behavioral development and can protect children against the more serious consequences of their behaviors (Luthar and Barkin 2012).

RESEARCH AIMS

Limitations in the current wealth literature preclude a full understanding of its role in child development. First, although these studies generally control for annual family income, they do not control for income volatility. This is problematic given that wealth may stabilize economic resources during times of income volatility (Rauscher and Elliott 2016), since families may draw from or borrow against assets to supplement lost income. Thus, without also exploring income volatility, it is unclear whether all or some of the association between wealth and child outcomes is attributable to less income volatility. Along those lines, wealth may act as a buffer in times of lower income or high income volatility (Rauscher and Elliott 2016). For this reason, wealth may moderate links between income level and volatility and child outcomes. No studies have explored interactions between income and wealth.

Second, in the current literature focused on wealth and children's development, the age at which children's outcomes were measured varies widely across studies. As discussed, family wealth may have varying effects on achievement depending on child age. Moreover, some of the studies are cross-sectional and thus do not include information on income and wealth at earlier stages of children's lives (Orr 2003; Yeung and Conley 2008; Zhan and Sherradan 2003). Studies show that economic conditions in early childhood continue to affect children's outcomes into adolescence (Magnuson and Votruba-Drzal 2008). Thus, studies that do not consider prior levels of wealth may underestimate associations between wealth and development. Last, the literature on wealth and child

development has focused on its associations with achievement. Links between wealth and behavior problems remain unclear despite theoretical reasons to expect associations.

To address these limitations, this study has two aims. First, it looks at the associations between cumulative wealth (measured from birth through the time of outcome) and children's achievement and behavior at three distinct developmental periods—early childhood (age four to five), middle childhood (age nine to ten), and adolescence (age thirteen to fourteen)—while controlling for two other dimensions of family economic circumstances, income level and volatility. Second, it explores the stabilizing role of family wealth by considering whether wealth moderates links between both income level and income volatility and child outcomes.

METHODS

Data were drawn from the National Longitudinal Survey of Youth 1979 (NLSY79) and its child supplement (NLSY-CS). The Bureau of Labor Statistics initiated the NLSY in 1979 to gather longitudinal data on the labor-market activities and other significant life events of young men and women in the United States. The original sample consisted of a nationally representative group of 12,868 men and women between the ages of fourteen and twenty-two, with an oversample of poor and minority individuals. The NLSY gathered income, employment, educational, and other data on the sample annually until 1994 at which point data were collected biennially. In 1986, the NLSY introduced the child supplement, a separate survey of the biological children from the NLSY female participants. This study increased the child-specific information collected and followed children in the NLSY-CS until age fourteen. Biennially since 1986, children of the NLSY79 mothers have been interviewed and children's cognitive, physical, and behavioral development has been assessed. As of 2014, a total of 11,521 children have been identified as having been born to the original 6,283 NLSY female respondents. The NLSY-CS includes direct assessments of children's academic achievement and parent reports of behavioral development. This study

uses eleven birth cohorts of children with data from early childhood through age thirteen and fourteen. Missing data on variables included in this study ranged from a low of 0 percent for many of the demographic variables, such as gender, birth cohort, and race, to a high of about 44 percent of the data missing for the direct assessments of achievement. Children with full data on the family economic circumstances of interest totaled 8,095. For them, we imputed all other missing data using multiple imputation by chained equations implemented in Stata to create ten imputed datasets (Royston 2005). Our final analytic sample was 8,095 across all models.

Child Outcome Measures

Behavioral functioning was measured using the Behavior Problem Index (BPI) (Peterson and Zill 1986), which measures the frequency and type of behavioral problems for children ages four through fourteen. The total index score is based on parents' answer to questions about their children's behaviors over the prior three months on a 3-point ordinal scale (0 = not true, 1 = sometimes true, 2 = often true). Examples of these items include whether the child is impulsive, is disobedient at home, is cruel to others, easily loses his or her temper, is fearful or anxious, is sad or depressed, or is withdrawn. Two factors tapping children's internalizing behaviors and externalizing behaviors have been identified in the BPI. These factors have been shown to be reliable and valid in prior research (Center for Human Resource Research 2002). Independent measures of internalizing (six items, $\alpha = 0.67–0.78$) and externalizing (fourteen items, $\alpha = 0.84–0.89$) behavioral problems were constructed using only the items that were asked consistently across all ages so that measures were consistent over time. The behavioral outcomes were standardized within each developmental stage to ease interpretation of results.

Peabody Individual Achievement Tests (PIAT) were used to measure academic achievement of children at early childhood (age five to six), middle childhood (age nine to ten), and adolescence (age thirteen to fourteen). This study focuses on mathematics and reading

skills, which were measured through the Mathematics, Reading Recognition, and Reading Comprehension subtests. Each of the subtests measures children's academic skills according to the educational expectation by child age and grade (Markwardt 1997). The PIAT Mathematics subtest is an age-normed test of mathematical reasoning and ability for children. It consists of eighty-four items measuring early skills such as recognizing numbers and advanced mathematic concepts such as geometry and trigonometry. The measure of reading skills was created by averaging the Reading Recognition and Comprehension subtests. Reading Recognition measures letter and word recognition and pronunciation (eighty-four items). The Reading Comprehension test measures the children's ability to derive meaning from what is read. The test was taken by children who scored at least 19 points at the Reading Recognition test. The test consists of sixty-six sentences that the child reads silently and then choses the picture that best describes the sentence meaning. Both PIAT subtests have been shown to be reliable, with a test-retest reliability that ranges from 0.73 to 0.84, and with good cross-year reliability (Baker et al. 1993). All academic outcomes were standardized within each developmental stage.

Family Economic Circumstances

The measure of wealth used in this study is based on the total net wealth variable calculated by the NLSY. It was calculated as the difference between assets and debts (and thus can have positive, zero, and negative values). Information collected included reports on assets like home value, value of businesses and real estate, vehicles, IRAs, 401(k) and 403(b) retirement plans, stocks, bonds, mutual funds, cash savings, and other assets like jewelry or collections, and reports of debts like mortgages or other residential debt, debt on vehicles, and credit card and student loan debt. To account for economies of scale, wealth was adjusted for the square root of household size (Gibson-Davis and Percheski 2018). Given that the wealth data were skewed and initial exploratory analyses showed nonlinearities in links between wealth and child outcomes, we tested two different nonlinear specifications of the wealth variable: the natural log of wealth and wealth quintiles

(with dummy variables indicating the quintile to which the family belonged). To log transform the wealth variable, we added a constant to the wealth value to deal with negative and zero values (which cannot be log transformed). Results for logged wealth and wealth quartiles were similar; for simplicity's sake, we present models with the log of wealth except where results differed.

To measure income level and income volatility, each year (or every other year since 1994), respondents were asked to report the income received by all household members in the prior calendar year from wages, salaries, and business earnings. Family income for each year was converted to 2013 inflation-adjusted dollars so that income was comparable across years. Because research has shown that cumulative income is a stronger predictor of children's outcomes than income in any period (Mayer 1997), we created income measures that drew data from the year prior to birth through age of the predicted outcome. Income was also adjusted for family size in the same way as wealth so that income and wealth coefficients were comparable. Income level was transformed by the natural log to correct for skew (first adding a constant to values to shift the distribution so there were no zero values) and because prior literature has shown that income increases tend to matter more for families with lower incomes.

Income volatility measures were created for each developmental period by calculating the difference in income between two consecutive years (subtracting previous income from income earned two years later). We used the two-year span because after 1994, income was only measured every two years and we wanted a consistent measure over time. Next, we created dichotomous indicators reflecting whether the family had a negative income shock of at least 25 percent in the two-year span. We chose the 25 percent cutoff based on income volatility research (Hardy 2014; Miller et al. 2020); models included negative income shocks only also based on our prior work (Miller et al. 2020; Miller and Votruba-Drzal 2017) and empirical analyses with these data showing that only negative income shocks, not positive shocks, related to child outcomes. Finally, the volatility measure was accumulated from the year before

birth through the predicted outcome in each model in order to denote how many times the family experienced an income loss of at least 25 percent.

As to child and family covariates, demographic characteristics that could influence economic fluctuations and child outcomes were included in the models. Child covariates included child age in months, gender (female reference group), and race-ethnicity, categorized as Latinx, black, white, or other racial-ethnic group (Latinx being the reference group). Using a series of dummy variables, we also controlled for the cohort in which the child was born. Family covariates included the number of children under the age of eighteen living in the house, whether the family lived in an urban or rural area, age of the mother at the birth of the first child, whether the mother was married, and the number of weeks the mother has been unemployed in the past calendar year. The number of years of maternal education was coded as a continuous variable that ranged from zero to twenty. We also controlled for mothers' score on the Air Force Qualification Test (AFQT), which measures aptitude on a variety of intellectual tasks, such as arithmetic reasoning, word knowledge, paragraph comprehension, and numerical operations. All time-varying characteristics were averaged across waves from birth to the predicted outcome age.

Analytic Plan

Our first aim was to examine the main effects of wealth on reading and math achievement and internalizing and externalizing behavior across three developmental stages: early childhood (age five and six), middle childhood (age nine and ten), and adolescence (age thirteen and fourteen). To do so, we estimated separate ordinary least squares regressions for each developmental stage to predict each outcome with wealth, controlling for other aspects of economic circumstances. Thus, the child outcome was predicted by wealth, income level, income volatility, and all covariates. Our second aim was to explore whether wealth moderated the effects of income level and income volatility on child development. For this, we reestimated the models with the addition of interactions between wealth and income level and income volatility.

RESULTS

Table 1 presents weighted descriptive statistics for the full sample and broken out by developmental stage. Descriptive statistics show that the sample is diverse in terms of race-ethnicity, economic conditions, and child outcomes. In addition, the difference between the mean and median of wealth and family income is large, illustrating the skew in these variables. When examining the development of behavioral problems over time, on average, children's internalizing problems slightly increased and externalizing problems generally decreased. Children, on average, gained math and reading skills over time.

Associations Between Wealth and Development

Results of analyses associating wealth with early childhood achievement and behavioral functioning are presented in table 2. Holding annual income and income volatility constant, wealth was related to externalizing problems and both math and reading scores. Every log unit increase in wealth (about a 2.7-fold increase) was associated with reductions in externalizing behavior problems of 0.30 of a standard deviation (SD). This same increase in wealth was also linked to higher achievement scores (0.23 SD for math and 0.17 SD for reading). Analyses using wealth quintiles revealed some links between family wealth and internalizing problems (see table 4). Children in the first and second wealth quintile had higher levels of internalizing problems than those in the third, fourth, and fifth quintiles.

Table 3 presents the results of models predicting middle childhood outcomes with family wealth. Wealth was related to reduced behavior problems and higher achievement even after controlling for income level and volatility, plus numerous other child and family characteristics. Specifically, log unit increases in family wealth were related to decreases in internalizing and externalizing of 0.18 SD and 0.19 SD, respectively, and higher scores on math and reading assessments (0.23 SD and 0.16 SD, respectively). Analyses using wealth quintiles re-

Table 1. Descriptive Statistics (N = 8,095)

Variable	Early Childhood Mean or Percent (SD)	Median	Middle Childhood Mean or Percent (SD)	Median	Adolescence Mean or Percent (SD)	Median
Child outcomes						
Internalizing	1.10		1.41		1.40	
	(1.54)		(1.82)		(1.95)	
Externalizing	6.07		6.04		5.91	
	(4.62)		(4.96)		(5.07)	
PIAT Mathematics	14.28		42.02		55.43	
	(5.72)		(10.89)		(11.85)	
PIAT Reading and Comprehension	15.71		42.02		56.72	
	(5.69)		(10.88)		(12.26)	
Economic circumstances						
Family wealth	$95,606	$15,123	$112,420	$21,393	$126,372	$26,838
	($269,312)		($290,657)		($432,820)	
Family wealth weighted by family size	$48,034		$55,873		$62,553	
	($135,344)		($146,083)		($151,704)	
Family income	$49,362	$35,918	$51,449	$38,307	$52,782	$39,480
	($55,280)		($55,637)		($55,651)	
Family income weighted by family size	$26,283	$19,066	$26,856	$20,172	$27,324	$20,783
	($29,969)		($29,244)		($28,892)	
Negative income shocks	0.49		0.82		1.09	
	(0.50)		(0.72)		(0.89)	
Child gender: male	50.6%		50.6%		50.6%	
Child age at assessment (years)	5.5		9.5		13.5	
	(0.50)		(1.71)		(0.50)	
Mother's race: Latino	20.2%		20.2%		20.2%	
Black	26.9%		26.9%		26.9%	
Other	52.9%		52.9%		52.9%	
Percentage of waves mother is married	68.2%		66.9%		66.0%	
Mother is employed	81.7%		83.3%		84.2%	
Household is urban	76.4%		74.8%		73.8%	
Mother's years of education	12.55		12.61		12.65	
	(2.38)		(2.39)		(2.39)	
Mother's education squared	162.78		164.3		165.43	
	(60.74)		(61.00)		(61.34)	
AFQT	39,395		39,395		39,395	
	(28,197)		(28,197)		(28,197)	
Maternal age at birth of first child	22.45		22.45		22.45	
	(4.91)		(4.91)		(4.91)	
Number of children in house	2.07		2.23		2.26	
	(1.06)		(1.05)		(1.03)	

Source: Authors' calculations from the NLSY.

Table 2. Early Childhood Outcomes Predicted By Family Economic Characteristics

Predictors	Internalizing Coef. (SE)	Externalizing Coef. (SE)	Math Coef. (SE)	Reading Coef. (SE)
Income	−0.04***	−0.03***	0.02***	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)
Income shock	0.03	0.06*	−0.09**	−0.07*
	(0.03)	(0.03)	(0.03)	(0.03)
Wealth	−0.10	−0.27***	0.19**	0.20***
	(0.06)	(0.06)	(0.07)	(0.06)
Black	−0.03	−0.02	−0.04	0.23***
	(0.04)	(0.04)	(0.04)	(0.04)
Other	−0.00	0.09**	0.18***	0.02
	(0.04)	(0.03)	(0.04)	(0.04)
Marital status	−0.05	−0.12**	0.00	0.07*
	(0.04)	(0.04)	(0.04)	(0.03)
AFQT	−0.08***	−0.02	0.16***	0.19***
	(0.02)	(0.02)	(0.02)	(0.02)
Female	−0.02	−0.20***	0.09***	0.21***
	(0.02)	(0.02)	(0.03)	(0.02)
Mother's education	−0.10**	−0.11***	0.04	0.09**
	(0.03)	(0.03)	(0.04)	(0.03)
Mother's education squared	0.00**	0.00*	0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Mother's employment	−0.06	−0.14**	0.02	0.08
	(0.05)	(0.04)	(0.05)	(0.05)
Number of children	−0.00	−0.05***	−0.07***	−0.14***
	(0.01)	(0.01)	(0.02)	(0.02)
Urbanicity	−0.08*	−0.05	0.04	0.09**
	(0.03)	(0.03)	(0.03)	(0.03)
Mother's age at birth	0.01*	−0.00	−0.00	−0.01[+]
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	2.42**	5.35***	−3.33***	−3.60***
	(0.81)	(0.79)	(0.87)	(0.73)

Source: Authors' calculations from the NLSY.
Note: N = 8,095. Standard errors in parentheses. Child cohort was included in the model but not presented for parsimony.
[+]$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

vealed some links between family wealth and internalizing problems (table 4). Children in the first wealth quintile had higher levels of internalizing problems than children in the second, third, fourth, and fifth quintiles.

Last, the results of models predicting adolescent outcomes with family wealth are presented in table 5. Links between family wealth and externalizing, math, and reading were observed. Wealth was negatively related to externalizing problems (0.18 SD reduction per log increase in wealth), and positively linked to math and reading achievement (respectively, 0.29 SD and 0.21 SD increases per log unit increase in wealth). Much as in early stages, models using wealth quintiles (see table 4) showed

Table 3. Middle Childhood Outcomes Predicted by Family Economic Characteristics

Predictors	Internalizing Coef. (SE)	Externalizing Coef. (SE)	Math Coef. (SE)	Reading Coef. (SE)
Income	−0.05***	−0.03***	0.03***	0.03***
	(0.01)	(0.01)	(0.01)	(0.01)
Income shock	0.04*	0.01	−0.01	−0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Wealth	−0.18**	−0.19**	0.23***	0.16**
	(0.06)	(0.07)	(0.06)	(0.06)
Black	−0.09*	0.00	−0.13***	−0.09**
	(0.04)	(0.04)	(0.04)	(0.03)
Other	0.02	0.11**	0.10*	0.02
	(0.03)	(0.04)	(0.04)	(0.03)
Marital status	−0.13***	−0.18***	0.01	0.10**
	(0.04)	(0.04)	(0.03)	(0.03)
AFQT	0.01	0.02	0.24***	0.26***
	(0.02)	(0.02)	(0.02)	(0.02)
Female	−0.08**	−0.27***	−0.03	0.17***
	(0.02)	(0.03)	(0.02)	(0.02)
Mother's education	−0.13***	−0.11**	0.03	0.05[+]
	(0.03)	(0.04)	(0.03)	(0.03)
Mother's education squared	0.00***	0.00*	0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Mother's employment	−0.04	−0.22***	−0.06	0.05
	(0.07)	(0.06)	(0.06)	(0.06)
Number of children	−0.02[+]	−0.05**	−0.06***	−0.12***
	(0.01)	(0.01)	(0.01)	(0.01)
Urbanicity	−0.05	−0.05	0.06[+]	0.03
	(0.04)	(0.04)	(0.03)	(0.03)
Mother's age at birth	0.00	−0.00	−0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	4.02***	4.62***	−3.46***	−2.84***
	(0.78)	(0.89)	(0.758)	(0.73)

Source: Authors' calculations from the NLSY.
Note: N = 8,095. Standard errors in parentheses. Child cohort was included in the model but not presented for parsimony.
[+]$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

that adolescents falling in the lowest quintile of family wealth tended to exhibit higher levels of internalizing problems than children in wealthier families (ranging from 0.11 to 0.23 SD). Unlike in early childhood, adolescents in the first and second wealth showed significantly different levels of internalizing, with children in the lowest quintile exhibiting 0.11 SD more internalizing problems than those in the second quintile on average.

Associations Between Income Level, Income Volatility, and Child Development

Next, we tested whether links between child outcomes and both income volatility and income level vary according to level of wealth. Overall, the evidence suggested that family wealth buffers children's development from low levels of family income across all developmental stages. However, wealth did not moderate links between achievement and volatility.

Table 4. Main Effects and Interactions for Income Dynamics and Categorical Wealth for Internalizing

| | Internalizing | | | | | |
| | Early Childhood | | Middle Childhood | | Adolescence | |
Predictors	Coef.	SE	Coef.	SE	Coef.	SE
Main effects						
Income	–0.04***	(0.01)	–0.04***	(0.01)	–0.05***	(0.01)
Income shocks	0.02	(0.03)	0.04*	(0.02)	0.05**	(0.02)
Wealth: second quantile	–0.00 [abc]	(0.04)	–0.09* [abc]	(0.04)	–0.11** [ab]	(0.04)
Wealth: third quantile	–0.10* [a]	(0.04)	–0.18*** [ade]	(0.04)	–0.16***	(0.04)
Wealth: fourth quantile	–0.15*** [b]	(0.05)	–0.26*** [bd]	(0.05)	–0.21*** [a]	(0.05)
Wealth: fifth quantile	–0.16** [c]	(0.05)	–0.29*** [ce]	(0.05)	–0.23*** [b]	(0.05)
Constant	1.12***	(0.24)	1.63***	(0.24)	1.61***	(0.26)
Wealth interactions						
with income						
Income	–0.05***	(0.01)	–0.04***	(0.01)	–0.05***	(0.01)
Income shocks	0.02	(0.03)	0.04*	(0.02)	0.05**	(0.02)
Wealth: second quantile	–0.08 [a]	(0.10)	–0.23+	(0.13)	–0.23	(0.16)
Wealth: third quantile	–0.20	(0.17)	–0.17	(0.20)	0.02	(0.26)
Wealth: fourth quantile	–0.18	(0.24)	–0.15	(0.32)	–0.02	(0.40)
Wealth: fifth quantile	–0.66** [b]	(0.25)	–0.72*	(0.34)	–0.65+	(0.37)
Income*second quantile	0.01	(0.01)	0.02	(0.02)	0.01	(0.02)
Income*third quantile	0.01	(0.02)	0.00	(0.02)	–0.02	(0.03)
Income*fourth quantile	0.01	(0.02)	–0.01	(0.03)	–0.02	(0.04)
Income*fifth quantile	0.05*	(0.02)	0.04	(0.03)	0.04	(0.03)
Constant	1.14***	(0.24)	1.65***	(0.24)	1.62***	(0.27)
Wealth interactions with						
income shocks						
Income	–0.04***	(0.01)	–0.04***	(0.01)	–0.05***	(0.01)
Income shocks	0.04	(0.06)	0.01	(0.04)	0.08*	(0.04)
Wealth: second quantile	–0.04	(0.06)	–0.11 [ab]	(0.07)	–0.09	(0.08)
Wealth: third quantile	–0.06	(0.06)	–0.25***	(0.07)	–0.08	(0.09)
Wealth: fourth quantile	–0.12+	(0.06)	–0.27*** [a]	(0.07)	–0.14	(0.09)
Wealth: fifth quantile	–0.12+	(0.07)	–0.35*** [b]	(0.08)	–0.20*	(0.09)
Income shocks*second quantile	0.06	(0.08)	0.02	(0.06)	–0.02	(0.05)
Income shocks*third quantile	–0.06	(0.08)	0.07	(0.06)	–0.06	(0.05)
Income shocks*fourth quantile	–0.04	(0.08)	0.01	(0.06)	–0.05	(0.05)
Income shocks*fifth quantile	–0.06	(0.08)	0.07	(0.06)	–0.02	(0.06)
Constant	1.10***	(0.24)	1.64***	(0.24)	1.59***	(0.27)

Source: Authors' calculations from the NLSY.

Note: N = 8,095. Standard errors in parentheses. Wealth quintiles are compared to the first quintile. Post hoc analyses tested the significance of differences between other wealth quintiles. Within each column, coefficients with shared superscript letters are different from each other at the $p < .05$ level. Child (cohort, gender, and race), mother (marital status, AFQT, education, employment status, and age at birth of first child), and household (number of children at home and urbanicity) characteristics were included in the model but not presented for parsimony.

$^+p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

Table 5. Adolescent Outcomes Predicted by Family Economic Characteristics

Predictors	Internalizing Coef. (SE)	Externalizing Coef. (SE)	Math Coef. (SE)	Reading Coef. (SE)
Income	−0.06***	−0.05***	0.02***	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)
Income shock	0.05**	0.06***	−0.03+	−0.00
	(0.02)	(0.02)	(0.01)	(0.01)
Wealth	−0.11+	−0.18**	0.29***	0.21***
	(0.06)	(0.06)	(0.06)	(0.06)
Black	−0.13*	−0.02	−0.13**	−0.28***
	(0.05)	(0.04)	(0.04)	(0.03)
Other	0.05	0.14**	0.13***	−0.05+
	(0.04)	(0.04)	(0.04)	(0.03)
Marital status	−0.07+	−0.23***	0.10**	0.15***
	(0.04)	(0.04)	(0.04)	(0.03)
AFQT	0.01	0.03	0.27***	0.28***
	(0.02)	(0.02)	(0.02)	(0.02)
Female	−0.03	−0.16***	−0.07**	0.11***
	(0.03)	(0.03)	(0.02)	(0.02)
Mother's education	−0.10**	−0.06	0.03	0.07*
	(0.03)	(0.04)	(0.03)	(0.03)
Mother's education squared	0.00**	0.00	−0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Mother's employment	−0.24**	−0.39***	−0.01	0.07
	(0.08)	(0.08)	(0.06)	(0.06)
Number of children	−0.04**	−0.03*	−0.04***	−0.11***
	(0.01)	(0.02)	(0.01)	(0.01)
Urbanicity	−0.00	−0.00	0.00	0.01
	(0.04)	(0.04)	(0.03)	(0.03)
Mother's age at birth	−0.00	−0.00	0.00	−0.00
	(0.00)	(0.00)	(0.00)	(0.00)
Constant	3.025***	4.05***	−4.34***	−3.67***
	(0.739)	(0.83)	(0.75)	(0.75)

Source: Authors' calculations from the NLSY.
Note: N = 8,095. Standard errors in parentheses. Child cohort was included in the model but not presented for parsimony.
+*p* < .1; **p* < .05; ***p* < .01; ****p* < .001

Table 6 presents the results of models testing interactions between wealth and income predicting early childhood development. Only two interactions were significant. Wealth buffered the effects of volatility on early childhood externalizing problems (table 6, panel B). As wealth increased, positive links between volatility and externalizing diminished. Wealth also buffered the effects of income level on early childhood behavior problems. Specifically, as

wealth increased, negative links between annual income and internalizing grew smaller (table 6, panel A).

Wealth attenuated links between income level and child outcomes in middle childhood (table 7, panel A). As wealth increased, the negative associations between annual income and internalizing and externalizing behaviors and the positive relations between annual income and math achievement grew smaller. Finally,

Table 6. Results of Interactions Between Wealth and Income Dynamics for Early Childhood

Predictors	Internalizing Coef. (SE)	Externalizing Coef. (SE)	Math Coef. (SE)	Reading Coef. (SE)
Panel A. Wealth interactions with income				
Income	−1.35**	−0.95	0.31	0.15
	(0.49)	(0.69)	(0.41)	(0.40)
Income shocks	0.03	0.06*	−0.09***	−0.07*
	(0.03)	(0.03)	(0.03)	(0.03)
Wealth	−1.24**	−1.08[+]	0.44	0.31
	(0.44)	(0.62)	(0.37)	(0.35)
Wealth*income	0.10**	0.07	−0.02	−0.01
	(0.04)	(0.06)	(0.03)	(0.03)
Constant	16.74**	15.41*	−6.51	−5.05
	(5.52)	(7.76)	(4.59)	(4.41)
Panel B. Wealth interactions with volatility				
Income	−0.04***	−0.03***	0.02***	0.02*
	(0.01)	(0.01)	(0.01)	(0.01)
Income shocks	1.78	3.12*	1.16	−1.21
	(1.35)	(1.25)	(1.26)	(1.60)
Wealth	−0.02	−0.14[+]	0.24**	0.15
	(0.08)	(0.08)	(0.08)	(0.09)
Wealth*income shock	−0.14	−0.24*	−0.10	0.09
	(0.11)	(0.10)	(0.10)	(0.13)
Constant	1.48	3.70***	−4.00***	−2.98**
	(1.07)	(1.03)	(1.01)	(1.11)

Source: Authors' calculations from the NLSY.

Note: N = 8,095. Standard errors in parentheses. Child (cohort, gender, and race), mother (marital status, AFQT, education, employment status, and age at birth of first child), and household (number of children at home and urbanicity) characteristics were included in the model but not presented for parsimony.

[+]$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

wealth buffered the effects of income level on adolescent behavior problems and achievement (table 8, panel A). Specifically, increases in wealth buffered the negative associations between annual income and externalizing behaviors and the positive relations between annual income and math and reading achievement.

DISCUSSION

Using data from a nationally representative cohort of families and children, this study examines how wealth relates to child achievement and behavior, controlling for other aspects of family economic conditions. It adds to the

wealth literature by using detailed information on wealth measured from before the child's birth through adolescence. Moreover, it documents associations during three distinct developmental periods: early childhood, middle childhood, and adolescence. Last, this study is one of the first to explore whether wealth acts as a buffer for children experiencing low levels of income or high income volatility.

Results showed three general patterns. First, more wealth was related to better achievement and fewer behavioral problems at all developmental stages. Next, contrary to our hypotheses, wealth associations were quite stable over

Table 7. Results of Interactions Between Wealth and Income Dynamics for Middle Childhood

Predictors	Internalizing Coef. (SE)	Externalizing Coef. (SE)	Math Coef. (SE)	Reading Coef. (SE)
Panel A. Wealth interactions with income				
Income	–1.51*	–1.15[+]	1.55**	0.81[+]
	(0.62)	(0.60)	(0.49)	(0.46)
Income shocks	0.04*	0.01	–0.01	–0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Wealth	–1.47**	–1.19*	1.57***	0.85*
	(0.56)	(0.54)	(0.44)	(0.41)
Wealth*income	0.12*	0.09[+]	–0.12**	–0.06[+]
	(0.05)	(0.05)	(0.04)	(0.04)
Constant	20.21**	17.06*	–20.25***	–11.53*
	(6.93)	(6.75)	(5.55)	(5.16)
Panel B. Wealth interactions with volatility				
Income	–0.05***	–0.03***	0.03***	0.03***
	(0.01)	(0.01)	(0.01)	(0.01)
Income shocks	–0.38	–0.38	0.93	0.05
	(0.85)	(0.86)	(0.79)	(0.84)
Wealth	–0.21*	–0.22*	0.30***	0.16[+]
	(0.09)	(0.10)	(0.08)	(0.09)
Wealth*income shocks	0.03	0.03	–0.07	–0.00
	(0.07)	(0.07)	(0.06)	(0.07)
Constant	4.41***	4.98***	–4.33***	–2.90**
	(1.12)	(1.26)	(1.04)	(1.12)

Source: Authors' calculations from the NLSY.

Note: N = 8,095. Standard errors in parentheses. Child (cohort, gender, and race), mother (marital status, AFQT, education, employment status, and age at birth of first child), and household (number of children at home and urbanicity) characteristics were included in the model but not presented for parsimony.

[+]$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

child age. Finally, evidence suggests that links between income level, but not volatility, and child functioning vary by level of family wealth. Taken together, the results provide a better understanding of the role wealth and income dynamics play—separately and jointly—in the academic and behavioral development across childhood.

Associations Across Domains and Development

This study provides new evidence of wealth's association with both academic and behavioral functioning at three developmental stages.

Controlling for both income level and volatility, as well as for a multitude of other characteristics of parents and children, wealth consistently predicted reading and math achievement as well as externalizing problems. Alternate model specifications showed links between wealth and internalizing across development as well. These links were apparent when comparing children in low-wealth households to very wealthy children, but almost no differences were observed when comparing mid-wealth children with their wealthier peers. To put these associations into perspective, hypothetically considering low-income families

Table 8. Results of Interactions Between Wealth and Income Dynamics for Adolescence

Predictors	Internalizing Coef. (SE)	Externalizing Coef. (SE)	Math Coef. (SE)	Reading Coef. (SE)
Panel A. Wealth interactions with income				
Income	−1.42+	−1.71*	1.83***	2.06***
	(0.73)	(0.70)	(0.44)	(0.50)
Income shocks	0.05**	0.06***	−0.03*	−0.01
	(0.02)	(0.02)	(0.01)	(0.01)
Wealth	−1.31*	−1.65**	1.89***	2.00***
	(0.66)	(0.62)	(0.39)	(0.46)
Wealth*income	0.11+	0.13*	−0.14***	−0.16***
	(0.06)	(0.06)	(0.03)	(0.04)
Constant	18.11*	22.46**	−24.35***	−26.04***
	(8.27)	(7.77)	(4.95)	(5.80)
Panel B. Wealth interactions with volatility				
Income	−0.06***	−0.05***	0.02***	0.04***
	(0.01)	(0.01)	(0.01)	(0.01)
Income shocks	0.47	−0.51	0.55	0.82
	(0.75)	(0.67)	(0.57)	(0.63)
Wealth	−0.06	−0.23**	0.35***	0.29***
	(0.09)	(0.09)	(0.09)	(0.08)
Wealth*income shocks	−0.03	0.05	−0.05	−0.07
	(0.06)	(0.05)	(0.05)	(0.05)
Constant	2.50*	4.77***	−5.06***	−4.71***
	(1.22)	(1.18)	(1.11)	(1.05)

Source: Authors' calculations from the NLSY.
Note: N = 8,095. Standard errors in parentheses. Child (cohort, gender, and race), mother (marital status, AFQT, education, employment status, and age at birth of first child), and household (number of children at home and urbanicity) characteristics were included in the model but not presented for parsimony.
+$p < .1$; *$p < .05$; **$p < .01$; ***$p < .001$

with $1,000 in assets, holding everything else constant, our results suggest that saving a little more than $1,000 per year for five years would reduce income disparities in achievement by 40 percent and almost entirely close the socioeconomic status (SES)-behavioral gap. Or, to present another hypothetical, our results suggest decreasing the family's credit card debt from the U.S. average (about $6,000) to $1,000 would close income gaps in achievement and behavior by the same magnitude. Indeed, the wealth-child outcome associations observed in this study are much larger than the income-child outcome associations. We conducted post hoc analyses to compare the size of wealth and income coefficients to determine whether the wealth associations were significantly larger than income associations. These post hoc tests showed that in all cases where wealth is a significant predictor of achievement or behaviors, it has a stronger relation to child development than family income does. Specifically, a log unit change in wealth was linked to changes in achievement and behavior that ranged from about five to ten times larger than a similar change in family income. These findings suggest that programs and policies aimed at increasing family net worth, such as child

development accounts or debt reduction interventions, may do more to reduce SES disparities in children's academic and behavioral skills than efforts focused on increasing income alone.

This study contributes to the wealth literature in other ways as well. First, it extends the wealth literature by looking at behavioral outcomes. Given that much of the literature on wealth has focused on its implications for childhood and adult academic outcomes and, to a lesser extent, other human capital outcomes, this is an important advancement. Because we observe associations between wealth and behavior in childhood, it will be interesting to explore whether this association extends into adulthood in future studies. Second, this is the first study to document these associations across early childhood, middle childhood, and adolescence. Exploring these relations longitudinally, we were able to see that links between wealth and child outcomes remain fairly stable with age. This is inconsistent with our hypotheses and theory (Orr 2003; Yeung and Conley 2008). It is also inconsistent with work featured in this issue that showed debt, specifically child support arrears, had stronger links to child behavior problems at fifteen years old than at nine years old (Nepomnyaschy et al. 2021, this issue). This points to an important future direction for wealth research. More studies are needed that break net worth into its numerous components, like assets and debts, liquid and nonliquid assets, good debt and bad debt, or secured and unsecured debt, to get a better picture of how subcomponents of wealth relate to different aspects of child development at various ages (Conwell and Ye 2021, this issue; Nepomnyaschy et al. 2021, this issue). Also, because adolescence marks the time when children begin to understand their socioeconomic position relative to others and internalize stereotypes regarding wealthier and less wealthy families, it may be important to include information on adolescents' subjective financial well-being (Gibson-Davis and Hill 2021, this issue). Adolescents' subjective financial well-being factors into their emotions and attitudes, including feelings of depression or anxiety about their social standing or attitudes about the importance of schoolwork for their future

educational or career prospects (Shim et al. 2009). These emotions and attitudes may have a direct impact on both achievement and behavioral functioning (Shim et al. 2009). Unfortunately, the NLSY does not include a measure of adolescents' feelings of financial stress or well-being, which may be important missing information that, when accounted for, could explain associations between wealth and adolescent outcomes. Indeed, our lab is currently conducting a study that collects measures of adolescents' perceptions of financial strain and well-being, as well as measures of achievement and behavior problems and family income and wealth, in an effort to examine how these perceptions explain or alter the roles of income and wealth in their development.

As with prior studies, links between wealth and math skills were slightly stronger than wealth's links to reading achievement. This finding remains unexplained and calls for additional research exploring its etiology. Indeed, the mechanisms explaining wealth's associations with child development is an understudied area. It will be important for future research to examine more carefully the family processes, including parental investments and stress, that underlie links between wealth and children's achievement and behavior. Moderating factors may be important to consider when looking at wealth effects on child development as well. As articles in this issue highlight (Conwell and Ye 2021, this issue; Gibson-Davis and Hill 2021, this issue), racial disparities in wealth accumulation and debt avoidance are pronounced. But race may also moderate links between wealth and child outcomes. For instance, increased wealth may not confer the same or similar benefits to black families as to white families if, as research suggests, it does not buy black families the same entrée into social and cultural capital due to racial biases. When black families accrue greater wealth, it does not translate into increased social and cultural capital to the same extent as white families because of historic patterns of racism and discrimination (Conley 2010; Henry, Votruba-Drzal, and Miller 2019). Moreover, structural and historical discrimination may place black families, even when wealthy, in close proximity to spatial, relational, and intergenerational disadvantage

that may limit the extent to which wealth can be leveraged for investments in children's development (Henry, Votruba-Drzal, and Miller 2019). In this case, we would expect links between wealth and child outcomes to be weaker for black families. Other potential buffers from low levels of wealth that should be explored in future work include grandparent wealth and parental education, given that these factors may both give families social status and entrée to social and cultural capital attendant with high wealth (Gibson-Davis and Hill 2021, this issue), in which case, links between wealth and child development would be attenuated for children with wealthier grandparents or highly educated parents.

Wealth May Buffer Children in Low-Income Families

Another novel finding from this study is that wealth may buffer children against the negative academic and behavioral implications of low family income. It is important to acknowledge, however, that the protective role of family wealth tended to be selective and was not consistently present for all outcomes at every developmental stage. In particular, the importance of wealth as a buffer from low levels of income appeared to grow as children age. Wealth moderation was minimal in early childhood, but present for both academic and behavioral outcomes in middle childhood and adolescence.

These findings are consistent with our hypotheses and research on the role of wealth in stabilizing family finances (Rauscher and Elliott 2016). The extent to which families leverage wealth to stabilize family income or provide an influx of money or that families have less debt may help stave off stress accompanying periods of low income or increase the money available to meet financial obligations or make promotive investments in children. Interestingly, although our hypotheses regarding the growing importance of family wealth as youth age were not supported by the results of main effects of wealth, we do see in the moderation analyses that the buffering role of wealth does indeed grow as children get older. This perhaps suggests that as children approach adolescence, the status and cultural

capital that comes with high levels of wealth can protect children from the harmful effects of low levels of income in ways that it cannot when children are in early childhood and less aware of their social standing (Orr 2003; Yeung and Conley 2008). Visible forms of wealth like driving the "right car," living in a "good neighborhood" in a "nice house" or attending a "good school" may give older children a sense of relative class privilege, confidence, and security. Young children are less likely to pick up on these status symbols. Regardless of income, wealth may give families access to the social and cultural capital enabling them to connect their children to social networks that put children on trajectories of academic success and guide them away from maladaptive behaviors that manifest during late childhood and early adolescence. Thus, even in times of economic hardship or low income, wealth could serve as a guarantee that these youth are exposed to learning opportunities and experiences that promote high achievement and opportunities for relationships and interactions that promote positive social and emotional development. Additionally, wealth may relate to parent and teacher expectations of academic success, all of which become more important as children age.

Surprisingly, the buffering role of wealth did not extend to income volatility. In fact, our findings related to the role of income volatility in predicting child outcomes were generally weaker in all analyses. This may be due to the volatility measure used in this study. Given the sampling time frame of the NLSY, our volatility measure represented changes in income over two years. However, the impact of income volatility on families and children may be driven more by variability in income earned week to week or month to month more so than biyearly income changes (Hill et al. 2013). The NLSY does not include data on families' earnings at shorter intervals, but we are currently engaged in a study that collects monthly reports of families' income, as well as a host of other measures, which will allow us to create month-to-month measures of income volatility and test how they relate to child and family functioning. Future work would be wise to test whether volatility in family wealth has implications for

children's development—a question that has yet to be addressed in the literature.

Limitations

First, these results are correlational and therefore must be interpreted cautiously. Family income dynamics and wealth are not randomly assigned. Instead, parents make choices that affect their earnings and wealth, and the characteristics influencing their selections regarding economic factors also shape the proximal contexts in which their children develop. To reduce bias, we included covariates for factors such as marital status and employment in our models. We also controlled for mothers' scores on the AFQT, which is widely considered a time-invariant measure of academic aptitude related to economic conditions, parenting, and children's development (Votruba-Drzal 2006). It is still possible, however, that observed associations between wealth and child outcomes are attributable to unmeasured characteristics of parents or children.

Despite trade-offs between internal and external validity, both are important in developmental studies (Miller, Henry, and Votruba-Drzal 2016). Studies using experimental or quasi-experimental designs often use samples that represent a small, unique population (see, for example, Akee et al. 2010; Conger et al. 1994; Gennetian and Miller 2002). A strength of this study is its external validity: it uses a nationally representative sample of women and their children to extend and replicate findings from the literature on family economic conditions and child development (Miller, Henry, and Votruba-Drzal 2016). Nonetheless, additional research on income and development using experimental data or quasi-experimental techniques is necessary to strengthen causal inference to inform programs and policies aimed at eliminating economic disparities in child outcomes (Miller, Henry, and Votruba-Drzal 2016).

CONCLUSION

Using representative data, this study provides useful information regarding the role of wealth in childhood academic and behavioral disparities. Throughout childhood and adolescence, wealth had independent links to child develop-

ment after accounting for links between income level and volatility and development. Moreover, results suggest that wealth may buffer children from associations between low levels of income and maladaptive outcomes. Future studies to build on this research are needed to inform programs and policies aimed at narrowing economic disparities in children's life chances. Yet this work indicates that wealth is an important facet of family economic circumstances when it comes to child well-being, and it is deserving of additional research and policy attention.

REFERENCES

Akee, Randall KQ, William E. Copeland, Gordon Keeler, Adrian Angold, and E. Jane Costello. 2010. "Parents' Incomes and Children's Outcomes: A Quasi-Experiment Using Transfer Payments from Casino Profits." *American Economic Journal: Applied Economics* 2(1): 86–115.

Baker, Paula, C. Canada K. Keck, Frank L. Mott, Stephen V. Quinlan. 1993. *NLSY Child Handbook, Revised Edition: A Guide to the 1986–1990 National Longitudinal Survey of Youth Data*. Columbus: Center for Human Resource Research, Ohio State University.

Becker, Gary S. 1991. "Family Background and the Opportunities of Children." In *A Treatise on the Family*, by Gary S. Becker. Cambridge, Mass: Harvard University Press.

Berger, Lawrence M., and Jason N. Houle. 2016. "Parental Debt and Children's Socioemotional Well-Being." *Pediatrics* 137(2): e20153059.

Blair, Clancy, and Cybele Raver. 2016. "Poverty, Stress, and Brain Development: New Directions for Prevention and Intervention." *Academic Pediatrics* 16(3): S30–S36.

Blau, David M. 1999. "The Effect of Income on Child Development." *Review of Economics and Statistics* 81(2): 261–76.

Bourdieu, Pierre, and Jean-Claude Passeron. 1990. *Reproduction in Education, Society and Culture*. Newbury Park, Calif.: Sage Publications.

Brotman, Laurie Miller, Colleen R. O'Neal, Keng-Yen Huang, Kathleen Kiely Gouley, Amanda Rosenfelt, and Patrick E. Shrout. 2009. "An Experimental Test of Parenting Practices as a Mediator of Early Childhood Physical Aggression." *Journal of Child Psychology and Psychiatry* 50(3): 235–45.

Brown, Sarah, Karl Taylor, and Stephen Wheatley Price. 2005. "Debt and Distress: Evaluating the Psychological Cost of Credit." *Journal of Economic Psychology* 26(5): 642–63.

Calarco, Jessica. 2014. "Coached for the Classroom: Parents' Cultural Transmission and Children's Reproduction of Educational Inequalities." *American Sociological Review* 79(5): 1015–37.

Center for Human Resource Research. 2002. *National Longitudinal Survey of Youth 1979 Cohort, 1979–2000 (Rounds 1–19)*. Columbus: The Ohio State University, Bureau of Labor Statistics, and U.S. Department of Labor.

Chazan-Cohen, Rachel, Helen Raikes, Jeanne Brooks-Gunn, Catherine Ayoub, Barbara Alexander Pan, Ellen E. Kisker, Lori Roggman, and Allison Sidle Fuligni. 2009. "Low-Income Children's School Readiness: Parent Contributions over the First Five Years." *Early Education and Development* 20(6): 958–77.

Conger, Rand D., Xiaojia Ge, Glen H. Elder Jr., Frederick O. Lorenz, and Ronald L. Simons. 1994. "Economic Stress, Coercive Family Process, and Developmental Problems of Adolescents." *Child Development* 65(2): 541–61.

Conley, Dalton. 1999. *Being Black, Living in the Red: Race, Wealth, and Social Policy in America*. Berkeley: University of California Press.

Conley, David T. 2010. *College and Career Ready: Helping All Students Succeed Beyond High School.* San Francisco: Jossey-Bass.

Conwell, Jordan A., and Leafia Zi Ye. 2021. "All Wealth Is Not Created Equal: Race, Parental Net Worth, and Children's Achievement." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 101–21. DOI: 10.7758/RSF.2021 .7.3.05.

Covay, Elizabeth, and William Carbonaro. 2010. "After the Bell: Participation in Extracurricular Activities, Classroom Behavior, and Academic Achievement." *Sociology of Education* 83(1): 20–45.

Diemer, Matthew A., Aixa. D. Marchand, and Rashmita S. Mistry. 2020. "Charting How Wealth Shapes Educational Pathways from Childhood to Early Adulthood: A Developmental Process Model." *Journal of Youth and Adolescence* 49(5): 1073–91.

Drentea, Patricia, and Paul J. Lavrakas. 2000. "Over the Limit: The Association Among Health, Race and Debt." *Social Science and Medicine* 50(4): 517–29.

Duncan, Greg J., Chantelle J. Dowsett, Amy Claessens, Katherine Magnuson, Aletha C. Huston, Pamela Klebanov, Linda S. Pagani, Leon Feinstein, Mimi Engel, Jeanne Brooks-Gunn, Holly Sexton, and Kathryn Duckworth. 2007. "School Readiness and Later Achievement." *Developmental Psychology* 43(6): 1428–46.

Duncan, Greg J., and Katherine Magnuson. 2011. "The Nature and Impact of Early Achievement Skills, Attention Skills, and Behavior Problems." In *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane. New York: Russell Sage Foundation.

Dunn, Lucia F., and Ida A. Mirzaie. 2016. "Consumer Debt Stress, Changes in Household Debt, and the Great Recession." *Economic Inquiry* 54(1): 201–14.

Easton-Brooks, Donald, and Alan Davis. 2007. "Wealth, Traditional Socioeconomic Indicators, and the Achievement Debt." *Journal of Negro Education* 76(4): 530–41.

Elliott, William, III, Mesmin Destin, and Terri Friedline. 2011. "Taking Stock of Ten Years of Research on the Relationship Between Assets and Children's Educational Outcomes: Implications for Theory, Policy and Intervention." *Children and Youth Services Review* 33(11): 2312–28.

Evans, Gary W., Carrie Gonnella, Lyscha A. Marcynyszyn, Lauren Gentile, and Nicholas Salpekar. 2005. "The Role of Chaos in Poverty and Children's Socioemotional Adjustment." *Psychological Science* 16(7): 560–65.

Farah, Martha J., Laura Betancourt, David M. Shera, Jessica H. Savage, Joan M. Giannetta, Nancy L. Brodsky, Elsa K. Malmud, and Hallam Hurt. 2008. "Environmental Stimulation, Parental Nurturance and Cognitive Development in Humans." *Developmental Science* 11(5): 793–801.

Ford, Karly Sarita, and Jason Thompson. 2016. "Inherited Prestige: Intergenerational Access to Selective Universities in the United States." *Research in Social Stratification and Mobility* 46(1): 86–98.

Garcia, Emma. 2015. *Inequalities at the Starting Gate: Cognitive and Noncognitive Skills Gaps Between 2010–2011 Kindergarten Classmates*. Washington, D.C.: Economic Policy Institute.

Gennetian, Lisa A., and Cynthia Miller. 2002. "Children and Welfare Reform: A View from an Experimental Welfare Program in Minnesota." *Child Development* 73(2): 601–20.

Gershoff, Elizabeth T., J. Lawrence Aber, C. Cybele Raver, and Mary Clare Lennon. 2007. "Income Is Not Enough: Incorporating Material Hardship into Models of Income Associations with Parenting and Child Development." *Child Development* 78(1): 70–95.

Gibson-Davis, Christina, and Heather D. Hill. 2021. "Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 1–26. DOI: 10.7758/RSF.2021.7.3.01.

Gibson-Davis, Christina M., and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55(3): 1009–32.

Grinstein-Weiss, Michal, Trina R. Shanks, and Sondra G. Beverly. 2014. "Family Assets and Child Outcomes: Evidence and Directions." *The Future of Children* 24(1): 147–70.

Hardy, Bradley. 2014. "Childhood Income Volatility and Adult Outcomes." *Demography* 51(5): 1641–65.

Heberle, Amy E., and Alice S. Carter. 2015. "Cognitive Aspects of Young Children's Experience of Economic Disadvantage." *Psychological Bulletin* 141(4): 723–46.

Heckman, James J. 2000. "Policies to Foster Human Capital". *Research in Economics* 54(1): 3–56.

Henry, Daphne A., Elizabeth Votruba-Drzal, and Portia Miller. 2019. "Child Development at the Intersection of Race and SES: An Overview." *Advances in Child Development and Behavior* 57:1–25.

Hill, Heather D., Pamela Morris, Lisa A. Gennetian, Sharon Wolf, and Carly Tubbs. 2013. "The Consequences of Income Instability for Children's Well-Being." *Child Development Perspectives* 7(2): 85–90.

Karagiannaki, Eleni. 2017. "The Effect of Parental Wealth on Children's Outcomes in Early Adulthood." *Journal of Economic Inequality* 15(3): 217–43.

Lareau, Annette. 2015. "Cultural Knowledge and Social Inequality." *American Sociological Review* 80(1): 1–27.

Lê-Scherban, Félice, Allison B. Brenner, and Robert F. Schoeni. 2016. "Childhood Family Wealth and Mental Health in a National Cohort of Young Adults." *SSM—Population Health* 2 (December): 798–806.

Lewis, Michael, and Karen D. Rudolph. 2014. *Handbook of Developmental Psychopathology*. New York: Springer Science and Business Media.

Luthar, Suniya S., and Samuel H. Barkin. 2012. "Are Affluent Youth Truly 'At Risk'? Vulnerability and Resilience Across Three Diverse Samples." *Development and Psychopathology* 24(2): 429–49.

Magnuson, Katherine A., and Elizabeth Votruba-Drzal. 2008. "Enduring Influences of Childhood Poverty." In *Changing Poverty, Changing Policies*, edited by Maria Cancian and Sheldon Danziger. New York: Russell Sage Foundation.

Markwardt, Frederick C. 1997. *Peabody Individual Achievement Test-Revised/Normative Update*. Minneapolis, Minn.: Pearson Assessments.

Mayer, Susan. 1997. *What Money Can't Buy: Family Income and Children's Life Chances*. Cambridge, Mass.: Harvard University Press.

Metsäpelto, Riitta-Leena, and Lea Pulkkinen. 2012. "Socioemotional Behavior and School Achievement in Relation to Extracurricular Activity Participation in Middle Childhood." *Scandinavian Journal of Educational Research* 56(2): 167–82.

Miller, Portia, Laura Betancur, Kendra Whitfield, and Elizabeth Votruba-Drzal. 2020. "Examining Links Between Income and Behavior Problems Through a Developmental Psychopathology Lens: A Nationally Representative Study." *Development and Psychopathology* 24(2): 1–17.

Miller, Portia, Daphne Henry, and Elizabeth Votruba-Drzal. 2016. "Strengthening Causal Inference in Developmental Research." *Child Development Perspectives* 10(4): 275–80.

Miller, Portia, and Elizabeth Votruba-Drzal. 2017. "The Role of Family Income Dynamics in Predicting Trajectories of Internalizing and Externalizing Problems." *Journal of Abnormal Child Psychology* 45(3): 543–56.

Nepomnyaschy, Lenna, Allison Dwyer Emory, Kasey J. Eickmeyer, Maureen R. Waller, and Daniel P. Miller. 2021. "Parental Debt and Child Well-Being: What Type of Debt Matters for Child Outcomes?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 122–51. DOI: 10.7758/RSF.2021.7.3.06.

Oliver, Melvin L., and Thomas M. Shapiro. 1995. *Black Wealth/White Wealth: A New Perspective on Racial Inequality*. New York: Routledge.

Orr, Amy J. 2003. "Black-White Differences in Achievement: The Importance of Wealth." *Sociology of Education* 76(4): 281–304.

Palacios-Barrios, Esther E., and Jamie L. Hanson. 2019. "Poverty and Self-Regulation: Connecting Psychosocial Processes, Neurobiology, and the Risk for Psychopathology." *Comprehensive Psychiatry* 90(1): 52–64.

Peterson, James L., and Nicholas Zill. 1986 "Marital Disruption, Parent-Child Relationships, and Behavior Problems in Children." *Journal of Marriage and the Family* 48(2): 295–307.

Pfeffer, Fabian T. 2018. "Growing Wealth Gaps in Education." *Demography* 55(3): 1033–68.

Pfeffer, Fabian T., and Robert F. Schoeni. 2016. "How Wealth Inequality Shapes Our Future." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 2–22. DOI: 10.7758/RSF.2016.2.6.01.

Phillips, Meredith, Jeanne Brooks-Gunn, Greg J. Duncan, Pamela Klebanov, and Jonathan Crane. 1998. "Family Background, Parenting Practices, and the Black–White Test Score Gap." In *The Black–White Test Score Gap*, edited by Christopher Jencks and Meredith Phillips. Washington, D.C.: Brookings Institution Press.

Rauscher, Emily, and William Elliott. 2016. "Wealth as Security: Growth Curve Analyses of Household Income and Net Worth During a Recession." *Journal of Family and Economic Issues* 37(1): 29–41.

Ream, Robert K., and Michael A. Gottfried. 2019. "Household Wealth and Adolescents' Social-Emotional Functioning in Schools." *Social Science Research* 83 (September). Available online July 2. DOI: 10.1016/j.ssresearch.2019.06.007.

Reardon, Sean F. 2011. "The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations." In *Whither Opportunity? Rising Inequality, Schools, and Children's Life Chances*, edited by Greg J. Duncan and Richard J. Murnane. New York: Russell Sage Foundation.

Royston, Patrick. 2005. "Multiple Imputation of Missing Values: Update of Ice." *The Stata Journal* 5(4): 527–36.

Saez, Emmanuel. 2017. "Income and Wealth Inequality: Evidence and Policy Implications." *Contemporary Economic Policy* 35(1): 7–25.

Shanks, Trina R. 2007. "The Impacts of Household Wealth on Child Development." *Journal of Poverty* 11(2): 93–116.

Shanks, Trina R., and Mesmin Destin. 2009. "Parental Expectations and Educational Outcomes for Young African American Adults: Do Household Assets Matter?" *Race and Social Problems* 1(1): 27–35.

Shapiro, Thomas M. 2005. *The Hidden Cost of Being African American: How Wealth Perpetuates Inequality*. New York: Oxford University Press.

Shaw, Daniel S., Elizabeth B. Owens, Joyce Giovannelli, and Emily B. Winslow. 2001. "Infant and Toddler Pathways Leading to Early Externalizing Disorders." *Journal of the American Academy of Child and Adolescent Psychiatry* 40(1): 36–43.

Shim, Soyeon, Jing J. Xiao, Bonnie L. Barber, and Angela C. Lyons. 2009. "Pathways to Life Success: A Conceptual Model of Financial Well-Being for Young Adults." *Journal of Applied Developmental Psychology* 30(6): 708–23.

Votruba-Drzal, Elizabeth. 2006. "Economic Disparities in Middle Childhood Development: Does Income Matter?" *Developmental Psychology* 42(6): 1154–67.

Wadsworth, Martha E., Gary W. Evans, Kathryn Grant, Jocelyn S. Carter, and Sophia Duffy. 2016. "Poverty and the Development of Psychopathology." In *Developmental Psychopathology*, 3rd ed., edited by Dante Cicchetti. New York: John Wiley & Sons.

Weininger, Elliot B., Annette Lareau, and Dalton Conley. 2015. "What Money Doesn't Buy: Class Resources and Children's Participation in Organized Extracurricular Activities." *Social Forces* 94(2): 479–503.

Wolff, Edward N. 2017. "Household Wealth Trends in the United States, 1962 to 2016: Has Middle Class Wealth Recovered?" *NBER* working paper no. 24085. Cambridge, Mass.: National Bureau of Economic Research.

Yellen, Janet L. 2016. "Perspectives on Inequality and Opportunity from the Survey of Consumer Finances." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(2): 44–59. DOI: 10.7758/RSF.2016.2.2.02.

Yeung, W. Jean, and Dalton Conley. 2008. "Black–

White Achievement Gap and Family Wealth." *Child Development* 79(2): 303–24.

Yeung, W. Jean, and Sandra L. Hofferth. 1998. "Family Adaptations to Income and Job Loss in the US." *Journal of Family and Economic Issues* 19(3): 255–83.

Zhan, Min. 2006. "Assets, Parental Expectations and Involvement, and Children's Educational Performance." *Children and Youth Services Review* 28(8): 961–75.

Zhan, Min, and Michael Sherraden. 2003. "Assets, Expectations, and Children's Educational Achievement in Female-Headed Households." *Social Service Review* 77(2): 191–211.

PART III

Policies That Address Wealth Inequality for Children

Asset Building and Child Development: A Policy Model for Inclusive Child Development Accounts

JIN HUANG, MICHAEL SHERRADEN, MARGARET M. CLANCY, SONDRA G. BEVERLY, TRINA R. SHANKS, AND YOUNGMI KIM

Extreme wealth inequality imposes significant constraints on financially vulnerable families, especially on the development of children in those families. Child Development Accounts (CDAs)—investment accounts offering financial access, subsidies, and incentives to provide assets for children—are designed to reduce wealth inequality over time and promote human development. We review existing evidence from a test of a CDA policy in a population sample. Findings show that, in addition to stimulating account holding and asset building, universal and automatic CDAs for postsecondary education have positive effects on outlooks for and behaviors of parents and children. This long-running CDA experiment suggests ten design elements for a universal, progressive, and potentially lifelong CDA policy. Informed by findings from this experiment, seven states have adopted some version of this model. These innovations illustrate potential policy pathways to reducing asset inequality and improving child development.

Wealth inequality has become extreme in the United States in recent decades (Saez 2019; Zucman 2019), especially for households with children (Pfeffer and Waitkus 2021, this issue). Relatedly, some scholarship indicates that household wealth has serious implications for child well-being (Beverly, Elliott, and Sherraden 2013; Boen, Keister, and Graetz 2021, this issue; Gibson-Davis and Hill 2021, this issue; Elliott, Destin, and Friedline 2011; Grinstein-Weiss, Shanks, and Beverly 2014; Lerman and McKernan 2008; Miller et al. 2021, this issue; Shanks et al. 2010). This article examines a policy intervention that tests the use of Child Development

Jin Huang is professor in the Saint Louis University School of Social Work, United States. **Michael Sherraden** is George Warren Brown Distinguished University Professor at the Brown School at Washington University, United States. **Margaret M. Clancy** is policy director and director of the SEED for Oklahoma Kids experiment at Washington University, United States. **Sondra G. Beverly** is senior scholar in the Center for Social Development at Washington University, United States. **Trina R. Shanks** is Harold R. Johnson Collegiate Professor of Social Work and Director of Community Engagement at the University of Michigan, United States. **Youngmi Kim** is associate professor in the School of Social Work at Virginia Commonwealth University, United States.

Accounts (CDAs) to reduce wealth inequality, support child development, and encourage eventual educational attainment. Opened at birth, CDAs are investment accounts offering financial access and participation, a structured asset accumulation platform, and subsidies for postsecondary education.

Numerous policies implicitly recognize the ways in which household economic resources shape child development. Among those supporting low-income families with children are Temporary Assistance for Needy Families, the Earned Income Tax Credit (Michelmore and Lopoo 2021, this issue), school meals, Head Start, Medicaid (Jackson, Agbai, and Rauscher 2021, this issue), the Children's Health Insurance Program, and child support (Nepomnyaschy et al. 2021, this issue). CDAs are one of the few policy initiatives that specifically address the linkages between household assets and child development (Sherraden 1991). Policy interest in CDAs is growing (U.S. Government Accountability Office 2020; Schuetz 2020). In the United States, seven states have established statewide policies (U.S. Government Accountability Office 2020; Sherraden, Huang, and Zou 2019). CDA programs and policies have also been implemented in Canada, Israel, Korea, Singapore, Uganda, mainland China, Taiwan, and the United Kingdom (Huang, Zou, and Sherraden 2020).

CDAs are grounded in the theory that accumulating household assets can help children eventually pay for postsecondary education expenses. The theory also holds that assets may shape the attitudes and behaviors of parents and children, including their interactions, in ways that promote positive educational outcomes (Sherraden 1991; see also Beverly, Elliott, and Sherraden 2013; Grinstein-Weiss, Shanks, and Beverly 2014; Shanks et al. 2010). For example, having assets for children's postsecondary education may increase parents' educational expectations for the children (Kim et al. 2015), promote their own mental health (Huang, Sherraden, and Purnell 2014), and improve both parenting practices and other parent-child interactions (Huang, Nam, et al. 2019). These attitudes and behaviors contribute to healthy child development. They and the financial assets designated for postsecondary

education may help children develop a college-bound identity (Beverly, Elliott, and Sherraden 2013), which can lead in turn to better academic performance and educational attainment. These factors may be especially powerful for disadvantaged families that would not otherwise be able to consider higher education.

In the sections that follow, we first describe the CDA policy concept and its recent development in the United States. We then summarize existing findings on the impacts of universal and automatic CDAs on families' asset building, parental attitudes and behaviors, and child development. We focus on the Saving for Education, Entrepreneurship, and Downpayment program in Oklahoma (SEED OK) CDA program, which was tested in a randomized experiment in a full statewide population with a stratified random sample of families with newborns. We use the SEED OK experiment as an example because it shows how universal and progressive CDA policy could be designed, implemented, and sustained to serve large populations. With insights gained from SEED OK research, we recommend policy design features and discuss their implementation in statewide policies. The goal is to provide a comprehensive summary of CDA impacts and features that can serve as a general guide for future design and implementation.

THE CDA POLICY CONCEPT

CDAs are viewed as the centerpiece of a universal, progressive, and potentially lifelong policy that offers families a structure within which to accumulate assets over time (Sherraden 1991; Sherraden and Clancy 2005). Universality means providing a CDA to every newborn, and progressivity means allocating extra subsidies and incentives for children from vulnerable families. This inclusive approach enables all children to participate in asset building (powell 2009). As proposed, CDAs are an asset-building framework for the entire life course.

Both the CDA model and subsequently implemented policies encourage families to contribute to the accounts, which also grow from deposits by public, nonprofit, or private sources, as well as from investment earnings. Subsidies and incentives can come in the form of opening deposits, contributions at milestones in the

beneficiary's life (such as birthdays), savings matches, and tax benefits. Although CDAs were conceived as a tool for accumulating assets for a variety of uses, most related policies in the United States today designate the assets for postsecondary education. CDAs in some other countries—Israel, Taiwan, and United Kingdom, for example—do not restrict assets after children reach certain age milestones.

In the United States, the first coordinated test of CDAs piloted them in twelve community-based programs between 2003 and 2008 (Sherraden and Stevens 2010). This effort, the Saving for Education, Entrepreneurship, and Downpayment Initiative (SEED National Initiative), recruited 1,171 low-income children and their families in communities in twelve states.[1] The largest share of SEED participants (N = 790) was affiliated with a program in Pontiac, Michigan, which was also the site for MI-SEED, a quasi-experimental program that offered CDAs to children enrolled at Head Start centers in and around the city (Adams 2008; Loke, Clancy, and Zager 2009). The counterfactual was created by randomly assigning matched pairs of Head Start centers to treatment and comparison groups. The intervention consisted of an account with Michigan's 529 College Savings Plan (MI 529), initial deposits from the program and the state, and opportunities for savings matches. To take up the offer, a treatment family opened an account with the MI 529, after which the initiative contributed $800 and the state $200. For four years, deposits made by family members into these accounts received a one-to-one match from SEED. After intensive recruitment efforts, 235 (62 percent) of the 381 caregivers in the treatment group opened accounts (Blumenthal and Shanks 2019; Shanks, Johnson, and Nicoll 2008; Shanks, Nicoll, and Johnson 2014); however, the most disadvantaged families in this already low-income sample were the least likely to open accounts.

In December 2008, after the formal program had ended, the CDAs of MI-SEED participants had a mean balance of $1,483 and a median value of $1,131 (Loke, Clancy, and Zager 2009). The MI-SEED sample consisted of children from low-income families who experienced the Great Recession, yet a large majority did not make nonqualified withdrawals and still had positive balances by 2019. As of September 2019, the mean balance was $1,945, and the median was $1,411. By 2019, when most of the MI-SEED students were old enough to have graduated from high school, participants began to use their accounts to make qualified withdrawals. Twenty-four individuals made twenty-nine qualified withdrawals, a mean withdrawal of $1,379 (median $1,081). Forty-two individuals made forty-seven nonqualified withdrawals, a mean of $1,313 (median $1,000). Analyses with standardized test scores from Michigan suggested that having a CDA was associated with increased likelihood of scoring above proficiency on the reading and math sections of the sixth-grade test ($p < .10$) and the English and writing section of the eleventh-grade test ($p < .05$). Those results were robust to the inclusion of controls for economic disadvantage and special education.

Although successful in some ways, MI-SEED revealed the limitations of opt-in enrollment. Despite intensive outreach and explanation, and the offer of an $800 initial deposit, only 62 percent of families opened CDAs (Shanks, Johnson, and Nicoll 2008; Shanks, Nicoll, and Johnson 2014), and disadvantaged families were overrepresented in the remaining 38 percent—exactly the opposite of what might be considered most desirable in terms of inclusion. Moreover, 73 percent of parents who did open accounts chose the most conservative guaranteed-income option, which greatly limited investment growth. For example, the average balance of a conservative account in 2019 was $1,588 (median of $1,409), but $4,228 (median of $2,330) for more aggressive accounts that included exposure to equities. This experience with the CDA policy model in MI-SEED—

---

1. The SEED National Initiative was a policy, practice, and research effort led by seven national partners: the Corporation for Enterprise Development (CFED, now known as Prosperity Now), the Center for Social Development (CSD) at Washington University in St. Louis, the University of Kansas School of Social Welfare, the University of Michigan, the New America Foundation, the Initiative on Financial Security at the Aspen Institute, and RTI International (Sherraden and Stevens 2010).

especially the challenges of opt-in enrollment and low-growth investment choices—later led to the CDA policy model for SEED OK (Sherraden and Clancy 2005). This was a key evidence-based transition in CDA policy development.

In 2018, more than seventy CDA policies and programs operated in the United States; nearly half a million children were enrolled beneficiaries (Prosperity Now 2018). Seven states—California, Illinois, Maine, Nebraska, Nevada, Pennsylvania, and Rhode Island—have adopted statewide, automatic, universal CDA policies by legislation or administrative rule (see table 1) (Clancy, Sherraden, and Beverly 2019a).[2] These programs were influenced by the results from the CDA policy model research—through reports, testimony, and interstate cooperation (Beverly, Clancy, and Sherraden 2016; Clancy 2019; Clancy and Beverly 2017c; Clancy, Sherraden, and Beverly 2019a). The latest four statewide CDA policies, notably, were created by legislation, in effect moving from demonstrations to regularized public policy. Regarding potential growth, estimates from 2018 birth statistics suggest that about eight hundred thousand children will be added into these policies in 2021. Other states are also taking steps to enact CDA policies; for example, legislation to create statewide CDAs was introduced in both houses in Missouri in early 2020, stalled because of the COVID-19 pandemic, and is expected to be a priority in 2021 (Leiker, Clancy, and Sherraden 2020).

As shown in table 1, these state programs vary in their specific features. Maine, which has the oldest statewide CDA policy in the country, automatically enrolls every resident newborn (about twelve thousand annually), depositing a $500 grant into the state's 529 plan. The grants are funded by a private philanthropy. The policy matches family savings in a state 529 account at a 50 percent rate up to an annual maximum of $300 (Clancy and Sherraden 2014; Huang et al. 2013). The savings match is deposited automatically regardless of family income and carries no lifetime maximum (Clancy and Sherraden 2014). In 2018, Pennsylvania became the first state to create a universal and automatic CDA policy through legislation, which passed with bipartisan support (Center for Social Development 2018). The Pennsylvania Keystone Scholars program automatically deposits $100 into the state 529 plan for each of the approximately 140,000 residents born annually (Clancy, Sherraden, and Beverly 2019a).

SEED OK

SEED OK, which began in 2007, is an ongoing, longitudinal, multimethod, randomized experiment of a universal CDA in a full statewide population. It was designed to test the impacts of universal and progressive CDAs opened at birth. Children in the treatment group received a CDA that included a state-owned account, an initial deposit, and incentives to encourage deposits from their families.[3] Children in the control group did not receive this CDA intervention and had no restrictions of any kind. They and their parents were free to open a 529 account, and some of them did. The evaluation of SEED OK was multimethod and rigorous, including random sampling from a state population, oversamples of populations of color, longitudinal survey data, account data electronically transferred from the state 529 plan, and in-depth interviews.

Sample and Data

The sampling frame was the population of Oklahoma infants born in two three-month periods in 2007. Treatment and control group members were randomly selected from birth records provided by the Oklahoma Health Department. The experiment oversampled racial and ethnic minorities—African Americans, American Indians, and Hispanics—because of our interest in the ties between wealth inequality and race. Mothers of 2,704 newborns agreed to participate. This sampling design produced estimates that were generalizable to the full state population of families with newborns.

---

2. Several cities have also launched CDA policies, among them San Francisco; Saint Louis, Missouri; New York (City of New York 2017); Oakland; and Lansing, Michigan.

3. SEED OK was funded by the Ford Foundation, Charles Stewart Mott Foundation, and Lumina Foundation for Education.

Table 1. Seven Statewide Child Development Account Policies in the United States

State	Year Established	Planned Implementation	Method of Establishment	Administering Agency	529 Savings Platform	State-Contracted 529 Plan Manager	Newborns in 2018
Maine	2008		Philanthropy	Alfond Scholarship Foundation and Finance Authority of Maine	NextGen College Investing Plan	Merrill	12,311
Rhode Island	2010		Administrative rule	State treasurer's office	CollegeBound Saver	Ascensus College Savings	10,506
Nevada	2013		Administrative rule	State treasurer's office	SSGA Upromise 529 plan	Ascensus College Savings	35,682
Pennsylvania	2018		Legislation	State treasurer's office	PA 529	Ascensus College Savings	135,673
Nebraska	2019	2020	Legislation	State treasurer's office	NEST 529 College Savings	First National Bank of Omaha	25,488
California	2019	2020	Legislation	State treasurer's office	ScholarShare	TIAA-CREF Tuition Financing, Inc.	454,920
Illinois	2019	2021	Legislation	State treasurer's office	Bright Start College Savings Program	Union Bank & Trust Company	144,815

Source: Authors' compilation using data from Clancy and Beverly 2017c; Clancy, Sherraden, and Beverly 2019a; and Martin et al. 2019.

Note: NEST = Nebraska Educational Savings Trust; SSGA = State Street Global Advisors; PA = Pennsylvania. Connecticut launched CHET Baby Scholars in 2014. That CDA policy is not automatic; it has an opt-in enrollment, requiring families to open their own 529 accounts to receive the $100 subsidy. Other states (such as Colorado) also offer a deposit if families open a state 529 account. Because not all newborns are included, these programs are not included here.

Yunju Nam and colleagues (2013) used demographic data from birth certificates to compare mothers who completed the baseline survey with those who did not.[4] The two groups did not differ significantly on infant's race and Hispanic origin, gender, and birth weight; mother's marital status and metropolitan residency; and father's age. Participating mothers were slightly older (25.5 versus 25.2 years), slightly more educated (12.5 versus 12.2 years), and slightly more likely to have been born in the United States (87 versus 84 percent).

After completing a baseline survey between the fall of 2007 and the spring of 2008, the mothers were randomly assigned to the treatment (n = 1,358) or the control group (n = 1,346; Marks, Rhodes, and Scheffler 2008). About 84 percent (n = 2,259) completed the wave 2 survey in the spring of 2011, 1,149 in the treatment group and 1,110 in the control group (for descriptive statistics, see Zager et al. 2010). Wave 3 of the survey was conducted in the first half of 2020.

The evaluation used data from surveys of mothers, account information as provided by the state 529 plan, and in-depth interviews. The Oklahoma 529 College Savings Plan (OK 529) provided quarterly data on ownership of and balances in OK 529 accounts for SEED OK children. Those data were transferred directly to the SEED OK research team from the 529 program manager. Finally, in-depth interviews conducted between mid-2009 and late 2010 provided qualitative data on mothers' experiences with and viewpoints on the CDA (Gray et al. 2012).

SEED OK Intervention

The SEED OK experiment was built on OK 529's centralized account platform. In general, contributions to 529 accounts are made after tax. Investment earnings are not subject to federal or state taxes if withdrawn for qualified educational expenses at community colleges, trade and vocational schools, four-year colleges, and other postsecondary institutions. However, a 10 percent penalty on investment earnings (as opposed to deposited amounts) is applied to withdrawals for anything other than payment of qualified expenses. Many states, including Oklahoma, offer income tax benefits (whether credits or deductions) for contributions to their 529 plans. In Oklahoma, as elsewhere across the United States, any adult citizen or resident alien may open a 529 account.

SEED OK had an opt-out design. For each child in the treatment group, the Oklahoma treasurer's office automatically opened a state-owned OK 529 account with a $1,000 initial deposit. Parents could opt out of the account by contacting the Oklahoma state treasurer's office. (Some CDA policies allow parents to opt out of receiving communications but maintain funds for the child to access when she or he turns eighteen.) Funds in these accounts have been invested in the OK 529 Moderate Age-Based Option (Clancy and Beverly 2017a).[5] When the beneficiaries are ready to use the funds, withdrawals will be sent directly to post-secondary educational institutions.[6] Funds that remain in a CDA after the beneficiary turns thirty will revert to the state.

SEED OK also offered two financial incentives designed to encourage treatment mothers to open and make personal deposits into their own OK 529 accounts (mother-owned accounts). At the time, the state plan required a $100 deposit to open the account. SEED OK offered the $100 initial contribution for accounts opened by a given date. In addition, the experiment provided savings matches for four years (2008–2011) to low- and moderate-income treatment families that made deposits into mother-owned accounts. Families with an annual adjusted gross income under $29,000 had a 1 to 1 match rate for their savings (up to $250 in matches per year), and those with an annual adjusted gross

---

4. More than 99 percent of the caregivers completing the baseline survey were mothers of selected newborns. For simplicity, we refer to all caregivers as mothers.

5. Program deposits were initially invested in the OK 529 Balanced Fund Option. Funds were later moved to an age-based option in which investments become increasingly conservative as the beneficiary nears college age.

6. Oklahoma does not count assets in these state-owned accounts or any personal deposits into OK 529 accounts against the asset limits of state means-tested programs (Clancy, Sherraden, and Beverly 2019a).

Figure 1. Flow Chart of the SEED OK Experiment
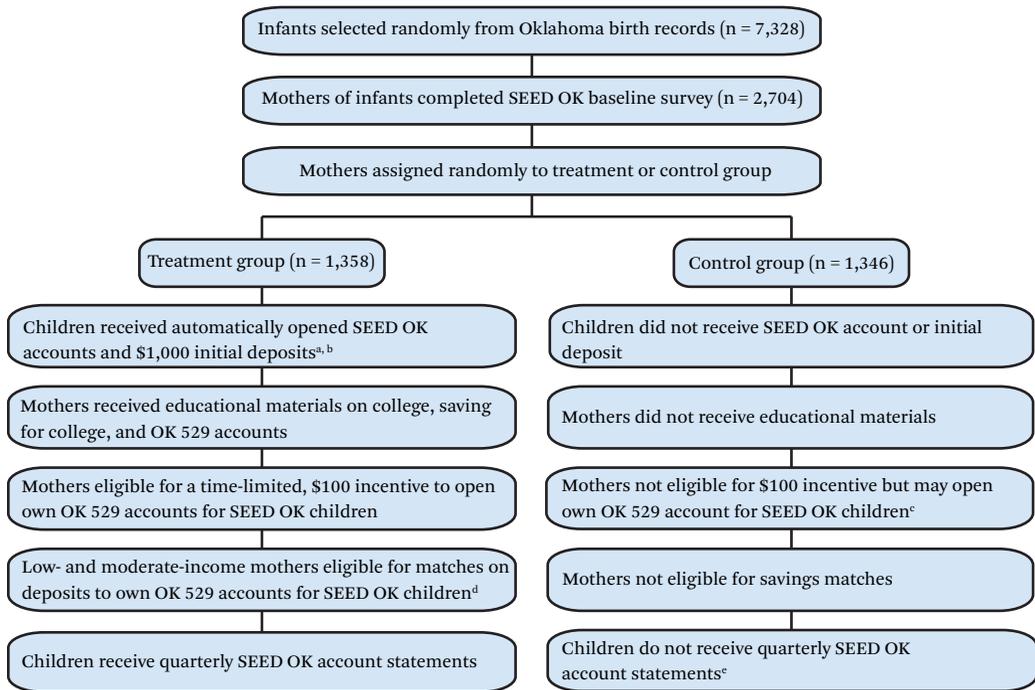
Source: Adapted from Beverly, Clancy, and Sherraden 2016, 2.
Note: SEED OK = SEED for Oklahoma Kids; OK 529 = Oklahoma 529 College Savings Plan.
[a] One mother opted out of the account for her child for religious reasons.
[b] Funds are restricted for use on qualified postsecondary educational expenses and are sent directly to educational institutions.
[c] Anyone eighteen years or older, regardless of their state residency, can open an OK 529 account.
[d] Savings matches are held in SEED OK accounts.
[e] Because they did not receive automatically opened accounts, control children do not receive SEED OK account statements, but quarterly OK 529 account statements are sent for all mother-owned accounts.

income between $29,001 and $43,499 received a 0.5 to 1 rate (up to $125 in matches per year). Using public-assistance program records and the state tax-return data of consenting participants to assess eligibility, the state automatically deposited savings matches. Families have been able to choose an investment that is more or less aggressive than the state-selected option, withdraw savings easily for personal or financial reasons, and benefit from the state tax deduction.

In each calendar quarter, the OK 529 program manager mailed statements showing the balance of the state-owned account to each treatment family. In addition, SEED OK sent

other communication materials (such as letters and postcards), a mailing of two books to be read with children, and a T-shirt reading "Future College Graduate." SEED OK was a low-resource intervention, did not directly contact treatment mothers, made no professional contact, and did not offer any services. Mothers and other family members in the control group could open OK 529 accounts but did not receive incentives to do so. Figure 1 presents a flow chart for the intervention (Clancy et al. 2016).

Effects on Financial Outcomes

Published research using SEED OK financial data from 2009, 2010, and 2014 suggested that

the SEED OK intervention generated positive financial outcomes (Beverly et al. 2015; Clancy et al. 2016; Nam et al. 2013; Sherraden et al. 2015) on account holding and accumulated assets.

SEED OK achieved near universal account holding by automatically opening state-owned accounts. (Very soon after accounts were opened, one mother of a treatment child opted out of the account, citing religious reasons.) The impact of automatic opening was large; in its absence, very few children would have had a 529 account. For example, in 2014, when SEED OK children were about seven years old, fewer than 4 percent in the control group had an OK 529 account (Clancy et al. 2016). Very large and statistically significant treatment-control differences in the percentages of participants holding any OK 529 account were also found in disadvantaged subsamples (Beverly et al. 2012; Clancy et al. 2016; Nam et al. 2013; Sherraden et al. 2015).

Also, the CDA in SEED OK had a large, positive impact on the value of total 529 assets for higher education and a modest one on the value of personal savings held in incentivized 529 individual accounts (Clancy et al. 2016; Nam et al. 2013). On December 31, 2014, the average value of the treatment group's total 529 assets for higher education was $1,851, nearly six times that for the control group ($323, $p < .01$). The average value of personal savings in individual accounts was greater for treatment children ($419) than for control children ($323), but the difference was not statistically significant (Clancy et al. 2016). The average value of total earnings on CDA assets of the treatment group was $570, nearly five and a half times that for the control group ($109, $p < .01$).

The findings on total 529 assets for higher education were consistent with the incentives and support for savings, including automatic deposits, matching savings, restricting investment options, deferring taxes, and guiding withdrawals. It may be helpful to understand the meaning that accumulated assets can have. Nearly one-third of Americans could not come up with $2,000 within a month to meet an unexpected need, and the median net worth of low-income was approximately $0 (Federal Reserve 2017). In contrast, approximately 18 percent of the experiment's treatment children

had assets in individual accounts (Clancy et al. 2016). Was the accumulated amount enough to matter for higher education? If the savings were maintained until they were eighteen years old and the assets earned a 5 percent rate of return, the average balance in individual accounts would be approximately 9 percent of the average total in-state tuition for a four-year postsecondary institution in Oklahoma (Huang et al. 2017). If estimates included the initial $1,000 deposit by SEED OK, the $100 account-opening deposit, and returns on these deposits, the accumulated sum would cover approximately 13 percent of that tuition (Huang et al. 2017). Other estimates indicated that, on average, parents paid 14 percent of children's postsecondary tuition from savings in 2018 (Sallie Mae and Ipsos 2018).

Effects on Social Development

The CDAs in SEED OK affected more than asset accumulation. Findings indicated effects on social development outcomes. Using data from the wave 2 survey conducted in 2011, SEED OK research examined the effects of CDAs on parental educational expectations, maternal depressive symptoms, parenting practices, and children's social-emotional development. Asset effects theory guided predictions about the influence of assets on child development and the selection of these outcomes (Grinstein-Weiss, Shanks, and Beverly 2014; Huang, Sherraden, and Purnell 2014; Lerman and McKernan 2008). The theory posited that, because the assets were available, parents would have higher expectations and improve their interactions with children accordingly. Thus, levels of emotional distress and parenting stress would be lower, and the effects would promote child development. Positive parent-child interactions and healthy child development would in turn contribute to positive educational outcomes. However, because children were only four years old at the time of the wave 2 survey, no analyses examined educational outcomes.

The findings suggest that the CDA helped treatment parents sustain high expectations about their children's education (Kim et al. 2015), reduced the intensity of maternal depressive symptoms (Huang, Sherraden, and Purnell 2014), reduced punitive parenting practices

(Huang, Nam, et al. 2019), and improved children's early social-emotional development (Huang et al. 2014). Details on the measures of these social development outcomes were provided in SEED OK research (Huang et al. 2014; Huang, Nam, et al. 2019; Huang, Beverly, et al. 2019; Huang, Sherraden, and Purnell 2014; Kim et al. 2015). Overall, the effect sizes of CDAs on these outcomes were similar to those of other early childhood interventions such as Early Head Start and Head Start (around 0.10; see Huang, Nam, et al. 2019; Huang, Beverly, et al. 2019; Huang, Sherraden, and Purnell 2014). Some of the magnitudes of effect sizes were larger for the low-income subsample than for the full sample (Huang, Nam, et al. 2019; Huang, Beverly, et al. 2019; Huang, Sherraden, and Purnell 2014). This suggests that universal and automatic CDAs had greater effects on some social development outcomes for low-income families. In this regard, CDAs have the potential to reduce some child development disparities caused by economic inequality.

Altogether, these outcomes indicate a pattern of modest but meaningful social development improvements that, because of the rigorous research design, can be causally attributed to the CDA. These positive effects were documented even though the CDA funds had not yet been used for education. In other words, asset-holding itself made the difference. (We also hypothesize that these assets will later be "spent" and contribute to educational success.)

Findings from extended qualitative interviews conducted with forty SEED OK treatment mothers supported and enriched these quantitative findings on the effects of CDAs. One theme of the interviews was that mothers said the CDA made them feel optimistic about their children's future (Gray et al. 2012). For example, one treatment mother facing great financial pressure stated that the CDA made her feel "a whole lot better" and caused her to "have some hope" for her child (64). Another mother said that the CDA "give[s] me something to look forward to—to know that it would help" (56). For some, the CDA represented a partnership with the state in securing their child's future. The research also indicated that CDAs were more meaningful to mothers with low income and low education than to their more advantaged counterparts.

KEY DESIGN ELEMENTS OF A UNIVERSAL AND PROGRESSIVE CDA POLICY MODEL

As noted, experimental evidence suggests that CDAs substantially increased the holding of investment accounts and assets for education and had positive impacts on some attitudes and behaviors of children and families. In SEED OK, CDAs also motivated parents of infants to open 529 accounts, though the impact on amount of individual savings was not statistically significant in early childhood. Overall, financial and nonfinancial impacts in CDAs were generated not by individual saving behaviors but by a universal policy model that built opportunities for children and families. We argue that the core feature of successful CDAs is the inclusion of all children, and that the design features of this policy model matter for inclusion and sustainability. Scholars at the Center for Social Development identified ten key elements for universal and progressive CDA policies (Clancy and Beverly 2017c; Clancy, Sherraden, and Beverly 2019a, 2019b; Sherraden, Clancy, and Beverly 2018). These elements are designed to ensure that a policy is universal, progressive, and potentially lifelong, and that it is built on an efficient, scalable, and stable policy model capable of promoting asset accumulation for development purposes.

1. Universal eligibility

All children within a jurisdiction are eligible for CDAs under that jurisdiction's policy. For a state or city CDA policy, all children in families across the full socioeconomic and geographic spectrum in the state or city are eligible for the CDA. A national CDA policy will include all children in the country. Ideally, CDAs are not intended to target certain subpopulations such as disadvantaged families. For example, according to California Education Code, each state resident born on or after July 1, 2020, is eligible for a state CDA.[7] In contrast, the CDAs targeting specific populations (such as clients

7. Calif. EDC § 69996.3(a) (2019).

of certain social agencies) risk excluding some disadvantaged children from asset-building opportunities. Some programs target children in public schools but exclude those in religious and private schools, as well as those who are homeschooled. Such exclusions may create barriers for financially vulnerable families given that some religious schools and private schools enroll a substantial proportion of low-income students.

Universal eligibility also avoids the administrative costs associated with eligibility assessment and recruitment and creates a platform to implement automatic enrollment (see next element). The comparison of statewide CDA policies with small-scale community CDA programs with targeted populations suggests that the latter may encounter high administrative and outreach costs, affecting program efficiency and sustainability (Clancy and Sherraden 2014; Huang, Beverly, et al. 2019; Clancy et al. 2019). In addition, the inclusion of moderate- and high-income families through universal eligibility enables cross-subsidization, wherein high balance accounts can help to offset the costs of low-balance accounts, thereby making inclusion of low-balance accounts feasible in the marketplace (Clancy, Orszag, and Sherraden 2004; Clancy, Sherraden, and Beverly 2015; Huang, Beverly, et al. 2019). In sum, full inclusion supports program efficiency, operations, public support, and sustainability. More research should be conducted to quantify the specific benefits of universal eligibility.

2. Automatic enrollment

Children are automatically enrolled in the CDA on an opt-out basis. Automatic enrollment removes the burden of voluntary program take-up from parents (Clancy, Sherraden, and Beverly 2019a, 2019b). As research suggests, low take-up among eligible families is a challenge of public benefit programs (Currie 2004). Findings of SEED OK indicate that, with automatic enrollment, it is feasible for CDAs to cover essentially all children (only one family in SEED OK, less than 0.1 percent, has opted out). Compared with a nearly 100 percent participation in automatic SEED OK CDAs, the opt-in MI-SEED CDAs have an enrollment rate of 62 percent following extensive community outreach. The im-

portance of universal eligibility with automatic enrollment has also been demonstrated in state CDA policies. The first statewide CDA in the United States, Maine's Harold Alfond College Challenge, originally used an opt-in enrollment approach and invested approximately $11.5 million for program outreach to enroll 40 percent of all eligible children between 2008 and 2013. Modeling the SEED OK CDA, the program changed to automatic enrollment in 2014 and now includes all Maine newborns (approximately 12,500 annually), thus saving millions of dollars a year in recruitment costs with almost no additional operational costs (Clancy and Sherraden 2014).

3. Automatic initial deposit

All children automatically receive a substantial initial deposit ($500 to $1,000) when enrolled. Findings from SEED OK strongly support the importance of a sizable initial deposit for asset accumulation: by the end of 2014, about three-quarters of accumulated assets in CDAs for treatment children were generated from the initial deposit and its earnings. In addition to individual savings, a substantial initial deposit greatly increases the potential of CDAs to address inequality. Moreover, a substantial initial deposit may be related to CDA effects on parents and children's attitudes and behaviors from the beginning (Beverly, Elliott, and Sherraden 2013). The SEED OK CDA's positive impacts on attitudes and behaviors, even though very few parents have made personal deposits, seem to suggest that the initial deposit designated for postsecondary education brings about these changes. In Pennsylvania, the state government provides a scholarship grant of $100 as an initial deposit when automatically enrolling eligible children into the program. More research is required for us to understand better the relationship between the amount of the initial deposit and the effects of the CDA (Beverly, Elliott, and Sherraden 2013).

4. At-birth start

State birth records, the only centralized source of such information, enable CDA administrators to enroll beneficiaries when they are born, maximizing the potential for asset growth over time. These records have a second important

advantage in being the only efficient way to achieve automatic, universal enrollment. For example, Pennsylvania's CDA statute requires the state's Department of Health to transmit infants' birth records for the CDA no later than ninety days after birth.[8] In the absence of using statewide birth records, a CDA program cannot be truly universal. As we have seen in MI-SEED and other examples, when programs are not universal, they disproportionately leave out the most disadvantaged families, even when the programs are targeted to a low-income population.

5. Automatic progressive subsidy
Low-income and disadvantaged children automatically receive additional deposits to boost asset accumulation. SEED OK and asset-building policies have shown that low-income families can save but that the amount of household savings may not be enough to achieve particular goals, such as financing postsecondary education. A savings match is a common policy incentive for asset accumulation in CDAs, but it is difficult for low-income families to save for long-term goals and thus to benefit from the match. Therefore, it is highly desirable that other creative and progressive deposits subsidize the asset accumulation of low-income children. Options include a progressive deposit for each year of schooling completed or for each year of service in the community. In 2019, SEED OK offered a progressive deposit to half of the children randomly selected from the treatment group. All of these children received $200 and low-income children received an additional $400 (Clancy, Sherraden, and Beverly 2019c).[9]

6. Centralized savings plan
Through a single, central platform, state-contracted organizations manage CDAs and investments. In the United States, state 529 plans have served this function, facilitating statewide partnerships, efficiency, and economies of scale. As an existing financial platform in forty-nine states, 529 plans have important features well suited to CDAs, including state sponsorship to enable full inclusion and smooth policy operation, legal and accounting structures to facilitate asset accumulation (such as savings protection, account restrictions, and tax reporting), centralized administration for accounting and recordkeeping functions, and simplified investment opportunities for potential growth. We discuss the detailed benefits of the centralized savings plan built on 529 plans elsewhere (Clancy, Sherraden, and Beverly 2015). In the United States, CDAs that are not built on 529 plans typically use bank accounts, but this choice has several disadvantages (described in Clancy, Sherraden, and Beverly 2015). The value of centralized savings plans in general, and 529 plans in particular, is revealed by the choices made by CDA program and policy designers: all statewide CDAs use 529 plans as the financial platform. By the end of 2019, nearly 90 percent of CDAs were 529 plan accounts (U.S. Government Accountability Office 2020).

7. Investment growth potential
To leverage opportunities afforded by long-term market appreciation, CDA deposits are held in funds that have the potential for investment growth over time. Market appreciation can yield substantial assets, especially if deposits are made when the child is very young. As of December 31, 2014, investment earnings account for nearly one-third of the average value of educational assets in the CDAs of SEED OK for the treatment group (Clancy et al. 2016). The initial deposit of $1,000 was made into SEED OK CDAs prior to the 2007–2009 financial recession and declined to just below $700 during the recession. However, the fund grew to about $1,900 by the end of 2019 (Sherraden et al. 2020).

8. Targeted investment options
Targeted options streamline the CDA program's investments. One of the most effective ways to simplify program investments and family decision making is to use age-based funds, which are tailored to the beneficiary's age and adjust investment allocations to become more conservative as the beneficiary nears the age for higher education (Clancy and Beverly 2017a). Age-based options simplify fund selection at

8. 72 Pa. Stat. § 312(b)(1) (2019).

9. Effects of the progressive subsidy will be evaluated in SEED OK wave 3 research.

Table 2. Key Design Elements of a Universal, Progressive CDA Policy Model

Design Element	Goals of CDA Policy					
	Asset Building	Child Development	Universality	Progressivity	Lifelong Availability	Scalability, Efficiency, and Stability
Universal eligibility			✓			✓
Automatic enrollment			✓			✓
At-birth start	✓	✓			✓	✓
Automatic initial deposit	✓		✓			✓
Automatic progressive subsidy	✓			✓		✓
Centralized savings plan	✓		✓			✓
Investment growth potential	✓					✓
Targeted investment options	✓				✓	✓
Restricted withdrawals	✓	✓			✓	✓
Means-tested public benefit exclusions	✓		✓	✓		✓

Source: Authors' compilation.

Note: CDA = Child Development Account.

enrollment and eliminate pressure to make ongoing investment decisions. They also provide a strategic alternative to fixed interest funds (Clancy and Beverly 2017a). In MI-SEED, the majority of treatment parents who opened MI529 accounts selected the most conservative guaranteed-income option and saw limited investment growth. In statewide CDAs, states typically invest program contributions (such as initial deposits and progressive subsidies) in age-based funds.

9. Restricted withdrawals
Assets are restricted to ensure that withdrawn funds are used only for approved purposes. In statewide CDA policies, contributions and earnings from the program may be withdrawn only for postsecondary education expenses. Restricting the use of assets increases the length of investment time, supporting the potential for investment growth. Restricting withdrawals links assets to specific purposes (higher education, for example) and may shape families' attitudes, behaviors, and efforts on these purposes (Clancy, Sherraden, and Beverly 2019a).

10. Means-tested public benefit exclusion
Policies protect families' assets and public-assistance benefits by prohibiting public pro-

grams from considering CDA funds when determining eligibility for means-tested benefits. Federal legislation already excludes funds in 529 plans from the asset test in the Supplemental Nutrition Assistance Program. Assets in 529 plans are also waived from public benefit eligibility tests in at least eighteen states (Clancy, Sherraden, and Beverly 2015). However, the lack of an exemption of CDA funds from benefit-program assets tests may negatively affect asset accumulation (Nam 2008; O'Brien 2008; Ratcliffe et al. 2016). Therefore, several states (such as Illinois) hold CDA program deposits in accounts owned by the state because assets in such omnibus accounts do not affect a family's eligibility for public benefits (Clancy, Sherraden, and Beverly 2019a).

In summary, these ten design elements serve the principles of the CDA policy model and, as table 2 illustrates, work together to support the goals of a universal CDA policy. Each element serves multiple policy goals. For example, universal eligibility not only is necessary to achieve inclusive CDA policy but also avoids administrative costs for eligibility review. Automatic initial deposits promote asset building for all families with CDAs. Some design elements rely on others; for example, universal eligibility and

automatic enrollment are most effectively achieved at birth, when state records can be a central source of information.

Moreover, each of these policy goals is served by multiple elements: universal eligibility, automatic enrollment, at-birth start, and automatic initial deposit create scalable and efficient CDA policy. In addition, centralized savings plans (such as 529s), with investment growth potential and centralized responsibility for accounting, recordkeeping, and investments, are key to establishing efficient, large-scale, sustainable, CDA policies that build assets for their beneficiaries.

As table 3 illustrates, the CDA policy tested in SEED OK features all ten design elements. It has become the benchmark model for recent statewide CDA policies. MI-SEED, the quasi-experimental, community-based design component in the SEED National Initiative, features seven of the ten elements. MI-SEED offered the CDA only to children aged three to five at certain Head Start centers in Pontiac, Michigan. In addition, enrollment was not an opt-out process. Families were required to open an MI 529 account to receive the initial deposit and become eligible for the savings match (Shanks, Johnson, and Nicoll 2008; Shanks, Nicoll, and Johnson 2014).

Most statewide CDA policies include nine of the design elements, but none currently includes all ten. The one element notably missing in every statewide policy is an automatic progressive subsidy. State-level budgetary limitations and, in some states, political opposition, constrain current CDA policies from offering additional financial subsidies to low-income and disadvantaged children. Some state treasurers support adding progressive subsidies in the future for all children in the system but, ultimately, a federal government CDA framework that ensures and subsidizes progressivity holds the greatest potential. In this regard, continued expansion of statewide CDAs can set the stage for revisions in the federal 529 framework. The CDA policies of all seven states make an automatic initial deposit, which is a good beginning, but the amounts so far are relatively small, between $50 and $100. The exception is Maine, which is $500 and funded by a philanthropy. These states are building a sustainable

structure that may lend itself to something more substantial in the future.

One concern is that personal savings can affect public benefit eligibility. In most states with means-tested public-assistance policies, funds provided by nonpersonal deposits are exempt from the policy's asset limits, and many states waive limits for certain participant programs such as Temporary Assistance for Needy Families. Personal savings may be subject to means tests, but a key design feature of the policy model is the exclusion of CDA deposits from public benefit means tests. As table 3 suggests, a CDA policy is deemed to include this element if the state exempts any funds in the CDAs from an asset test. As Margaret Clancy, Michael Sherraden, and Sondra Beverly note (2019b), assets in 529 plans do not count toward the asset limits for Supplemental Nutrition Assistance Program, the Children's Health Insurance Program, or Medicaid. At least eight states have abolished Temporary Assistance for Needy Families asset limits, and at least fifteen as well as the District of Columbia exclude 529 savings from such limits. State legislation can exempt the 529 plan for purposes of determining eligibility for public assistance, provided that the federal rules for these programs permit such an exemption (Clancy, Sherraden, and Beverly 2019b). Another related policy issue is the effect of personal savings on need-based financial aid for higher education such as Pell Grants, Federal Supplemental Educational Opportunity Grants, and Work-Study assistance. Multiple policy provisions reduce or eliminate the impacts of parental assets on the expected family contribution for students from low- and moderate-income backgrounds. Parental savings and assets therefore typically do not affect need-based aid for dependent students from such families (Clancy and Beverly 2017b).

POLICY IMPLICATIONS AND FUTURE DEVELOPMENT

Increasing wealth inequality raises genuine concerns about its impacts on child development. The challenges of the disparity cannot be resolved solely or even mostly by individual-level solutions. Substantial structural changes are required; in other words, institutional arrangements and policy strategies must focus

Table 3. The SEED OK Policy Model Compared with Other CDA Programs and Policies

Design Element	SEED OK	MI-SEED	California	Illinois	Maine	Nebraska	Nevada	Pennsylvania	Rhode Island
Universal eligibility[a]	✓		✓	✓	✓	✓		✓	✓
Automatic enrollment[b]	✓		✓	✓	✓	✓	✓	✓	
At-birth start	✓		✓	✓	✓	✓		✓	✓
Automatic initial deposit	✓	✓	✓	✓	✓	✓	✓	✓	✓
Automatic progressive[c] subsidy	✓	✓							
Centralized savings plan	✓	✓	✓	✓	✓	✓	✓	✓	✓
Investment growth potential	✓	✓	✓	✓	✓	✓	✓	✓	✓
Targeted investment options	✓	✓	✓	✓	✓	✓	✓	✓	✓
Restricted withdrawals	✓	✓	✓	✓	✓	✓	✓	✓	✓
Means-tested public benefit exclusions	✓	✓	✓	✓	✓	✓	✓	✓	✓

Source: Authors' analysis of CDA policy designs.

Note: CDA = Child Development Account; SEED OK = SEED for Oklahoma Kids experiment; MI-SEED = the Pontiac, Michigan, site of the Saving for Education, Entrepreneurship, and Downpayment Initiative.

[a] The CDA policy in Nevada excludes kindergarteners not enrolled in public schools.

[b] Enrollment is automatic after parents check a box on the form to register birth certificates. This check-box approach has been called streamlined enrollment (Clancy and Beverly 2017c).

[c] The California legislation allows for a progressive subsidy but does not fund this at present (Clancy, Sherraden, and Beverly 2019a, 5).

on structural inequalities. CDA policy, as discussed in this article, is designed to build assets and encourage families to save—that is, to invest effectively in children's development. Although it is unrealistic to expect that wealth inequality could be significantly reduced by any single policy or strategy, community-based CDA programs operated by social service organizations have shown some benefits for low-income and low-wealth families (Sherraden and Stevens 2010). However, when a CDA policy opens accounts automatically, is built on a centralized financial structure capable of including all children, and offers additional progressive subsidies to disadvantaged families, it has the potential to deliver the accounts at scale in a financially sustainable way and to become an institutional tool for helping address disparities in wealth and child development.

State adoption of the universal and automatic CDA model reflects recent efforts toward inclusive policy. To inform the large-scale development of CDA policy at the state and federal levels, it is important to understand whether this policy model affects household wealth accumulation and child development, as well as whether it can reach a large population efficiently and sustainably.

Findings from the SEED OK experiment and other CDA research indicate that CDAs increase families' asset accumulation for child development, improve parents' attitudes toward long-term development and their interactions with children, and promote children's social-emotional development. Given their inclusive and progressive features, CDAs often have greater effects on low-income and low-wealth families than on the population as a whole. These effects in turn suggest the policy's potential to reduce, at least modestly, wealth inequality and child development disparities.

In terms of policy design, SEED OK successfully models automatic enrollment in a centralized savings structure (OK 529), demonstrating that it is feasible to create an inclusive CDA policy platform. After four years of implementation, from 2008 through 2011, no additional interventions, outreach efforts, or administrative activities were undertaken except for minor communication for research sample maintenance. All of the accounting, recordkeeping,

and investment activities are managed by the state-contracted 529 plan program manager, such as TIAA-CREF in the case of OK 529. The CDA in SEED OK has operated efficiently since inception. The ten core design elements described in this article support a scalable, efficient, and sustainable policy model (Clancy and Beverly 2017c). We emphasize that, in SEED OK, the state 529 plan clearly demonstrates the capability to serve all Oklahoma children. In other words, an exclusive public policy has been changed to become fully inclusive. Achieving this demonstrated policy transformation is as important as measured CDA impacts on individual children and families because it establishes the potential for sustainable change.

Ideally, more research will be conducted to test other features of CDA policy design. For example, assets in CDAs are restricted to post-secondary education expenses in the United States but in some countries can be withdrawn for other purposes. Different uses of CDA assets may have different impacts on children and their families.

At this writing, seven states have followed the SEED OK example by adopting a similar model, initiating statewide CDA policies to develop their state's workforce (Leiker, Clancy, and Sherraden 2020) and to address the challenge of wealth inequality and child development. Most key design elements are satisfied in their policies. Momentum in state CDA policy development has been increasing over the last several years, informed directly by SEED OK research results. Additional state-level discussions are under way and more related policy development seems likely in the future.

In 2021, more than five hundred thousand newborns will automatically receive a CDA as the continuation of universal policy development. This universal inclusion is an important step. Not only is money invested in the child's name for education and potentially other approved developmental purposes, but low-wealth households and households of color, many of which have had zero or negative net worth, also begin to build an asset worth thousands of dollars. As intended, the universal and automatic CDA in SEED OK eliminates or dramatically reduces disparities by race and ethnicity in ownership of accounts and asset ac-

cumulation for postsecondary education. Further, the trusted institutional structure of the 529 plan could become a delivery platform for reparations or other targeted remedies and funding for particular groups, which would reflect the full meaning of targeted universalism.

The seven statewide policies are an important foundation for CDA policy expansion in other states and at the federal level. CDAs have been included in several federal legislative proposals, often with bipartisan support. For example, the America Saving for Personal Investment, Retirement, and Education (ASPIRE) Act has been introduced in several sessions of Congress (Cramer 2009; Cramer and Schreur 2015), and the USAccounts: Investing in America's Future Act was introduced in 2015 (Harvin 2016).[10] Both proposals would open an account and provide an initial deposit for every newborn in the country. Both would provide a progressive savings match. Funds could be used for postsecondary education, homeownership, and retirement security. These provisions are consistent with several design elements listed in the universal CDA policy model. A national policy would have the greatest potential to include all children, reduce disparities in household wealth, and promote child development.

The universal CDA model has also been adopted outside the United States (Sherraden, Huang, and Zou 2019). For example, Singapore initiated comprehensive policies based on four national programs to build assets for all children—the Baby Bonus and Child Development Accounts, Edusave Accounts, Post-Secondary Education Accounts, and Medisave Accounts. In practice, these accounts function as an integrated CDA policy for education and health, a policy linked to the account holder's Central Provident Fund for housing and retirement (Loke and Sherraden 2019). Another example is the Saving for Every Child Program, Israel's newly implemented policy for all children under the age of eighteen (Grinstein-Weiss et al. 2019).

As more children are included in CDA policies, researchers and policymakers wait to learn how the children will fare. Does having a CDA help to improve children's academic performance? Does it make them more likely than their peers to graduate from high school and go on to postsecondary education or training? When all children have CDAs, will public funding change to build assets at least equally, if not progressively? Can state 529 plans be remodeled to further reduce regressivity in public funding and better use public resources for asset building for all children? Can CDAs measurably reduce wealth inequality, especially by race? Over the long term, can CDAs transition from a focus on children to become a lifelong asset-building policy? Notwithstanding promising results from the SEED OK experiment and other CDA research, future research should address these and other longer-term questions.

REFERENCES

Adams, Deborah. 2008. "SEED Preschool Demonstration and Impact Assessment." Lawrence: University of Kansas School of Social Welfare.

Beverly, Sondra G., Margaret M. Clancy, and Michael Sherraden. 2016. "Universal Accounts at Birth: Results from SEED for Oklahoma Kids." *CSD* research summary 16-07. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7QC030S.

Beverly, Sondra G., William Elliott III, and Michael Sherraden. 2013. "Child Development Accounts and College Success: Accounts, Assets, Expectations, and Achievements." *CSD* Perspective 13-27, November. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936 /K7805247.

Beverly, Sondra G., Youngmi Kim, Michael Sherraden, Yunju Nam, and Margaret M. Clancy. 2012. "Socioeconomic Status and Early Savings Outcomes: Evidence from a Statewide Child Development Account Experiment." *CSD* research brief 12-34, July. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10 .7936/K7D21X40.

———. 2015. "Can Child Development Accounts Be Inclusive? Early Evidence from a Statewide Experiment." *Children and Youth Services Review* 53 (June): 92–104. DOI: 10.1016/j.childyouth .2015.03.003.

Blumenthal, Anne, and Trina R. Shanks. 2019. "Communication Matters: A Long-Term Follow-Up

---

10. USAccounts: Investing in America's Future Act of 2015, H.R. 4045, 114th Cong. (2015).

Study of Child Savings Account Program Participation." *Children and Youth Services Review* 100:136–46. DOI: 10.1016/j.childyouth.2019.02.016.

Boen, Courtney, Lisa A. Keister, and Nick Graetz. 2021. "Household Wealth and Child Body Mass Index: Patterns and Mechanisms." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 80–100. DOI: 10.7758/RSF.2021.7.3.04.

Center for Social Development. 2018. "Pennsylvania Adopts Universal Child Development Account Policy." Last modified June 27, 2018. https://csd.wustl.edu/pennsylvania-adopts-universal-child-development-account-policy.

City of New York. 2017. "Mayor de Blasio, Commissioner Menin and NYC Kids Rise Announce Queens Public School District to Pilot the First NYC Child Savings Account Program, Helping Thousands of Students Save for College." News release, January 5. Accessed March 16, 2021. https://www1.nyc.gov/office-of-the-mayor/news/008-17/mayor-de-blasio-commissioner-menin-nyc-kids-rise-queens-public-school-district-to.

Clancy, Margaret M. 2019. "The Meadowlark Scholarship Act: Testimony on L.B. 544 before the Education Committee, 106th Nebraska Legislature." *CSD* testimony 19-03. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/683w-bn26.

Clancy, Margaret M., and Sondra G. Beverly. 2017a. "529 Plan Investment Growth and a Quasi-Default Investment for Child Development Accounts." *CSD* policy brief 17-42, November. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7F76C1Z.

———. 2017b. "Do Savings and Assets Reduce Need-Based Aid for Dependent Students?" *CSD* policy brief 17-10, February. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7KW5FJX.

———. 2017c. "Statewide Child Development Account Policies: Key Design Elements." *CSD* research report 17-30. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7G44PS2.

Clancy, Margaret M., Sondra G. Beverly, Michael Sherraden, and Jin Huang. 2016. "Testing Universal Child Development Accounts: Financial Ef-

fects in a Large Social Experiment." *Social Service Review* 90(4): 683–708. DOI: 10.1086/689756.

Clancy, Margaret M., Peter Orszag, and Michael Sherraden. 2004. "College Savings Plans: A Platform for Inclusive Saving Policy?" *CSD* perspective 04-25. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7VQ327B.

Clancy, Margaret M., and Michael Sherraden. 2014. "Automatic Deposits for All at Birth: Maine's Harold Alfond College Challenge." *CSD* policy report 14-05. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7X63MGJ.

Clancy, Margaret M., Michael Sherraden, and Sondra G. Beverly. 2015. "College Savings Plans: A Platform for Inclusive and Progressive Child Development Accounts." *CSD* policy brief 15-07, January. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7F18Z8T.

———. 2019a. "Child Development Accounts at Scale: Sample State Legislation." *CSD* policy summary 19-46. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/cptg-2n77.

———. 2019b. "Essential Policy Design Elements for Statewide Child Development Accounts." *CSD* fact sheet 19-47, December. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/1rvq-dy43.

———. 2019c. "SEED for Oklahoma Kids Wave 3: Extending Rigorous Research and a Successful Policy Model." *CSD* research brief 19-06, March. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/zx2j-0543.

Clancy, Margaret M., Michael Sherraden, Jin Huang, Sondra G. Beverly, and Youngmi Kim. 2019. "Statewide Child Development Accounts and Local Partnerships: A Scalable Model that Can Include All Families." *CSD* policy brief 19-45, November. St. Louis, MO: Washington University, Center for Social Development. DOI: 10.7936/q310-7h95.

Cramer, Reid. 2009. "The ASPIRE Act of 2009: Questions and Answers." Washington, D.C.: New America Foundation.

Cramer, Reid, and Elliot Schreur. 2015. "Ensure Every Child Has a Lifelong Savings Account." Paper in the series Pioneering Change: Innovative Ideas for Children and Families. Washington, D.C.: First

Focus on Children. Accessed March 16, 2021. https://firstfocus.org/wp-content/uploads/2015/04/Ensure-Every-Child-Has-a-Lifelong-Savings-Account.pdf.

Currie, Janet. 2004. "The Take Up of Social Benefits." *NBER* working paper no. W10488. Cambridge, Mass.: National Bureau of Economic Research. DOI: 10.3386/w10488

Elliott, William, III, Mesmin Destin, and Terri Friedline. 2011. "Taking Stock of Ten Years of Research on the Relationship Between Assets and Children's Educational Outcomes: Implications for Theory, Policy and Intervention." *Children and Youth Services Review* 33(11): 2312–28. DOI: 10.1016/j.childyouth.2011.08.001.

Federal Reserve Bank of New York (Federal Reserve). 2017. "At a Glance: Findings from the February SCE Credit Access Survey." Accessed November 1, 2020. New York: Federal Reserve Bank of New York. https://www.newyorkfed.org/microeconomics/sce/credit-access.html#/.

Gibson-Davis, Christina, and Heather D. Hill. 2021. "Childhood Wealth Inequality in the United States: Implications for Social Stratification and Well-Being." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 1–26. DOI: 10.7758/RSF.2021.7.3.01.

Gray, Karen, Margaret M. Clancy, Michael Sherraden, Kristen Wagner, and Julie Miller-Cribbs. 2012. "Interviews with Mothers of Young Children in the SEED for Oklahoma Kids College Savings Experiment." *CSD* research report 12-53. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K779445X.

Grinstein-Weiss, Michal, Olga Kondratjeva, Stephen P. Roll, Ofir Pinto, and Daniel Gottlieb. 2019. "The Saving for Every Child Program in Israel: An Overview of a Universal Asset-Building Policy." *Asia Pacific Journal of Social Work and Development* 29(1): 20–33. DOI: 10.1080/02185385.2019.1574600.

Grinstein-Weiss, Michal, Trina R. Shanks, and Sondra G. Beverly. 2014. "Family Assets and Child Outcomes: Evidence and Directions." *Future of Children* 24(1): 147–70. DOI: 10.1353/foc.2014.0002.

Harvin, Monica. 2016. "Congressmen Seek to Help the 97% of Families Without a College Savings 529 Plan." *GoodCall Education News*, May 4.

Huang, Jin, Sondra G. Beverly, Margaret M. Clancy, Terry Lassar, and Michael Sherraden. 2013. "Early Program Enrollment in a Statewide Child Development Account Program." *Journal of Policy Practice* 12(1): 62–81. DOI: 10.1080/15588742.2012.739124.

Huang, Jin, Sondra G. Beverly, Youngmi Kim, Margaret M. Clancy, and Michael Sherraden. 2019. "Exploring a Model for Integrating Child Development Accounts with Social Services for Vulnerable Families." *Journal of Consumer Affairs* 53(3): 770–95. DOI: 10.1111/joca.12239.

Huang, Jin, Youngmi Kim, Michael Sherraden, and Margaret M. Clancy. 2017. "Heterogeneous Effects of Child Development Accounts on Savings for Children's Education." *Journal of Policy Practice* 16(1): 59–80. DOI: 10.1080/15588742.2015.1132402.

Huang, Jin, Yunju Nam, Michael Sherraden, and Margaret M. Clancy. 2019. "Impacts of Child Development Accounts on Parenting Practices: Evidence from a Randomised Statewide Experiment." *Asia Pacific Journal of Social Work and Development* 29(1): 34–47. DOI: 10.1080/02185385.2019.1575270.

Huang, Jin, Michael Sherraden, Youngmi Kim, and Margaret M. Clancy. 2014. "Effects of Child Development Accounts on Early Social-Emotional Development: An Experimental Test." *JAMA Pediatrics* 168(3): 265–71. DOI: 10.1001/jamapediatrics.2013.4643.

Huang, Jin, Michael Sherraden, and Jason Q. Purnell. 2014. "Impacts of Child Development Accounts on Maternal Depressive Symptoms: Evidence from a Randomized Statewide Policy Experiment." *Social Science and Medicine* 112(1): 30–38. DOI: 10.1016/j.socscimed.2014.04.023.

Huang, Jin, Li Zou, and Michael Sherraden, eds. 2020. *Inclusive Child Development Accounts: Toward Universality and Progressivity*. Abingdon: Routledge.

Jackson, Margot, Chinyere Agbai, and Emily Rauscher. 2021. "The Effects of State-Level Medicaid Coverage on Family Wealth." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 216–34. DOI: 10.7758/RSF.2021.7.3.10.

Kim, Youngmi, Michael Sherraden, Jin Huang, and Margaret M. Clancy. 2015. "Child Development Accounts and Parental Educational Expectations for Young Children: Early Evidence from a Statewide Social Experiment." *Social Service Review* 89(1): 99–137. DOI:10.1086/680014.

Leiker, Chris, Margaret M. Clancy, and Michael Sher-

raden. 2020. "Insights from State Treasurers: Developing and Implementing Statewide Child Development Account Policies." *CSD* policy summary 20-19. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/14tc-2b43.

Lerman, Robert I., and Signe-Mary McKernan. 2008. "Benefits and Consequences of Holding Assets." In *Asset Building and Low-Income Families*, edited by Signe-Mary McKernan and Michael Sherraden. Washington, D.C.: Urban Institute Press.

Loke, Vernon, Margaret M. Clancy, and Robert Zager. 2009. "Account Monitoring Research at Michigan SEED." *CSD* Research Report 09-62. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K7FT8KHB.

Loke, Vernon, and Michael Sherraden. 2019. "Building Assets from Birth: Singapore's Policies." *Asia Pacific Journal of Social Work and Development* 29(1): 6–19. DOI: 10.1080/02185385.2019.1571940

Marks, Ellen L., Bryan B. Rhodes, and Scott Scheffler. 2008. "SEED for Oklahoma Kids: Baseline Analysis." Research Triangle Park, N.C.: RTI International.

Martin, Joyce A., Brady E. Hamilton, Michelle J. K. Osterman, and Anne K. Driscoll. 2019. "Births: Final Data for 2018." *National Vital Statistics Reports 68*, no. 13. Hyattsville, Md.: National Center for Health Statistics. Accessed December 22, 2020. https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_13-508.pdf.

Michelmore, Katherine, and Leonard M. Lopoo. 2021. "Exposure to the Earned Income Tax Credit in Early Childhood and Family Wealth." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 196–215. DOI: 10.7758/RSF.2021.7.3.09.

Miller, Portia, Tamara Podvysotska, Laura Betancur, and Elizabeth Votruba-Drzal. 2021. "Wealth and Child Development: Differences in Associations by Family Income and Developmental Stage." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 152–74. DOI: 10.7758/RSF.2021.7.3.07.

Nam, Yunju. 2008. "Welfare Reform and Asset Accumulation: Asset Limit Changes, Financial Assets, and Vehicle Ownership." *Social Science Quarterly* 89(1): 133–54. DOI: 10.1111/j.1540-6237.2008.00525.x

Nam, Yunju, Youngmi Kim, Margaret M. Clancy, Robert Zager, and Michael Sherraden. 2013. "Do Child Development Accounts Promote Account Holding, Saving, and Asset Accumulation for Children's Future? Evidence from a Statewide Randomized Experiment." *Journal of Policy Analysis and Management* 32(1): 6–33. DOI: 10.1002/pam.21652.

Nepomnyaschy, Lenna, Allison Dwyer Emory, Kasey J. Eickmeyer, Maureen R. Waller, and Daniel P. Miller. 2021. "Parental Debt and Child Well-Being: What Type of Debt Matters for Child Outcomes?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 122–51. DOI: 10.7758/RSF.2021.7.3.06.

O'Brien, Rourke. 2008. "Ineligible to Save? Asset Limits and the Saving Behavior of Welfare Recipients." *Journal of Community Practice* 16(2): 183–99. DOI: 10.1080/10705420801998003.

Pfeffer, Fabian T., and Nora Waitkus. 2021. "Comparing Child Wealth Inequality Across Countries." *RSF: The Russell Sage Foundation Journal of the Social Sciences* 7(3): 28–49. DOI: 10.7758/RSF.2021.7.3.02.

powell, john a. 2009. "Post-Racialism or Targeted Universalism?" *Denver University Law Review* 86 (Special Issue): 785–806.

Prosperity Now. 2018. "An In-Depth Look at the CSA Field: State and Local Policy." October. Washington, D.C.: Campaign for Every Kid's Future and Prosperity Now. Accessed December 22, 2020. https://prosperitynow.org/sites/default/files/resources/CSA_Policy_Brief_Field_Scan_0.pdf.

Ratcliffe, Caroline, Signe-Mary McKernan, Laura Wheaton, and Emma Cancian Kalish. 2016. "The Unintended Consequences of SNAP Asset Limits." July. Washington, D.C.: Urban Institute, Opportunity and Ownership Initiative. Accessed December 22, 2020. http://www.urban.org/research/publication/unintended-consequences-snap-asset-limits.

Saez, Emmanuel. 2019. "Striking It Richer: The Evolution of Top Incomes in the United States (Updated with 2017 Final Estimates)." Berkeley: University of California, Department of Economics. Accessed December 22, 2020. https://eml.berkeley.edu/~saez/saez-UStopincomes-2017.pdf.

Sallie Mae and Ipsos. 2018. "How America Saves for College: Sallie Mae's National Study of Parents with Children under Age 18." Newark, Del.: Sallie Mae and Ipsos. Accessed March 16, 2021. https://ww.salliemae.com/assets/about/who_we_are/HAS2018_Full_Report.pdf.

Schuetz, Jenny. 2020. "Rethinking Homeownership Incentives to Improve Household Financial Security and Shrink the Racial Wealth Gap." *Brookings Blueprints for American Renewal & Prosperity* brief, December 9. Washington, D.C.: Brookings Institution. Accessed December 22, 2020. https://www.brookings.edu/research/rethinking-homeownership-incentives-to-improve-household-financial-security-and-shrink-the-racial-wealth-gap.

Shanks, Trina R., Toni Johnson, and Kerri Nicoll. 2008. "Helping People Act on Their Hopes Rather Than Their Fears: Lessons from Non-Enrollees in the SEED Initiative." *SEED* research report. Lawrence: University of Kansas. DOI: 10.7936/K70 28R2Z.

Shanks, Trina R., Youngmi Kim, Vernon Loke, and Mesmin Destin. 2010. "Assets and Child Well-Being in Developed Countries." *Children and Youth Services Review* 32(11): 1488–96. DOI: 10.1016/j.childyouth.2010.03.011.

Shanks, Trina R., Kerri Nicoll, and Toni Johnson. 2014. "Assets and African Americans: Attempting to Capitalize on Hopes for Children Through College Savings Accounts." *Review of Black Political Economy* 41(3): 337–56. DOI: 10.1007/s12 114-014-9185-y.

Sherraden, Michael. 1991. *Assets and the Poor: A New American Welfare Policy*. Armonk, N.Y.: M. E. Sharpe.

Sherraden, Michael, and Margaret M. Clancy. 2005. "The Universal Model in SEED." St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K71R6Q03.

Sherraden, Michael, Margaret M. Clancy, and Sondra G. Beverly. 2018. "Taking Child Development Accounts to Scale: Ten Key Policy Design Elements." *CSD* policy brief 18-08, February. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/K71C1WF9.

Sherraden, Michael, Margaret M. Clancy, Jin Huang, and Sondra G. Beverly. 2020. "Child Development Accounts in the COVID-19 Crisis: Lessons from the Great Recession." *CSD* research and policy report 20-11. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936/c5dg-qz60.

Sherraden, Michael, Margaret M. Clancy, Yunju Nam, Jin Huang, Youngmi Kim, Sondra G. Beverly, Lisa Reyes Mason, et al. 2015. "Universal Accounts at Birth: Building Knowledge to Inform Policy." *Journal of the Society for Social Work and Research* 6(4): 541–64. DOI: 10.1086/684139.

Sherraden, Michael, Jin Huang, and Li Zou. 2019. "Toward Universal, Progressive, and Lifelong Asset Building: Introduction to the Special Issue on Inclusive Child Development Accounts." *Asia Pacific Journal of Social Work and Development* 29(1): 1–5. DOI: 10.1080/02185385.2019.157 5272.

Sherraden, Michael, and Julia Stevens. 2010. "Lessons from SEED, a National Demonstration of Child Development Accounts." *CSD* Research Report 10-35. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10 .7936/K7T43SN7.

U.S. Government Accountability Office. 2020. "Higher Education: Children's Savings Account Programs Can Help Families Build Savings and Envision College." GAO-21-10. Washington: Government Printing Office. Accessed December 22, 2020. https://www.gao.gov/products/gao -21-10.

Zager, Robert, Youngmi Kim, Yunju Nam, Margaret M. Clancy, and Michael Sherraden. 2010. "The SEED for Oklahoma Kids Experiment: Initial Account Opening and Savings." *CSD* research report 10-14. St. Louis, Mo.: Washington University, Center for Social Development. DOI: 10.7936 /K7Z31Z55.

Zucman, Gabriel. 2019. "Global Wealth Inequality." *Annual Review of Economics* 11:109–38. DOI: 10.1146/annurev-economics-080218-025852.

Exposure to the Earned Income Tax Credit in Early Childhood and Family Wealth

KATHERINE MICHELMORE AND LEONARD M. LOPOO

Using the Panel Study of Income Dynamics and a cohort of individuals born between 2000 and 2011, we examine whether exposure to the Earned Income Tax Credit (EITC) in early childhood (birth to age five) affects family wealth in middle childhood (ages six through eleven). Results suggest that a $1,000 increase in EITC exposure in early childhood increases overall family wealth in middle childhood by around 4 percent. We also observe an increase in credit card debt (3 to 4 percent) and evidence that the EITC increases low-income families' position in the wealth distribution. Effects are concentrated among white families; we find little evidence of a significant effect of the EITC on the wealth held by black families. Together, these results imply that although the EITC does appear to increase family wealth in childhood, it may not do much to reduce the substantial wealth gap between black and white families.

Keywords: Earned Income Tax Credit, wealth

Started in 1975, the Earned Income Tax Credit (EITC) is currently one of the largest social welfare programs in the United States. According to the Internal Revenue Service, in 2018, around twenty-five million U.S. households received approximately $63 billion in benefits (IRS 2020). Given the large investment in the EITC over the past forty-five years and the substantial number of beneficiaries, the EITC has received considerable attention. Scholars have shown that the EITC directly affects families by increasing the labor-force participation of single mothers (Eissa and Liebman 1996; Meyer and Rosen-

baum 2001) and by reducing poverty (Hoynes and Patel 2018). The EITC has also been shown to improve a number of outcomes for children (Hoynes, Miller, and Simon 2015; Dahl and Lochner 2012, 2017), and that these effects persist into adulthood. Evidence suggests, for instance, that EITC exposure in childhood increases educational attainment in adulthood (Bastian and Michelmore 2018; Manoli and Turner 2018) and leads to delays in fertility and marriage among women in early adulthood (Michelmore and Lopoo 2019).

Research indicates that the EITC increases

Katherine Michelmore is assistant professor of public administration at the Maxwell School, Syracuse University, United States. **Leonard M. Lopoo** is Maxwell Advisory Board Professor of Public Policy at the Maxwell School, Syracuse University, United States.

family income (Dahl, DeLeire, and Schwabish 2011; Hoynes and Patel 2018), but less is known about how it affects families' ability to accumulate wealth. This is surprising given the many reasons the EITC may affect wealth. The lump-sum nature of the credit could allow families to accumulate savings more easily than a monthly or weekly benefit distribution (Sykes et al. 2015). Additionally, because the EITC has been shown to increase labor supply, particularly among single mothers (see, for example, Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Bastian 2019), employment and earnings gains could also lead to more wealth, through increased savings, access to employer-sponsored retirement accounts, and increases in home equity.

This topic is particularly important to consider at this time, given that wealth inequality has been increasing for decades: although the top 20 percent of the income distribution holds more than 60 percent of all income in the United States, the top quintile of the wealth distribution holds nearly 90 percent (Leiserson, McGrew, and Kopparam 2019). Households with children experience particularly high levels of wealth inequality (Gibson-Davis and Percheski 2018). Our current policies affect income, but wealth and wealth inequality also have important implications for children's outcomes in adulthood, such as college attendance and completion (Lovenheim 2011), marriage and family formation (Addo 2014; Schneider 2011), and the intergenerational transmission of poverty.

This article adds to the EITC literature by asking whether the program affects family wealth and wealth inequality.[1] Using policy variation in EITC exposure in early childhood (birth year until the year a child turns five) generated by federal and state policy changes that occurred differentially by family size over time, we test whether the EITC affects wealth accumulation in middle childhood (ages six through eleven). Given the large wealth differences be-

tween black and white families in the United States, we also investigate whether the EITC affects the racial wealth gap. Using the Panel Study of Income Dynamics (PSID) and cohorts of children born between 2000 and 2011, our findings suggest that the EITC increases family wealth, particularly by increasing checking and savings accounts, retirement savings, and home equity. We also find evidence that the EITC increases one's percentile in the wealth distribution, particularly among the least-educated households, which has implications for overall wealth inequality. Although these benefits are positive, the EITC also increases credit card debt, which we infer is driven by increased access to credit among low-income households. Additionally, we find that the EITC increases savings among white families but has no significant effect on the wealth of black families, despite higher EITC-eligibility rates among black children compared to white children. This suggests that the EITC could increase wealth inequality between black and white families by increasing wealth among white families but having no significant effect on the wealth of black families.

BACKGROUND

The EITC was established in 1975 as a temporary tax credit intended to offset payroll taxes among low-income families. Since its inception, it has been expanded a number of times: it was made permanent in 1978 and has been increased several times, providing a larger credit for families with two or more children beginning in 1991 and for households with at least three children in 2009. It is indexed to inflation and in 2018 was worth up to $6,431 for households with at least three children.

In addition to the federal credit, several states have implemented their own EITCs, which piggyback on the federal credit. Most states structure their EITC as a fixed percentage of the federal EITC, such that families eligible for the federal benefit are also typically eligible

1. We focus our analysis on the EITC because it is one of the largest cash transfer programs for low-income households. An examination of the Child Tax Credit (CTC), which has grown in generosity over the last two decades, is beyond the scope of this article. Over much of the period we analyze, the CTC is not available to households with earnings below $2,500 and extends much further into the income distribution than the EITC. We view the target audience as substantially different from that of the EITC, and worthy of separate analysis.

Figure 1. Kernel Density of EITC Exposure, by Birth Cohort
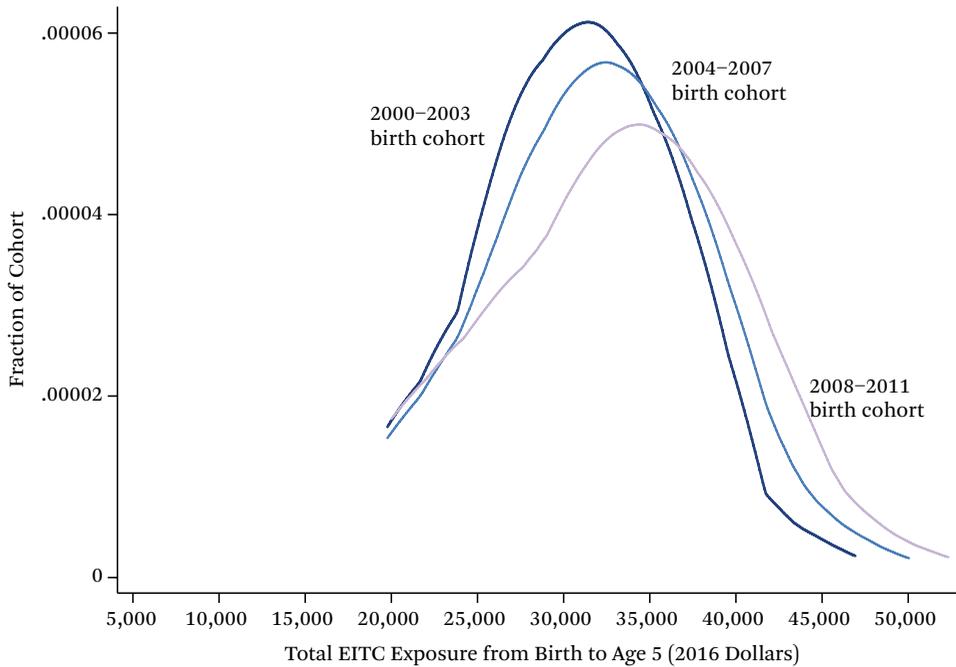
Source: Authors' tabulation based on the Panel Study of Income Dynamics.
Note: Birth cohorts 2000 to 2011. All dollars measured in 2016 terms. Average exposure for 2000–2003 birth cohort: $30,371 (SD=$5,512), for 2004–2007 cohort: $31,719 (SD=$5,990), and for 2008–2011 cohort: $32,591 (SD=$7,013).

for the state benefit. States vary in when they implemented their EITCs, from Rhode Island in 1986 to Hawaii in 2017.[2] States also vary in the generosity of their credits, ranging from 3.5 percent to 85 percent of the federal EITC for some families. Many states have also changed the size of their credits over time, most increasing their generosity, but some reducing or eliminating their EITCs altogether. The majority of states fund their EITCs using federal block grant funds from Temporary Assistance to Needy Families (TANF).

Together, the federal and state variation in the EITC over the last few decades provides ample variation in the amount of benefits to which children are exposed, depending on the year and state of birth, as well as the number of children in their families. We illustrate this variation in

figure 1, which presents kernel densities of potential EITC exposure between birth and age five for a sample of children born between 2000 and 2011, the sample we focus on in this analysis. We define exposure as the maximum federal and state EITC benefit available in each year, given the number of children residing in the household between a focal child's birth and the year they turn five.[3] The average child in our sample was exposed to nearly $32,000 in potential EITC benefits over this five-year span. The minimum exposure was about $20,000, while the maximum exposure was over $50,000 (2016 dollars).

Some variation is evident across birth years. Those born between 2000 and 2003 were, on average, exposed to about $30,000 in EITC benefits in early childhood, some to as little as $20,000, and others to more than $47,000. Among those

2. We use data on EITC benefits through the 2016 tax year, which includes California's first year with an EITC, but does not include Hawaii.

3. Some states (California and Minnesota) have different EITC benefit schedules than the federal benefit schedule. For all states, we use the maximum benefit available in the state as a measure of state EITC exposure.

born between 2004 and 2007, the average exposure increased to approximately $32,000, ranging from $20,000 to $50,000 depending on the state of residence, exact year of birth, and number of children residing in the household. Finally, those born after 2008 were exposed to slightly larger EITC benefits because many states began implementing and expanding their state benefits in the 2010s, and the federal EITC was expanded for households with three or more children in 2009. Among those born between 2008 to 2011, the average exposure in early childhood was $32,000, with some children exposed to $20,000 and others exposed to as much as $52,000. The standard deviation of EITC exposure is nearly $7,000.

How Might the EITC Affect Wealth?

A large body of research finds that expansions to the EITC, particularly in the late 1980s and early 1990s, led to substantial increases in the labor supply of single mothers (Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Hoynes and Patel 2018; Bastian 2019).[4] These increases also led to positive earnings growth in the short term (Dahl, DeLeire, and Schwabish 2011), and into middle age (Neumark and Shirley 2020). Recent research suggests that, because of the work requirements to obtain the credit, the EITC tends to provide the most benefit to households with income between 50 and 150 percent of the federal poverty threshold (Hoynes and Patel 2018), and during economic downturns, the lowest-earning households may risk losing their benefits altogether (Bitler, Hoynes, and Kuka 2017).

A recent body of work also finds substantial positive effects of the EITC on children's outcomes, ranging from reduced incidence of low infant birthweight (Hoynes, Miller, and Simon 2015), increased childhood test scores (Dahl and Lochner 2012, 2017), reductions in incidents of neglect (Berger et al. 2017), increased educational attainment (Bastian and Michelmore 2018; Manoli and Turner 2018), and reduc-

tions in early childbearing (Michelmore and Lopoo 2019).

Although evidence is scant on how the EITC affects overall household wealth, research suggests that the EITC leads to increases in savings (Jones and Michelmore 2018) and reductions in debt (Shaefer, Song, and Shanks 2013). Evidence from qualitative studies and consumption data suggests that recipients use the EITC to pay down debt (Romich and Weisner 2000; Smeeding, Phillips, and O'Conner 2000), purchase large, durable goods (Goodman-Bacon and McGranahan 2008), or save for the future (Sykes et al. 2015; Halpern-Meekin et al. 2015). Much of this work focuses on the contemporaneous effect of the EITC on savings and debt or provides descriptive evidence on how EITC recipients spend their tax refunds. Little is known, however, regarding the longer-term, causal effect of the EITC on household wealth. Further, all of these studies naturally analyze the effect of the EITC on the adult recipients; little is known about how EITC exposure affects the resources available to children, and how exposure to the EITC in early childhood affects family wealth in subsequent years.

The EITC may affect family wealth through a variety of mechanisms. First, the benefit itself is distributed through a lump-sum payment along with a tax filer's annual tax refund. This payment functions as a forced savings mechanism that might allow families to increase savings (Jones and Michelmore 2019) or put a down payment on a house that could increase wealth in the long term. Second, because the EITC has been shown to increase the labor supply of single mothers (Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Bastian 2019), increased earnings may lead to less debt and more savings, particularly if increased employment leads to longer-term earnings growth (Dahl, DeLeire, and Schwabish 2011). Increased employment may increase access to fringe benefits like employer-provided retirement savings accounts such as a 401(k) or pension.

---

4. Much of the labor supply effects of the EITC have been shown on the extensive margin. There is less of a consensus on intensive-margin effects of the EITC, in part because the structure of the EITC benefit schedule creates incentives for some to increase their labor supply and potentially discourages labor supply among those on the phase-out region of the benefit schedule. Those who benefit the most from the EITC tend to be families with earnings between 50 and 150 percent of the federal poverty line (Hoynes and Patel 2018).

The lump-sum nature of the EITC could also increase debt if households use the EITC to put a down payment on large, durable items such as cars (Goodman-Bacon and McGranahan 2008), furniture, or appliances. If recipients use the EITC to make a down payment on a house, we would expect to find increases in home equity, but also potentially mortgage debt as well. Finally, through their increased work experience, EITC recipients may gain access to more credit, which may increase debt. Additionally, low-income workers may have volatile income and employment, which could lead to increases in debt if they rely on credit to smooth consumption in the presence of income volatility. On the other hand, low-income families are less likely to have access to cheaper forms of credit such as credit cards and thus may be unable to smooth consumption accordingly (Dynarski and Gruber 1997; Baker and Yannelis 2017). In these cases, we may find no association between the EITC and debt accumulation.

The EITC may decrease household wealth through a number of mechanisms as well. Households with asset income greater than $3,000 per year are ineligible for the credit. This restriction has been shown to reduce assets held in interest-bearing accounts for filers on the phase-out region of the EITC benefit schedule (Weber 2016), which may lead to reductions in overall wealth for these households.

Beyond the level of family wealth, the EITC could also affect the distribution of wealth across families. It might reduce wealth inequality across households given that it provides a benefit targeted toward low- and moderate-income households. If, on net, these households increase their net worth, we might expect to find an overall reduction in wealth inequality. We would also expect the EITC to affect wealth inequality differently depending on the measure of wealth inequality used: because the EITC predominantly affects families in the bottom half of the income distribution, we may expect to find a narrowing of the gap between the 50th percentile and the 10th percentile of the wealth distribution, but no change in the gap

between the 90th and the 50th. In short, the effects of the EITC on wealth are theoretically ambiguous and could have heterogeneous effects.

Data

To study the relationship between EITC exposure and wealth, we rely on data from the Panel Study of Income Dynamics (PSID). The PSID began in 1968 with a set of approximately 4,800 families. Each year, a representative from each family, called the head of household, was asked a series of employment and demographic questions providing detailed information about the head as well as several other members of the family. The PSID continued to record data annually until 1997, when data collection became biennial. For this project, 2017 was the last year of data available.

The PSID is an ideal data source for this analysis of the EITC and family wealth for several reasons. First, the PSID recorded information not only for adults in the PSID, but also for their children. Because the PSID asks about family wealth during childhood and we can calculate EITC exposure in childhood based on family characteristics, we have a fairly large analytic sample of children with information on their parents to answer our research question. Second, in 1984, the PSID began asking respondents about their wealth. Wealth questions were repeated in 1989, 1994, and starting in 1999, the questions were asked consistently every year data were collected, that is, every other year until 2017. Thus, we have an extensive set of wealth data collected over several years for a large number of families. Finally, because the PSID collects data on the state of residence for the head of household along with information on the number of children in the family, we can construct a measure of potential EITC benefits for each family when the child was young as well as the wealth data measured after EITC exposure.

For this study, we selected all individuals born between 2000 and 2011 who resided with an adult in the PSID study between 2000 and 2017, had a survey weight,[5] and had nonmissing

---

5. We created a weight for these children using the average panel weight for the child reported from the year the child was born through the year the child turned five (see Bastian and Michelmore 2018; Michelmore and Lopoo 2019).

values for the control variables. We use a value-added model, which requires everyone in our sample to have had a nonmissing wealth measure before the birth of the focal child. Because the PSID began asking the wealth questions more regularly only in 1999, this restricts our sample to those born from 2000 forward. Given these selection criteria, our final analytic sample size was 3,928. We also use the CPI-U-RS to deflate all monetary values to 2016 dollars. Table 1 provides descriptive statistics for the PSID sample.

Table 1. Descriptive Statistics, PSID

	Full Sample	White	Black
EITC (in thousands)	31.81	31.79	31.92
	(6.23)	(6.21)	(6.52)
Wealth outcomes			
Total wealth	143,736	164,482	23,439
	(335,596)	(340,656)	(57,581)
Percentile in the wealth distribution	50.11	55.5	26.55
	(29.41)	(27.7)	(23.45)
Checking or savings	18,298	20,789	3,694
	(53,693)	(57,388)	(11,759)
Stocks	18,420	22,408	415
	(101,320)	(112,579)	(5,443)
Vehicles	16,063	17,480	9,562
	(18,756)	(19,326)	(12,651)
Annuity or IRA	30,251	35,666	3,376
	(98,170)	(106,905)	(23,404)
Home equity	76,793	85,619	15,953
	(179,373)	(159,785)	(40,778)
Debt outcomes[a]			
Credit card debt	3,912	4,545	1,695
	(8,110)	(8,623)	(5,727)
Student loans	10,423	10,578	11,042
	(29,925)	(31,678)	(23,895)
Medical debt	1,639	1,686	1,595
	(17,553)	(19,056)	(11,447)
Legal debt	81	75	124
	(1,170)	(1,120)	(1,447)
Family debt	286	363	14
	(2,270)	(3,074)	(185)
Demographic characteristics			
Race–ethnic origin			
White	0.781	1	0
Black	0.187	0	1
Hispanic	0.023	0	0
Other race	0.01	0	0
Female	0.494	0.49	0.532
Year of birth	2,005.4	2,005.4	2,005.4
	(3.3)	(2.28)	(3.43)

(*continued*)

Table 1. (*continued*)

	Full Sample	White	Black
Demographic characteristics (*cont.*)			
Head's education	13.93	14.12	13.15
	(2.15)	(2.14)	(1.98)
Head's age	33.37	32.83	35.43
	(8.88)	(8.07)	(11.36)
Share of early childhood with married parents	0.785	0.856	0.471
Number of children in household (age 0 to 5)			
One	0.142	0.141	0.156
Two	0.461	0.483	0.359
Three	0.253	0.25	0.267
Four	0.094	0.083	0.141
More than four	0.093	0.044	0.076
State characteristics			
Maximum welfare benefit (in thousands)	4.52	4.61	4.00
	(1.763)	(1.7)	(1.82)
Minimum wage	7.67	7.69	7.52
	(0.916)	(0.923)	(0.883)
State unemployment rate	6.72	6.65	6.88
	(2.24)	(2.24)	(2.16)
Number of observations	3,928	2,125	1,742

Source: Author's calculations using the Panel Study of Income Dynamics.
Note: Children born between 2000 and 2011. State characteristics come from the University of Kentucky's Center for Poverty Research. All income and wealth measures inflated to 2016 dollars.
[a] Debt outcomes not assessed in all years. For each debt outcome, sample size for full sample = 3,891, sample size for white subsample = 2,100, sample size for black subsample = 1,731.

Earned Income Tax Credit

The Earned Income Tax Credit variable measures the aggregate total of the maximum federal and state earned income tax credits possible for the child's family between the year of the child's birth and the year the child turned five, a period we call early childhood. We calculate the maximum EITC credit based on the year, the state of residence for the family, and the number of children in the home.[6] Variation in the EITC measure, therefore, does not depend on the earnings of the household, but is based on changes in federal and state EITC rules, moves across state lines, and changes in family size. According to table 1, the mean EITC exposure benefit for the family from the year of the child's birth until the year the child turned five was $31,810.

Wealth

The biennial pattern of data collection that started in 1999 creates a few data considerations that we want to balance when using the wealth data. First, because wealth can fluctuate from one year to the next, we calculate the mean wealth for each family over a five-year interval (three panel waves) to create a wealth measure that is less subject to transitory changes in wealth than we might find if we used a measure from a single year. We calculate mean wealth at age six, eight, and ten for those born in odd-numbered years, and at age seven, nine, and eleven for those born in even numbered years. In most cases, we have three wealth measures during that interval, but in some instances as few as one year.

Given the importance of having multiple

6. We follow families in the PSID if they move across state lines.

years of wealth data, we start our data series for wealth in 1999, the year after which wealth data was collected biennially. These data choices imply that our study will focus on six wealth measures, five of which the PSID collected directly from 1999 to 2017: the total value of checking and savings (mean = $18,298); the total value of stocks ($18,420); the total value of all vehicles, including vans, trucks, trailers, and boats ($16,063); the total value of any individual retirement accounts (IRAs) or annuities ($30,251); and home equity ($76,793). In addition, we also created a cumulative measure of wealth, which is the sum of checking and savings, stocks, IRAs and annuities, and home equity categories.[7] Table 1 shows that the mean wealth level in the full sample is $143,736.

For comparison purposes, we supply means reported by Fabian Pfeffer and colleagues (2016) from several of the same categories for the PSID (although their data come from 2007 so we inflate to 2016 dollars to make them comparable) in table A1. The average age of the head was fifty in their file. In our sample, the mean age was just over thirty-three, so the families in our analytic sample were younger and had less time to accumulate wealth. As expected, in all instances, the wealth measures in our file are lower than but consistent with those reported by Pfeffer and colleagues. For instance, the reported checking and savings value for all families in the PSID was nearly $34,000 for the Pfeffer et al. study and the mean for our sample around $18,000. Mean levels for the various wealth categories range from $16,000 for vehicles to over $77,000 in home equity. For our analyses, we also created a wealth inequality measure defined as the

family's percentile of wealth in the overall wealth distribution.[8] Unsurprisingly, the mean percentile for this wealth measure is the median.

Beginning in 2011, the PSID began to collect data on credit card debt, student loan debt, medical debt, debt to other family members, and legal debt.[9] In supplemental analyses, we estimate the relationship between EITC benefits and these additional measures. The sample size for the models of these outcomes is 3,891 observations.

The second and third columns of table 1 show considerable differences in wealth between white and black families in the PSID. We ran t-tests, and found statistically significant differences for all of the wealth categories (overall wealth, checking or savings, stocks, vehicles, retirement income, and home equity) as well as the credit card and family debt categories ($p < .01$ in all instances).[10] The mean white family has around $165,000 in wealth relative to $23,439 for black families. We also find big differences in their position in the wealth distribution, where the mean white family is at the 55th percentile relative to the 27th percentile for black families. White families had about $17,000 more in checking and savings, around $22,000 more in stocks, vehicles worth $8,000 more, retirement assets of about $32,000 more, and home equity that was $70,000 higher than black families. White families did have higher credit card debt, around $3,000 more, and debt to families (approximately $350) as well. These statistics show considerable differences in the wealth accumulation between black and white families with young children.

---

7. Following Edward Wolff (2016, 2017), we do not include the value of vehicles in the total wealth calculation because its consumption value is usually greater than its resale value.

8. We also created a wealth inequality measure defined as the position in the wealth distribution for a person's birth cohort. The correlation between the overall wealth inequality measure that we used and this cohort wealth measure was nearly 0.99, and preliminary results using this cohort measure, not surprisingly, were nearly identical to those we report.

9. In 2013, the PSID added farm assets and debt, other real estate assets and debt, and "other debt" as additional wealth measures. Given that these categories do not apply to most families and are available for only three waves, we chose not to include them in our analyses.

10. Only the tests for the difference in student loan, medical, and legal debt were not statistically significant.

EMPIRICAL STRATEGY

To estimate the effect of EITC exposure in early childhood on family wealth in middle childhood, we use models of the following form:

$$Y_{ist} = \beta_0 + \beta_1 maxEITC05_{ist} + \beta_2 X_{ist}$$
$$+ \beta_3 Z_{st} + \alpha_s + \gamma_t + \varepsilon_{ist},$$

where Y_{ist} represents our outcome of interest, the average family wealth (total wealth, savings, wealth percentile, stocks, vehicles, pensions, and home equity) or debt (credit card debt, student loans, medical debt, legal debt, and family debt) when the child is in middle childhood (either six to ten or seven to eleven years old, depending on the birth year). We estimate this as a function of EITC exposure in early childhood (from birth to age five), *max EITC*05$_{ist}$, which we calculate as the sum of the maximum federal and state EITC a child's family could receive each year between the focal child's birth until the year they turn five, based on the year, state of residence, and number of children in the household each year. Our parameter of interest is β_1, which represents the effect of a $1,000 increase in EITC exposure from birth to age five on family wealth or debt when a child is in middle childhood.

We control for a number of demographic characteristics (Y_{ist}), including gender and race of the child. In addition, we include controls for the head's age in the year the child was born and the maximum education level reported for the head between the child's year of birth and the year of the child's fifth birthday. The marital status variable is the proportion of the period between the year of the child's birth and the year the child turned five that the head was married. We also add controls for the proportion of the time the child lived in a household with one, two, three, and four other children (more than four is the omitted category).

In addition, we include a number of control variables measured at the state level (Z_{st}), all measured in the year the child turned five. First, we use the state unemployment rate to capture the state of the business cycle just prior to the wealth calculation. Next, we use the maximum TANF benefit for a family of three to measure the generosity of the state. Our final measure is the state minimum wage, which suggests the minimum value of labor-force participation in the absence of the EITC in the state.

Finally, in all models, we add state of birth fixed effects, year of birth fixed effects, and state-specific year of birth time trends. State fixed effects account for fixed differences across states that may be correlated with EITC generosity and household wealth. Year of birth fixed effects control for national trends that may affect family wealth over time. State-specific time trends control for differential trends in family wealth across states.

With all controls in the model, variation in EITC exposure stems from three sources: within-state changes to EITC generosity over time driven by the implementation and expansion of state EITCs, cross-state differences in EITC generosity at a single point in time, and differences in EITC generosity by family size over time. If we assume that no unobserved factors are correlated with both EITC generosity and family wealth in middle childhood, this model will produce unbiased estimates of the effect of EITC exposure. However, we would have omitted variable bias concerns if, for example, states implemented other policies at the same time as state EITC changes that also affected family wealth. Our controls for other state factors and state-specific time trends should account for the conditions of the state at the time of state EITC implementation and expansions.

In addition to the model described (which we refer to as model 1), we also report results from models including a pre-birth wealth variable measured in the year (or two years depending on the birth cohort) before the birth. This value-added model shows the effect of EITC exposure in early childhood, controlling for the wealth of the family immediately before the child's birth. Coefficient estimates from this model should be less subject to omitted variable bias than those reported in model 1 because any omitted factor correlated with EITC exposure and middle childhood wealth but that also affects pre-birth wealth should be absorbed by the pre-birth wealth coefficient. We report results from this specification as model 2.

As demonstrated earlier, differences in wealth between black and white families in the

PSID are large. In addition to the described models, we also investigate a possible different effect of EITC exposure in early childhood for black and white families in the PSID by conducting some models separately for black and white children.[11]

RESULTS

The first column of table 2 (model 1) presents results for overall wealth; the individual wealth variables, available from 1999 to 2017; and the percentile in the wealth distribution (wealth inequality) measure. Each cell entry represents the results from a different model. For each outcome, we present the coefficient on the EITC exposure term, the standard error on the estimate in parentheses, and the percentage change in the mean wealth value into which that coefficient translates in brackets.

The first row suggests that EITC benefits are positively related to overall wealth in middle childhood: a $1,000 increase in EITC benefits is associated with a $7,251 increase (or about a 5.0 percent increase at the mean) in wealth. Additional analyses suggest that the increase in wealth comes from three sources: growth in checking or savings, retirement savings, and home equity. Our results show that a $1,000 increase in EITC benefits is associated with a $1,055 increase (5.8 percent) in checking or savings, a $1,544 increase in retirement savings (5.1 percent), and a $4,539 increase (5.9 percent) in home equity. None of the point estimates for the remaining wealth categories is statistically significant.

The final row also suggests that EITC exposure increases one's position in the wealth distribution. A $1,000 increase is associated with a 0.48 percentile-point change in one's position in the wealth distribution. Given that a standard deviation change is around $6,230, this represents about a three unit (percentile) increase in position in the wealth distribution.

In model 2, we add the pre-birth wealth measure, which should reduce potential omitted variable bias in the EITC exposure coefficient estimate, as any omitted factor that is related

to both the wealth outcome and the EITC exposure variable also likely affected the pre-birth wealth measure. Not surprisingly, the pre-birth wealth measure is substantively and statistically significantly related to most of the middle childhood wealth measures (for coefficients, see table A2). For example, every dollar increase in pre-birth wealth in checking and savings increases checking and savings wealth in middle childhood by around $0.51. We find large and statistically significant impacts for vehicles (0.23), annuity or IRA (0.56), and home equity (0.74) as well. Only the overall pre-birth wealth variable and the pre-birth stock wealth is unrelated to wealth in middle childhood.

After controlling for pre-birth wealth, we continue to find a large and statistically significant effect of EITC exposure on total wealth, checking and savings, and retirement savings in model 2, and for many other outcomes, the point estimates are similar to those in model 1. This implies little correlation between EITC exposure in early childhood and pre-birth measures of family wealth, which is reassuring because we would not expect pre-birth wealth to be affected by EITC exposure in future years.

A $1,000 increase in EITC exposure in early childhood increases total wealth by $6,037 (4.2 percent). Pre-birth wealth controlled, we continue to find a statistically significant relationship between the EITC and checking and savings in middle childhood. The point-estimate declines slightly to $734 (4.0 percent) for a $1,000 increase in EITC exposure. The relationship between EITC exposure and stocks and EITC exposure and vehicles remains insignificant. For the annuity-IRA model, a $1,000 increase in EITC exposure is related to a $1,762 increase in annuity-IRA wealth, a 5.8 percent increase. Pre-birth home equity controlled, the point-estimate for the home equity measure is reduced to $2,730 and is no longer statistically significant.

After controlling for pre-birth position in the wealth distribution, we find that a $1,000 increase in EITC exposure increases one's percentile rank in the distribution by about 0.35

---

11. Of the 3,928 cases in our analytic sample, 22 (0.56 percent) are Hispanic and 39 (0.99 percent) are "other race." For the models focusing on racial differences for EITC exposure, we keep only white (n = 2,125) and African American (n = 1,742) respondents.

Table 2. Effect of EITC Exposure in Early Childhood on Family Wealth in Middle Childhood

	Model 1	Model 2
Total wealth	7,251.21**	6,036.93*
	(2,589.26)	(2,430.34)
Pre-birth wealth		0.298
		(0.23)
	[5.0%]	[4.2%]
Checking or savings	1,054.84**	733.92*
	(312.61)	(349.94)
Pre-birth checking or savings		0.514**
		(0.183)
	[5.8%]	[4.0%]
Stocks	113.25	74.98
	(767.22)	(782.44)
Pre-birth stocks		0.027
		(0.031)
	[0.6%]	[0.4%]
Vehicles	161.61	120.74
	(149.94)	(158.57)
Pre-birth vehicles		0.227**
		(0.045)
	[1.0%]	[0.8%]
Annuity or IRA	1,543.94*	1,762.33**
	(739.01)	(629.245)
Pre-birth annuity		0.564**
		(0.164)
	[5.1%]	[5.8%]
Home equity	4,539.18*	2,730.28
	(1,947.15)	(1,741.98)
Pre-birth home equity		0.743**
		(0.082)
	[5.9%]	[3.6%]
Wealth percentile	0.478**	0.352**
	(0.148)	(0.128)
Pre-birth wealth percentile		0.302**
		(0.024)
Control for pre-birth wealth measure		X
Number of observations	3,928	3,928

Source: Authors' calculations using the Panel Study of Income Dynamics.
Note: Amounts in $1,000s; early childhood = 0 to 5; in middle childhood = 6 to 11; children born between 2000 and 2011. Standard errors in parentheses. Percentages (in brackets) are marginal effects based on the mean level for that wealth category. Each model includes controls for the education level and age of the head, the race and sex of the child, the number of children in the household from the child's birth to age five, the proportion of the time between the child's birth and age five the parents were married, state measures for unemployment, the minimum wage, and the maximum TANF benefit for a family of three, state and year fixed effects, and state-specific linear time trends.
*$p < .05$; **$p < .01$

Table 3. Effect of EITC Exposure in Early Childhood on Family Debt in Middle Childhood

Credit card debt	140.80*
	(58.24)
	[3.6%]
Student loan debt	111.55
	(223.63)
	[1.1%]
Medical loan debt	55.07
	(141.62)
	[3.4%]
Legal debt	1.62
	(4.64)
	[2.0%]
Family debt	−14.04
	(24.61)
	[−4.9%]
Number of observations	3,891

Source: Authors' calculations using the Panel Study of Income Dynamics.
Note: Amounts in $1,000s; early childhood = 0 to 5; in middle childhood = 6 to 11; children born between 2000 and 2011; debt measures available 2011 to 2017. Standard errors in parentheses. Marginal effects based on the mean level for that wealth category in brackets. Each model includes controls for the education level and age of the head, the race and sex of the child, the number of children in the household from the child's birth to age five, the proportion of the time between the child's birth and age five the parents were married, state measures for unemployment, the minimum wage, and the maximum TANF benefit for a family of three, state and year fixed effects, and state-specific linear time trends.
*p < .05; **p < .01

points. Again, a standard deviation change in EITC exposure suggests a marginal effect of around 2.2 percentile points in the wealth distribution. Given this set of results, it appears that after controlling for wealth prior to the child's birth, EITC exposure in early childhood has a large effect on family wealth in middle childhood.

In table 3, we provide results using a set of debt measures available in the PSID beginning in 2011. Because our time series is much shorter, we do not have the data to create a pre-birth wealth measure so report the models without this control. Research by Lauren Jones and Katherine Michelmore (2018) shows that the EITC is positively related to credit card debt.

Our results suggest a similar result. A $1,000 increase in EITC benefits is associated with a $141 increase (3.6 percent) in credit card debt. None of the other debt categories was statistically significant.

In table 4, we report results for the same models of wealth with pre-birth wealth controls.[12] Our findings indicate no statistically significant relationships between EITC exposure and wealth for black families. For white families, we find a statistically significant, positive relationship between EITC exposure and checking-savings and annuity wealth. In analyses available on request, we also conducted pooled models that included inter-

12. We also conducted parallel analyses for the debt measures but found no significantly different effects of the EITC on debt for white versus black families.

Table 4. Effect of EITC Exposure in Early Childhood on Family Wealth in Middle Childhood, by Race

	White	Black
Total wealth	4,504.254	–204.847
	(2,938.299)	(927.44)
	[2.7%]	[–0.9%]
Checking or savings	1,037.228*	–25.81
	(460.789)	(185.769)
	[5.0%]	[–0.7%]
Stocks	–383.263	70.482
	(1,178.622)	(58.685)
	[–1.7%]	[17.9%]
Vehicles	91.726	342.281
	(169.27)	(193.734)
	[0.5%]	[3.6%]
Annuity or IRA	2,111.311*	–590.681
	(872.031)	(623.455)
	[5.9%]	[–17.4%]
Home equity	846.407	241.436
	(1,234.782)	(357.317)
	[1.0%]	[1.5%]
Wealth percentile	0.313	0.201
	(0.16)	(0.294)
Number of observations	2,125	1,742

Source: Authors' calculations using the Panel Study of Income Dynamics.
Note: Amounts in $1,000s; early childhood = 0 to 5; in middle childhood = 6 to 11; children born between 2000 and 2011, white and black subsamples only. Standard errors in parentheses below each coefficient estimate. Each model includes controls for the education level and age of the head, the race and sex of the child, the number of children in the household from the child's birth to age five, the proportion of the time between the child's birth and age five the parents were married, state measures for unemployment, the minimum wage, and the maximum TANF benefit for a family of three, state and year fixed effects, state-specific linear time trends, the wealth measure prior to the birth of the child, and an interaction of EITC exposure with an indicator for whether the child is black. Marginal effects for white families calculated based on the main effect of the EITC and the mean value of wealth among white families; marginal effects for black families calculated based on the sum of the main effect and the interaction term and the mean value of wealth among black families. P-value on joint significance test reported in parentheses below the marginal effect for black families.
*p < .05; **p < .01

action terms for EITC exposure and race, rather than estimating separate models for black and white families. None of the interaction terms was statistically significant, implying no statistically significant differences in the effect of the EITC on the wealth of black and white families.

In a third set of models (also available on request), we ran models of logged wealth—replacing the negative and zero values of wealth with a logged wealth value of zero—and found some positive indications of EITC on wealth for both black and white families. None of the es-

timates, however, was statistically significant. Together, the results for white families suggest that the EITC has a positive effect on checking and savings, as well as retirement accounts, but inconclusive evidence on how the EITC affects the wealth of black families.

Effects by Educational Attainment

To investigate the heterogeneous effects of EITC exposure on wealth, and to investigate whether the EITC affects interfamily wealth inequality, we divide the sample into three categories based on the educational attainment of the head of the household.[13] Specifically, in table 5, we report separate models for households in which the head has a high school diploma or less (column 1); up to fifteen years of education or less, which would include those in the first subsample (column 2); and a bachelor's degree or higher (column 3). For simplicity, in table 5, we present results from models that include measures of pre-birth wealth outcomes; see table A2 for results with and without these controls. Because the EITC targets low- to moderate-income families, we expect to see a much greater influence on families with lower levels of education. We do not expect to observe effects for those with a college education, and report results for this subsample for comparison purposes. We split the sample by educational attainment, rather than by income, to avoid concerns of endogeneity of family income with respect to the EITC. Household income is likely affected by the EITC itself, making inference on how the EITC affects wealth across the income distribution difficult.

Results of this exercise are consistent with those reported earlier, although many estimates are imprecisely measured, likely because of the smaller sample sizes. We observe evidence of larger effects of the EITC on wealth among families with a less-educated head of household, and no statistically significant ef-

fect of the EITC on families with a highly educated head of household. A \$1,000 increase in EITC exposure when the child is up to five years old is associated with around a \$2,900 (6.1 percent) increase in total household wealth among families where the head of household has a high school education or less and a \$3,270 (5.2 percent) increase among household heads with less than a college education, and no significant effect among households with a college degree or more.

As in the sample overall, much of the increase in total wealth stems from increases in checking-savings, retirement, and home equity, although the estimates for checking-savings and home equity are not statistically significant after controlling for pre-birth values of these measures. Checking and savings increases were 7.4 percent for families with a high school education or less, 5 percent for those with less than a bachelor's degree, and around 2.9 percent for college graduates (none is statistically significant at conventional levels). For retirement wealth, we find large and statistically significant increases for those with less than a college education—around 10 percent. Interestingly, we find no effects for those with a high school education or less, suggesting that the EITC primarily helps those with some college increase their retirement wealth. This could be driven by better employment opportunities (with access to more fringe benefits like retirement accounts) of those with some college, relative to those with only a high school degree or less. Results for college graduates are also insignificant and much smaller in magnitude. Home equity increases by 3.3 percent for those with a high school education or less and 1.4 percent for those with less than a college education, but neither of the estimates are significant.

Consistent with the increases in overall family wealth, we also observe increases in position in the overall wealth distribution among less-

---

13. Because labor income is likely endogenous, we use the head's education to divide the socioeconomic (SES) distribution and report results. In some preliminary analyses, we also used the families' labor income to divide the distribution. The results are largely similar to those we report for education. We see larger proportionate effects at the bottom of the distribution, and the EITC seems to move low-SES families up in the wealth distribution. We also see large point estimates in levels (but much smaller proportionately) for the total wealth outcome for high SES families.

Table 5. Effect of EITC Exposure in Early Childhood on Family Wealth in Middle Childhood by Education of Head of Household

	High School or Less	Less Than College	College or More
Total wealth	2,905.01	3,270.76*	9,080.65
	(1,660.15)	(1,281.16)	(5,194.39)
	[6.1%]	[5.2%]	[3.1%]
Checking or savings	659.56	550.5	1,039.47
	(579.94)	(327.02)	(795.6)
	[7.4%]	[5.0%]	[2.9%]
Stocks	54.8	245.71	–652.57
	(109.18)	(337.07)	(2,540.07)
	[0.9%]	[3.1%]	[–1.0%]
Vehicles	31.27	88.69	109.54
	(283.48)	(152.42)	(247.61)
	[0.2%]	[0.6%]	[0.5%]
Annuity or IRA	–64.67	1,026.84*	2,891.18
	(349.55)	(451.12)	(1,716.14)
	[1.0%]	[9.9%]	[3.9%]
Home equity	1,262.7	665.96	5,053.7
	(829.06)	(569.77)	(3,879.4)
	[3.3%]	[1.4%]	[3.0%]
Wealth percentile	0.614	0.461*	–0.057
	(0.319)	(0.176)	(0.247)
Number of observations	1,580	2,872	1,056

Source: Authors' calculations using the Panel Study of Income Dynamics.
Note: Amounts in $1,000s; early childhood = 0 to 5; in middle childhood = 6 to 11; children born between 2000 and 2011. Standard errors in parentheses. Marginal effects based on the mean level for that wealth category presented in brackets. Each model includes controls for the education level and age of the head, the race and sex of the child, the number of children in the household from the child's birth to age five, the proportion of the time between the child's birth and age five the parents were married, state measures for unemployment, the minimum wage, and the maximum TANF benefit for a family of three, state and year fixed effects, state-specific linear time trends, and a pre-birth control for the wealth outcome of interest.
*p < .05; **p < .01

educated households. A $1,000 increase in EITC exposure in early childhood leads to a 0.61 percentile increase in the wealth distribution among household heads with a high school diploma or less, and a 0.46 percentile increase among households with less than a college degree. We find no significant effect of EITC exposure in early childhood on percentile in the wealth distribution among children with a college-educated parent.[14]

CONCLUSION

Over the last several decades, the EITC has become one of the largest components of the social safety net in the United States. Despite an extensive literature on the effects of the EITC on a variety of outcomes, we know little about its influence on wealth accumulation and how the EITC may affect wealth inequality.

Using the PSID and a cohort of individuals born between 2000 and 2011, we find that the

14. We also conducted analyses for the debt measures separately by educational attainment and found little effects of the EITC on debt. Results are available on request.

EITC increases family wealth, primarily through increases in checking and savings accounts, retirement savings, and home equity. Our results suggest that a $1,000 increase in EITC exposure in early childhood (from birth to year of one's fifth birthday) increases family wealth in middle childhood (between ages six and eleven) by around 4 percent.

That the EITC increases the amount of savings held in checking and savings accounts as well as retirement accounts suggests that the EITC increases families' ability to save, both for current and future expenditures. Although substantial evidence suggests that the EITC increases the labor-force participation of single mothers (Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Hoynes and Patel 2018; Bastian 2019), little speaks to the types of employment held by recipients. That we find evidence that the EITC increases retirement savings implies either that families gain access to jobs that offer such fringe benefits, or the EITC is allowing them to save more in retirement accounts that they already held. Finally, our results indicating that EITC exposure increases home equity suggests that the EITC may allow families to purchase homes or increase their home equity by allowing them to pay down their mortgages. This latter finding is consistent with previous research that also finds improvements in housing stability (reduced cost burden, increases in independent living) associated with the EITC (Pilkauskas and Michelmore 2019).

Along with these increases in assets, we also find an increase in credit card debt (3.6 percent) associated with EITC exposure in early childhood. Although determining whether this is necessarily a good or bad outcome is difficult, one interpretation is that the EITC increases access to credit cards. Low- and moderate-income households have less access to credit cards than higher-income households (Jones and Michelmore 2018). By increasing labor supply (Eissa and Liebman 1996; Meyer and Rosenbaum 2001; Bastian 2019) and family income (Hoynes and Patel 2018), the EITC may also increase access to credit. Depending on the counterfactual, increasing access to credit cards could be welfare-improving if households are otherwise forced to rely on high-interest credit such as payday loans.

How this increase in wealth translates to overall wealth inequality is more difficult to answer. All of our estimates are much larger proportionately for less-educated families, which is consistent with the EITC targeting low- and moderate-income families, and provides suggestive evidence that the EITC reduces wealth inequality. More explicitly, we also evaluate how EITC exposure in early childhood affects one's position in the wealth distribution. We find that a standard deviation change in EITC exposure (approximately $6,230) increases position in the wealth distribution by approximately 2.2 percentiles, effects being particularly large among the least-educated households (4 percentiles). Assuming a fixed wealth distribution, this suggests that the EITC could reduce wealth inequality, given that those at the bottom or near-bottom move up in the wealth distribution. We find no effect of the EITC on percentile in the wealth distribution among college-educated households. On the other hand, some of our estimates, such as the increase in retirement savings associated with EITC exposure, appear to be concentrated among those with some college experience. We find little evidence that the EITC increases the retirement savings of those with a high school degree or less. This finding suggests that the EITC may increase economic mobility most for those with moderate skill levels. This is also consistent with earlier research that shows that households with family income between 50 percent and 150 percent of the federal poverty line benefit the most from the EITC (Hoynes and Patel 2018), because households in this income range typically qualify for the largest EITC benefits.

We observe large differences in wealth accumulation between black and white families, but our results do not provide conclusive evidence on how the EITC differentially affects the wealth accumulation of black and white families. We find large point estimates and statistically significant effects of the EITC on the wealth accumulation of white families, but no definitive evidence that the EITC increases the wealth of black families. However, our standard errors are too large to rule out large increases or decreases in the wealth of black families as a result of EITC exposure. These findings provide suggestive evidence that the EITC could exacerbate wealth inequality between black and

white families by primarily improving the wealth status of low- and moderate-income white families. More research is necessary, preferably including larger samples of nonwhite families, to further understand how the EITC affects racial wealth gaps.

The EITC has an asset limit for recipients: households with more than $3,000 in asset income are ineligible for the credit. Although only a small fraction of the would-be EITC-eligible population—recent estimates suggest approximately 12 percent (Weber 2016)—to the extent that some households are deterred from savings in income-bearing accounts, these findings may underestimate the effect of the EITC on household wealth. Increasing or eliminating the asset income threshold may result in a larger increase in household wealth associated with the EITC (Weber 2016).

Fundamentally, this research suggests that EITC exposure sets families with children on a different, increased wealth trajectory. One might see considerable differences in family wealth over a longer time and may lead to an entirely different standard of living during middle age and retirement. Further, given the importance of assets and available credit, our results suggest that children may benefit from exposure to the EITC in early childhood in many ways. For instance, research indicates that exogenous shocks to household wealth increase access to higher education (Lovenheim 2011), which is consistent with recent literature showing that the EITC improves educational attainment (Bastian and Michelmore 2018; Manoli and Turner 2018) among those exposed to EITC expansions in childhood.

Table A1. Comparison of Wealth Outcomes

	Pfeffer et al. (2016) in 2016 Dollars	PSID Full Sample
Checking or savings	33,749	18,298
		(53,693)
Stocks	65,008	18,420
		(101,320)
Vehicles	17,043	16,063
		(18,756)
Annuity or IRA	53,745	30,251
		(98,170)
Home equity	135,914	76,793
		(179,373)

Source: Authors' tabulation based on the Panel Study of Income Dynamics.

Table A2. Effect of EITC Exposure in Early Childhood on Family Wealth in Middle Childhood, by Educational Attainment of Head of Household

	High School or Less		Some College or Less		College or More	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Total wealth	3,039.9	2,905.01	3,392.44*	3,270.76*	10,484.62	9,080.65
	(1,770.23)	(1,660.15)	(1,354.39)	(1,281.16)	(7,824.52)	(5,194.39)
Pre-birth wealth		0.019		0.041		0.638*
		(0.031)		(0.051)		(0.243)
Checking or savings	839.17	659.56	636.05	550.5	1,456.06*	1,039.47
	(633.43)	(579.94)	(346.16)	(327.02)	(659.32)	(795.6)
Pre-birth checking or savings		0.136		0.185*		0.646*
		(0.094)		(0.089)		(0.251)
Stocks	57.4	54.8	247.05	245.71	−687.88	−652.57
	(110.24)	(109.18)	(337.11)	(337.07)	(2,640.56)	(2,540.07)
Pre-birth stocks		0.001		0.001		0.083
		(0.001)		(0.002)		(0.086)
Vehicles	−37.88	31.27	121.81	88.69	168.23	109.54
	(340.88)	(283.48)	(171.09)	(152.42)	(246.6)	(247.61)
Pre-birth vehicles		0.238**		0.254**		0.187**
		(0.056)		(0.06)		(0.054)
Annuity or IRA	−36.81	−64.67	1,039.22*	1,026.84*	2,047.08	2,891.18
	(346.83)	(349.55)	(450.74)	(451.12)	(2,368.32)	(1,716.14)
Pre-birth annuity		0.086		0.150*		0.588**
		(0.064)		(0.067)		(0.181)
Home equity	2,180.14	1,262.7	1,470.13	665.96	7,669.35	5,053.7
	(1,345.11)	(829.06)	(844.97)	(569.77)	(4641.21)	(3,879.4)
Pre-birth home equity		0.572**		0.556**		0.765**
		(0.113)		(0.072)		(0.101)
Wealth percentile	0.696	0.614	0.565**	0.461*	0.169	−0.057
	(0.359)	(0.319)	(0.199)	(0.176)	(0.262)	(0.247)
Pre-birth wealth percentile		0.251**		0.269**		0.327**
		(0.046)		(0.034)		(0.051)
Number of observations	1,580	1,580	2,872	2,872	1,056	1,056

Source: Authors' calculations using the Panel Study of Income Dynamics.
Note: Amounts in $1,000s; early childhood = 0 to 5; in middle childhood = 6 to 11; children born between 2000 and 2011. Standard errors in parentheses. Each model includes controls for the education level and age of the head, the race and sex of the child, the number of children in the household from the child's birth to age five, the proportion of the time between the child's birth and age five the parents were married, state measures for unemployment, the minimum wage, and the maximum TANF benefit for a family of three, state and year fixed effects, and state-specific linear time trends.
*p < .05; **p < .01

REFERENCES

Addo, Fenaba R. 2014. "Debt, Cohabitation, and Marriage in Young Adulthood." *Demography* 51(5): 1677–701.

Baker, Ross, and Constantine Yannelis 2017. "Income Changes and Consumption: Evidence from the 2013 Federal Government Shutdown." *Review of Economic Dynamics* 23: 99–124.

Bastian, Jacob. 2019. "The Rise of Working Mothers and the 1975 Earned Income Tax Credit." *American Economic Journal: Economic Policy* 12(3): 44–75.

Bastian, Jacob, and Katherine Michelmore. 2018. "The Long-Term Impact of the Earned Income Tax Credit on Children's Education and Employment Outcomes." *Journal of Labor Economics* 36(4): 1127–63.

Berger, Lawrence M., Sarah A. Font, Kristen Shook Slack, and Jane Waldfogel. 2017. "Income and Child Maltreatment in Unmarried Families: Evidence from the Earned Income Tax Credit." *Review of Economics of the Household* 15(4): 1345–72.

Bitler, Marianne, Hilary Hoynes, and Elira Kuka. 2017. "Do In-Work Tax Credits Serve as a Safety Net?" *Journal of Human Resources* 52(2): 319–50.

Dahl, Gordon B., and Lance Lochner. 2012. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit." *American Economic Review* 102(5): 1927–56.

———. 2017. "The Impact of Family Income on Child Achievement: Evidence from the Earned Income Tax Credit: Reply. *American Economic Review* 107(2): 629–31.

Dahl, Molly, Thomas DeLeire, and Jonathan Schwabish. 2011. "Estimates of Year-to-Year Volatility in Earnings and in Household Incomes from Administrative, Survey, and Matched Data." *Journal of Human Resources* 46(4): 750–74.

Dynarski, Susan, and Jonathan Gruber. 1997. "Can Families Smooth Variable Earnings?" *Brookings Papers on Economic Activity* 28(1): 229–303.

Eissa, Nada, and Jeffrey B. Liebman. 1996. "Labor Supply Response to the Earned Income Tax Credit." *Quarterly Journal of Economics* 111(2): 605–37.

Gibson-Davis, Christina M., and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55(3): 1009–32.

Goodman-Bacon, Andrew, and Leslie McGranahan. 2008. "How Do EITC Recipients Spend Their Refunds?" *Economic Perspectives* 32(2): 17–32.

Halpern-Meekin, Sarah, Kathryn Edin, Laura Tach, and Jennifer Sykes. 2015. *It's Not Like I'm Poor: How Working Families Make Ends Meet in a Post-Welfare World*. Berkeley: University of California Press.

Hoynes, Hilary W., Doug Miller, and David Simon. 2015. "Income, the Earned Income Tax Credit, and Infant Health." *American Economic Journal: Economic Policy* 7(1): 172–211.

Hoynes, Hilary W., and Ankur J. Patel. 2018. "Effective Policy for Reducing Poverty and Inequality? The Earned Income Tax Credit and the Distribution of Income." *Journal of Human Resources* 53(4): 859–90.

Internal Revenue Service (IRS). 2020. "About EITC." Revised June 29, 2020. Accessed December 8, 2020. https://www.eitc.irs.gov/eitc-central/about-eitc/about-eitc.

Jones, Lauren E., and Katherine Michelmore. 2018. "The Impact of the Earned Income Tax Credit on Household Finances." *Journal of Policy Analysis and Management* 37(3): 521–45.

———. 2019. "Timing Is Money: Does Lump-Sum Payment of Tax Credits Induce High-Cost Borrowing?" *Economic Inquiry* 57(3): 1659–74.

Leiserson, Greg, Will McGrew, and Raksha Kopparam. 2019. "The Distribution of Wealth in the United States and the Implications for a Net Worth Tax." Washington, D.C.: Washington Center for Equitable Growth. Accessed December 9, 2020. https://equitablegrowth.org/the-distribution-of-wealth-in-the-united-states-and-implications-for-a-net-worth-tax.

Lovenheim, Michael F. 2011. "The Effect of Liquid Housing Wealth on College Enrollment." *Journal of Labor Economics* 29(4): 741–71.

Manoli, Day, and Nicholas Turner. 2018. "Cash-on-Hand and College Enrollment: Evidence from Population Tax Data and the Earned Income Tax Credit. *American Economic Journal: Economic Policy* 10(2): 242–71.

Meyer, Bruce D., and Dan T. Rosenbaum. 2001. "Welfare, the Earned Income Tax Credit, and the Labor Supply of Single Mothers." *Quarterly Journal of Economics* 116(3): 1063–114.

Michelmore, Katherine, and Leonard M. Lopoo. 2019. "The Effect of EITC Exposure in Childhood on

Marriage and Early Childbearing." *Center for Policy Research* working paper no. 215. Syracuse, N.Y.: Syracuse University.

Neumark, David, and Peter Shirley. 2020. "The Long-Run Effects of the Earning Income Tax Credit on Women's Labor Market Outcomes." *Labour Economics* 66. Published online June 26. DOI: 10.1016/j.labeco.2020.101878.

Pfeffer, Fabian T., Robert F. Shoeni, Arthur Kennickell, and Patricia Andreski. 2016. "Measuring Wealth and Wealth Inequality." *Journal of Economic and Social Measurement* 41(2): 103–20.

Pilkauskas, Natasha, and Katherine Michelmore. 2019. "Does the Earned Income Tax Credit Reduce Housing Instability?" *Demography* 56(4): 1303–26.

Romich, Jennifer, and Thomas Weisner. 2000. "How Families View and Use the EITC: Advance Payment Versus Lump Sum Delivery." *National Tax Journal* 53(4): 1245–65.

Schneider, Daniel. 2011. "Wealth and the Marital Divide." *American Journal of Sociology* 117(2): 627–67.

Shaefer, H. Luke, Xiaoqing Song, and Trina R. Shanks. 2013. "Do Single Mothers in the United States use the Earned Income Tax Credit to Reduce Unsecured Debt?" *Review of Economics of the Household* 11(4): 659–80.

Smeeding, Timothy M., Katherin Ross Phillips, and Michael O'Connor. 2000. "The EITC: Expectation, Knowledge, Use, and Economic and Social Mobility." *National Tax Journal* 53(4): 1187–209.

Sykes, Jennifer, Katrin Križ, Kathryn Edin, and Sarah Halpern-Meekin. 2015. "Dignity and Dreams: What the Earned Income Tax Credit (EITC) Means to Low-Income Families." *American Sociological Review* 80(2): 243–67.

Weber, Caroline. 2016. "Does the Earned Income Tax Credit Reduce Saving by Low-Income Households?" *National Tax Journal* 69(1): 41–76.

Wolff, Edward N. 2016. "Household Wealth Trends in the United States, 1962 to 2013: What Happened over the Great Recession?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 24–43. DOI: 10.7758/RSF.2016.2.6.02.

———. 2017. "Household Wealth Trends in the United States, 1962 to 2016: Has Middle Class Wealth Recovered?" *NBER* working paper no. 24085. Cambridge, Mass.: National Bureau of Economic Research.

The Effects of State-Level Medicaid Coverage on Family Wealth

MARGOT JACKSON, CHINYERE AGBAI, AND EMILY RAUSCHER

Jointly financed by the federal government and the states, Medicaid represents the second largest form of public-sector investment in children. Research documents direct positive effects of Medicaid on children's well-being, but little is known about the effects of Medicaid expansions on the wealth of families with children. Using state variation in Medicaid access during the prenatal and infant period, linked to longitudinal data from the children of National Longitudinal Survey of Youth 79, we ask whether state-level Medicaid generosity is associated with family wealth among families with children and whether these effects vary by parental education and race-ethnicity. We find that greater state-level Medicaid access is associated with a larger total amount held in savings and retirement accounts, as well as in mortgages. These effects are largely driven by non-Hispanic white families, and those with more highly educated mothers.

Keywords: Medicaid, inequality, wealth, children

Since its creation in 1965, the federal Medicaid program has been a major provider of health insurance for low- and moderate-income families in the United States. Jointly financed by the federal government and the states, Medicaid currently represents the second largest form of public-sector investment in children, after K–12 education (Isaacs and Edelstein 2017). The form and size of Medicaid investments vary widely across states, given large differences in states' rules about eligibility levels, service coverage, payment mechanisms, and spending per enrollee. State-level indicators of Medicaid access thus provide a useful indicator of families' access to key resources necessary for healthy child development. Increased access to Medicaid may affect children both directly, via access to crucial health care, and indirectly by reducing family medical expenses, allowing them to increase their economic resources.

Research documents direct positive effects of state-level Medicaid coverage on short and longer-term outcomes for child and adult health (Currie and Gruber 1996; Goodman-Bacon 2018; Miller and Wherry 2019). These effects are quite meaningful not only for children's health, but also for their broader educational progression and human capital

Margot Jackson is associate professor of sociology at Brown University, United States. **Chinyere Agbai** is a PhD student in sociology at Brown University, United States. **Emily Rauscher** is associate professor of sociology at Brown University, United States.

development. For example, Medicaid coverage can help families control child asthma, which can increase school attendance (Currie 2005). However, much less is known about the effects of state-level Medicaid access on the wealth of families with children. Increased access to Medicaid may affect children both directly, via access to crucial health care, and indirectly by reducing family medical expenses, allowing them to increase their economic resources. Greater wealth at the family level is important not only because it provides access to better nutrition and medical care, but also because wealth is positively linked to children's human capital development and educational attainment (Elliott, Destin, and Friedline 2011; Pfeffer 2018).

Despite its importance, wealth is the most unequally distributed economic resource, with the top 1 percent of wealth holders owning 36 percent of the wealth in the United States (Killewald, Pfeffer, and Schachner 2017; Saez and Zucman 2016; Stone et al. 2020). Moreover, centuries of policies and practices, including slavery, Jim Crow, racial terrorism, and ongoing predatory lending practices, have hampered the ability of nonwhites, and especially black families, to amass wealth (Du Bois 1935; Faber 2018; Freund 2007; Taylor 2019). As a result, wealth gaps are particularly large among families with children and across racial and ethnic groups (Gibson-Davis and Percheski 2018; Pfeffer 2018; Saez and Zucman 2016). By reducing out-of-pocket medical costs, greater state-level Medicaid access may facilitate the ability of families, the most socioeconomically disadvantaged families in particular, to increase their savings and assets more generally. Health and health care are fundamental for child development but can require substantial private spending and even debt (Hu et al. 2018). Any savings associated with Medicaid may in turn better allow families to directly invest in their children's development.

This article examines the effects of state-level Medicaid access on family wealth. We use state variation in Medicaid access during the prenatal and infant period, driven by federal and state Medicaid expansions that increased access at different times across states in the 1980s. Linking these state-level measures to longitudinal data from the children of National Longitudinal Survey of Youth 79 (NLSY79-C), we ask two questions: First, is greater state-level Medicaid generosity positively associated with wealth among families with children? Second, do these effects vary by parental education and race-ethnicity? We find that, on average, greater state-level Medicaid access is associated with a larger total amount held in savings and retirement accounts, as well as in mortgages. These effects are largely driven by non-Hispanic white families, and those with more highly educated mothers.

BACKGROUND

Created in 1965 through the Social Security Amendments of 1965, Medicaid is a major provider of health insurance for low- and moderate-income families in the United States. Jointly financed by the federal government and the states, Medicaid represents the second largest form of government investment in children, after K–12 education (Isaacs and Edelstein 2017). Unlike some more "universalist" public investments, such as K–12 public education, which serves children across income groups, Medicaid is a targeted investment toward low- and moderate-income families. The Medicaid program has also undergone several expansions at both the federal and state level over time, resulting in wide variation across place and time in eligibility levels, service coverage, payment mechanisms, and spending per enrollee.

When Medicaid was created in 1965, coverage for children and pregnant women was restricted to families receiving welfare benefits via the Aid to Families with Dependent Children (AFDC) program, consisting primarily of single-parent families with incomes below the poverty line. Many of the federal and state Medicaid expansions that have led to variation in eligibility and the timing of implementation across states have focused on pregnant women and children in the first year of life. Beginning in the 1980s, especially between 1987 and 1990 in response to a large national Medicaid expansion through the Omnibus Budget Reconciliation Act of 1986 (OBRA86), states began to expand coverage to include prenatal and infant care for two-parent families in AFDC, as well as families with incomes above the poverty line.

In addition to federal expansions that increased access or benefits at different times across states, some states expanded Medicaid beyond federal minimums for benefit and coverage. This series of expansions between 1980 and the early 1990s meant that many states began to cover pregnant women and their infants if their family income was up to 185 percent of the poverty threshold, up from the previous maximum coverage at 79 percent of the poverty line before the expansion (Currie and Gruber 1996; Miller and Wherry 2019). Between 1984 and 1992, eligibility for Medicaid more than doubled among U.S. children, and almost one-third were eligible for enrollment by 1992 (Currie and Gruber 1996).

Medicaid and Family Wealth

Medicaid access could be associated with family wealth in several ways. First, increased coverage may be positively associated with households' wealth by freeing up funds that would otherwise be used for medical expenses, better enabling families to save money or purchase assets. This possibility may have become more likely after the OBRA86 expansion, when the vast majority of states ended their previous use of asset testing for determining Medicaid eligibility. Previously, Medicaid eligibility for pregnant women and infants had been tied to their AFDC eligibility, which involved asset testing to qualify. The asset test allowed "a home of any value, an automobile worth up to $1,500, and any other real or personal property essential for day-to-day living worth up to $1,000" (Government Accountability Office 1987, 18). Income and asset limits for Supplemental Security Income (SSI), Medicaid through SSI eligibility, and those for the medically needy program were higher (Government Accountability Office 1987). In addition to expanding access based on income limits, OBRA86 also provided states with options to simplify the Medicaid eligibility process for pregnant women and infants. For example, states shortened application forms, out-stationed eligibility workers at provider sites, and expedited maternity-related applications (National Governors' Association 1990, 3). States also dropped the asset test required for Medicaid eligibility among pregnant women and infants. In 1990, "44 states no longer review

clients' assets when determining eligibility for pregnant women and children" (National Governors' Association 1990, 3). The seven states that retained the asset test were California, Colorado, Illinois, Iowa, Missouri, North Dakota, and Texas. Additional states dropped the test over time: Colorado and Missouri by July 1990 and Illinois and Texas by July 1991. Beginning in 1992, some states (Nevada, Utah, and Arkansas) began reinstating asset tests for Medicaid eligibility among pregnant women or children (National Governors' Association 1992).

The elimination of asset testing as a condition for Medicaid enrollment among pregnant women and young children increased the possibility for participating families to build wealth. Greater access to Medicaid for low- and middle-income families may reduce the amount these families spend on out-of-pocket medical expenses, private insurance premiums, expensive copayments, or other directly purchased services. Although many pregnant women and young children who became eligible for Medicaid with the expansions were uninsured, more than a third were covered under private insurance plans (Cutler and Gruber 1996; Dubay and Kenney 1997), which typically have higher out-of-pocket costs for premiums and copayments. The ability to substitute public insurance for private insurance may therefore free up economic resources for some families, enabling them to save money or to purchase assets such as a home.

Among families who were uninsured, public insurance may also replace some degree of private spending. Research concerning the effects of Medicaid on consumption in the broader adult population demonstrates that increases in Medicaid access are associated with increases in spending on nondurable goods (Gruber and Yelowitz 1999), and that switching from private to public health insurance reduces spending on out-of-pocket medical care and health insurance costs (Shaefer, Grogan, and Pollak 2011). Among families with children, a study on the effects of State Children's Health Insurance Program (SCHIP, later CHIP) expansions in the late 1990s, which were targeted toward higher income families than the Medicaid expansions, shows that SCHIP coverage increases savings behavior among households

with children (Leininger, Levy, and Schanzenbach 2010). Evidence on the effects of Medicaid expansions on the wealth of families with children is lacking, however.

Increases in Medicaid access may also reduce the debt held by families with children, both by reducing medical debt and by improving their ability to pay down existing debts from credit cards and other sources. Although surprisingly little research examines the effects of Medicaid on debt, evidence among adults suggests that Medicaid coverage reduces the likelihood of personal bankruptcy, as well as the prevalence of "medical divorces" intended to protect the assets of a healthy spouse when the other spouse has substantial medical bills (Gross and Notowidigdo 2011; Slusky and Ginther 2017). Results from an experimental Medicaid expansion program in Oregon demonstrate that Medicaid access significantly reduced the frequency of missed bill payments because of medical expenses (Finkelstein et al. 2012). In addition, research on the recent Medicaid expansion under the Affordable Care Act demonstrates that increased Medicaid access reduces the number of unpaid bills and the amount of debt sent to collection agencies (Hu et al. 2018; Miller and Wherry 2019). However, these studies focus on the broader Medicaid-eligible population and not on families with children.

Despite reasons to expect a positive effect of Medicaid access on savings and wealth among families with children, it is also possible that the association is negative. Increased Medicaid access may reduce families' need to save in the presence of a new safety net, to the extent that low-resource families are able to save at all. Relatedly, families may prioritize short-term expenses, increasing consumption instead of savings for longer-term expenses. Some evidence suggests that Medicaid expansions are negatively associated with savings and wealth holdings among all households, and that these negative effects are especially strong when asset testing is in effect (see, for example, Gruber and Yelowitz 1999). Although the vast majority of states eliminated asset tests with Medicaid expansion, families may have believed asset testing remained in effect.

In sum, previous evidence on the Medicaid-eligible population offers mixed evidence and focuses on the general population rather than on families with children. It is plausible that higher Medicaid coverage should increase the ability of eligible families to save money or reduce debt via reduced out-of-pocket costs. It is also possible, however, that Medicaid access does not increase wealth because families may prioritize short-term expenses over savings. The little research on Medicaid expansions provides limited evidence of effects for families with children and offers a very short-term perspective on the effects of Medicaid.

Variation by Education and Race-Ethnicity

It is important to consider the possibility that Medicaid affects family wealth differently for groups by education and race-ethnicity because the composition of Medicaid participants is heterogeneous. For example, among Medicaid-covered births between 1999 and 2005, 30 percent of mothers had more than a high school education, 30 percent had a high school degree, and 40 percent had not graduated. About half were non-Hispanic black or Hispanic (Lloyd et al. 2018). In 2000, 38 percent of Medicaid or CHIP-covered children were non-Hispanic white, 32 percent were non-Hispanic black, and 25 percent were Hispanic; 62 percent of parents had more than a high school education (Coyer and Kenney 2013). In addition, wealth varies dramatically by education and race. Those with less education hold much less wealth than more educated families (Hartog and Oosterbeek 1998; Pfeffer, Danziger, and Schoeni 2013; Semyonov and Lewin-Epstein 2013). Racial gaps in wealth—especially black-white gaps—are also striking. As of 2016, white households hold almost ten times the wealth of black families, with whites holding $171,000 to blacks' $17,600, on average (Dettling et al. 2017). Racial wealth gaps are especially driven by differences in homeownership, which is the largest source of wealth for most Americans. Wealth gains associated with homeownership are much larger for white families than for black or Hispanic families, and whites are also more likely to be homeowners than renters (Collins and Margo 2001; Conley 1999; Killewald and Bryan 2016; National Low Income Housing Coalition 2020).

The relative socioeconomic disadvantage of

less educated black and Hispanic families could mean that they are less able to increase savings with Medicaid access. Income is more likely to be unstable among adults with lower socioeconomic status (SES) (Hannagan and Morduch 2015; Kalleberg, Reskin, and Hudson 2000; Pew Charitable Trusts 2017), meaning that any savings associated with Medicaid may be used for short-term needs over longer-term savings. In addition, although sociohistorical forces have contributed significantly to contemporary racial-ethnic gaps in wealth, discrimination in housing and mortgage markets remains, and ongoing exclusion may make it harder for black and Latino families to build wealth even with the same savings as non-Latino white families (see Quillian, Lee, and Honoré 2020). Because of this, the benefits of Medicaid may be largest among more-educated and non-Hispanic white families, who are more likely to be in a position to save. Alternatively, increases in Medicaid may most strongly affect the behavior of less-educated and racial minority families, for whom saving may be a new possibility. Evaluations of other progressive policies that provide cash or in-kind transfers to low-resource families suggests that the benefits of these transfers are often largest among the most disadvantaged participants (Goodman-Bacon 2018; Meyer 2010). These findings are consistent with the idea that Medicaid should affect the wealth of the most disadvantaged families the most, rather than providing additional benefits to highly educated and white participants.

DATA

Data from our study come from two sources. First, we measure family characteristics, including wealth, using data from the children of the National Longitudinal Survey of Youth 79 (NLSY79-C). The NLSY79 is a large, nationally representative sample of the family, social, and economic lives of approximately thirteen thousand men and women who were between fourteen and twenty-two years old at the time of the first interview in 1979. Until 1994, respondents were interviewed annually, and from then forward biennially. The NLSY-C is a survey of all

children born to NLSY79 mothers. Beginning in 1986, mothers were interviewed biennially (and their children assessed) in an effort to measure family socioeconomic context and child development. To date, more than 11,500 children have been followed and assessed. Collectively, the data provide rich, longitudinal information on the economic circumstances and development of a large, nationally representative sample. Very few data sets include both high quality wealth data within the same families over time. NLSY data also include geographic identifiers and a large sample of young children, making it uniquely suited to answer questions about the effects of Medicaid expansions focused on mothers and young children.

We link NLSY-C data to longitudinal, state-level data on Medicaid eligibility thresholds. Between 1987 and 1993, national increases in the income and age requirements for Medicaid eligibility among children and pregnant women were substantial. As Sarah Miller and Laura Wherry (2019) describe in detail, the proportion of women and infant who were eligible for Medicaid during pregnancy increased from 13 percent in 1979 to 44 percent by 1993. These increases were implemented at different times across states, resulting in variation in Medicaid eligibility among otherwise similar women and children across time and place. We follow recent research and use simulated prenatal Medicaid eligibility calculated from changes in state prenatal Medicaid eligibility rules applied to a national sample of three thousand women from each year (Miller and Wherry 2019).[1] This approach makes it more feasible to identify the implications of changes in Medicaid policy alone, distinct from other state-level policies or state-level economic or demographic characteristics. Because of the timing of expansions across the United States, we limit our NLSY-C analytic sample to the period between 1986 and 2000.

Measures

In an effort to capture the numerous dimensions of family wealth, we examine multiple measures of assets and debts, in addition to total net worth. *Net worth* is a derived measure

in the NLSY-C, which consists of adding the value of all household assets and subtracting household debt (Gruber and Yelowitz 1999; Orr 2003). *Home value* and *mortgage* are recorded for homeowners and reflect the total market value of the home and the amount owed on the property, respectively. *Other debt* captures the amount of any other kind of debt owed on the residential property. *Savings* records the amount held in savings. To create the *accounts measure,* we sum the amount held in four kinds of liquid assets: savings, certified deposits, investment retirement accounts (IRAs), and tax-deferred savings plans. *Car value* reflects the total market value of the respondent's vehicle, and *car debt* records how much is owed on the vehicle.

All wealth measures are collected at the family level and converted to 2018 dollars. Like income, wealth is a highly right-skewed measure of economic resources, with many families possessing zero or negative wealth, and the wealthiest families holding a disproportionately large share of assets.[2] We follow previous research and use an inverse hyperbolic sine (IHS) transformation for all wealth measures (Friedline, Masa, and Chowa 2015). The IHS transformation can be expressed as

$$IHS(wealth) = \log(wealth + \sqrt{wealth^2 + 1}).$$

Transforming wealth in this way has many benefits, including adjusting for skewness and retaining 0 and negative values. The IHS transformation is a useful alternative to other wealth transformations, such as the log transformation, that are unable to include values at or below 0 (Friedline, Masa, and Chowa 2015). With the exception of very small values of wealth, the IHS transformed value can be interpreted in the same way as a log transformed dependent variable. That is, the coefficient can be multiplied by one hundred and interpreted in terms of percentage points (Burbidge, Magee, and Robb 1988). In sensitivity analyses, we compare these results with analyses using untransformed wealth and wealth deciles, as well as IHS trans-

formed deciles, and find that the results are substantively the same.

Medicaid Eligibility

To separate possible state Medicaid policy effects from the effects of state-level demographic and economic factors, we follow previous work (Brown, Kowalski, and Lurie 2018; Currie and Gruber 1996; Miller and Wherry 2019) and use simulated prenatal Medicaid eligibility measures. These measures are calculated annually based on state Medicaid eligibility rules in a given year and applied to a national sample of three thousand women from each year (Miller and Wherry 2019).

Given the timing of expansions across states, we limit our NLSY-C analytic sample to the period between 1986 and 2000. Because the simulated eligibility measures estimate state-level prenatal-infant eligibility, we assign children the simulated Medicaid eligibility value for the mother's state of residence during the year the child was born. Because the NLSY-C interview structure captures children and families biennially in even-numbered years, children born in odd-numbered years are assigned the simulated Medicaid eligibility in their mothers' state of residence for the year prior to birth.

The timing of the state-level Medicaid eligibility measures means that we are examining the effects of Medicaid access on family wealth during the prenatal and infant period. Understanding insurance status and possible wealth effects during this period is important because the early life cycle is a highly sensitive period of brain development. Exposure to healthy behaviors, adequate medical care, and improvements in wealth during this period may especially affect mechanisms responsible for healthy physical and cognitive development (Gluckman and Hanson 2006; Knudsen 2004; Wakschlag et al. 2002). In this vein, the relationship between Medicaid access early in life and children's short and longer-time outcomes is both positive and strong (Currie and Gruber 1996; Miller and Wherry 2019).

---

2. Figure A1 provides box plots of family net worth by tercile of state-level Medicaid eligibility. This figure demonstrates significant variation in family net worth in states with low, medium, and high levels of Medicaid generosity.

Other Measures

We include controls from the NLSY-C data, including family income and maternal education, public transfer receipt (at the household or family level), child race-ethnicity, child gender, marital status of parents, and parental employment. At the state level, we use data from the University of Kentucky Poverty Center's State Welfare database, the Current Population Survey, and the Bureau of Labor Statistics to construct measures—we control for the state-year unemployment rate, poverty rate, prevailing minimum wage, share of the population that is black non-Hispanic, share of the population that is Hispanic, and share of the population with a college degree. We also measure the presence of a state Earned Income Tax Credit (EITC) program and the state's percentage of the federal EITC in each year. Finally, we measure states' governance structures with a variable indicating whether the governor is a Democrat.

Approach

Medicaid eligibility varies by state but depends on family income through eligibility criteria at the state level and, less commonly, wealth via asset tests in six states by 1990.[3] We use the simulated Medicaid eligibility measures described above to address endogeneity that could influence both family wealth and Medicaid eligibility and therefore bias traditional estimates. Simulated measures also address other methodological issues. First, Medicaid policy changes could encourage families close to the income and wealth eligibility thresholds to alter their behavior. For example, if the eligibility threshold increases, families with more education and financial knowledge could be near the eligibility cutoff and transfer assets to a friend or extended family member to allow them to meet the eligibility requirements. Simulated eligibility addresses potential bias that could be introduced by this type of sorting within states (Biasi 2019). Second, average eligibility among families in a given state varies with state economic measures. For example, recessions may reduce average income and wealth in a

state, which would increase the proportion of state residents who are eligible for Medicaid. Because they are based on a national sample of women, simulated eligibility measures are divorced from state-specific changes in economic or demographic changes.

In addition to using simulated eligibility measures, we estimate models with state and year fixed effects to control for state differences correlated with spending and family characteristics (such as labor market structure or level of economic need), and year fixed effects to control for time trends shared across states (such as recession effects). Variation across states in the strength of the labor market and the demographic composition of the population could produce a positive relationship between Medicaid access and economic need that does not reflect true variation in states' investment in Medicaid. Including state fixed effects helps control for these fixed differences across states. In addition, increased economic need during periods of economic downtown is correlated with increases in public-sector investment (Edelstein et al. 2016). Increased state-level investment during recessions may also be correlated with lower wealth. Including year fixed effects helps separate the effects of government investment from the effects of economic need.

The inclusion of state and year fixed effects means that model identification is based on within-state variation in Medicaid eligibility across years, as well as across-state differences in Medicaid generosity in a given year. The key assumption of this approach is that other unmeasured changes in state characteristics did not co-occur with Medicaid eligibility policy changes (Miller and Wherry 2019). For example, if expanded Medicaid eligibility forced states to reduce spending on other programs for the same children affected by increased Medicaid eligibility, our estimates would be biased. Time-varying state controls as well as state and year fixed effects help reduce the possibility that this assumption is violated. Building on this logic, we examine the association between state-level Medicaid access and family wealth using the following model:

---

3. We perform the analysis with and without the states that continued asset testing, and results are substantively identical.

$$Y_{ist} = \beta_0 + \beta_1 medicaid_{ist} + \beta_2 X_{ist} + \mu_s + \theta_t + \varepsilon_{ist}, \text{ (1)}$$

where, for each child i in state s in year t, we model family wealth (Y)—net worth and the other measures of assets and debts described earlier—as a function of state-level simulated prenatal-infant Medicaid eligibility (*Medicaid*) in the state-year of the child's birth, and the individual and state-level controls (X) described. We measure wealth in the year following a child's birth rather than in the same year. We focus on β_1 to examine the effects of prenatal Medicaid access on children in all families. This step in the analysis will allow us to examine whether higher Medicaid coverage increases the ability of families to save money via increases in assets and reduced debt, or whether Medicaid access does not increase wealth, perhaps because of the need to prioritize short-term expenses.

In the next step of the analysis, we consider heterogeneity in the effects of Medicaid access on family wealth by parental education and child race-ethnicity. The composition of Medicaid participants is heterogeneous across the educational distribution and by race-ethnicity, and wealth also varies dramatically by education and race. We extend equation (1) to estimate stratified models by both parental education and child race-ethnicity, separately. We examine parental education rather than family income to reduce the possibility of endogeneity between Medicaid and family income, which is more variable than education and could be predicted by Medicaid enrollment. If higher state-level Medicaid access disproportionately affects lower-educated and racial minority families, we would expect to see increases in savings and reductions in debt with increases in Medicaid. Alternatively, if the benefits of Medicaid are largest among the groups more likely to already be in a position to save, we expect to see positive effects of Medicaid increases among higher-educated and non-Hispanic white families.

In the analyses described, we use a reduced form estimate rather than an instrumental variable approach because it is more straightforward and easier to interpret, does not require accurate prenatal measures of income and wealth to determine prenatal Medicaid eligibility, incorporates potential spillover effects and potential manipulation around the eligibility threshold, and allows us to examine heterogeneity in the effects of changes in state Medicaid eligibility policy by education and race-ethnicity.

Results

Table 1 shows descriptive characteristics of the analytic sample. The median family with young children in the analytic sample with children holds $13,596 in net worth, with significant variation shown in the standard deviation of $281,969. As is well documented in the wealth literature, home value is the largest asset that families possess, with a median value of $135,550 (Killewald, Pfeffer, and Schachner 2017; Oliver and Shapiro 2006), followed by accounts at $43,023. Mortgage is the largest debt held by families in the sample, at $80,539. Respondents live in states where an average of 18 percent of pregnant women and infants are eligible to receive Medicaid. Racial diversity in the sample is significant: 21 percent of children are Hispanic, 32 percent are black, and 47 percent are non-Hispanic white. Children are seven years old, on average, at the time of interview. Mothers in the sample are the most likely to hold a high school diploma (38 percent), followed by a college degree (29 percent), and less than a high school diploma (30 percent). Twenty-five percent of the sample receives welfare, and the average annual income is just over $18,000.

Is State-Level Medicaid Access Associated with Family Wealth?

On the association between Medicaid and family wealth, table 2 presents models that predict each dimension of wealth as a function of state-level Medicaid access, time-invariant and time-varying controls, and state and year fixed effects. For each measure of wealth, we present two models: model 1 includes all time-invariant and time-varying controls; model 2 adds the value of net worth in the year of the child's birth. Model 1 shows that increases in prenatal Medicaid eligibility are significantly associated with the amount of retirement savings, as well as the value of home mortgages (among homeowners). For example, an increase from 0 to 1

Table 1. Descriptive Characteristics of Sample, NLSY-C 1986–2000

	Mean	Standard Deviation
Family wealth (median)		
Net worth	13,596	281,969
Home value	135,550	158,974
Mortgage	80,539	90,627
Savings	179.0	36,485
Accounts	43,023	103,125
Car value	12,487	18,398
Other debts on home	0	5539
Car debt	12,002	12,722
Percent simulated prenatal Medicaid eligibility	18.4	9.5
Hispanic	20.9	40.6
Black	32.4	46.8
Non-Hispanic white	46.7	49.9
Child age	6.9	4.1
Mother's educational attainment		
Less than high school	29.7	45.7
High school graduate	38.4	48.6
College	28.6	45.2
Girls	48.7	50.0
Receives welfare	25.4	43.5
Married	60.9	48.8
Annual wage (2018 dollars)	18,038	22,625
State characteristics		
Percent unemployed	5.8	1.7
Percent poverty	13.7	3.5
Minimum wage (2018 dollars)	7.1	1.0
Percent white	73.0	13.0
Percent black	13.9	9.4
Percent Hispanic	9.6	11.0
Percent college educated	17.6	8.0
State EITC rate	1.5	6.2
Democratic governor	0.4	0.5
Person years	36,689	

Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).
Note: All dollar amounts adjusted to 2018 values.

in the proportion of women and infants eligible for Medicaid (zero to 100 percent eligibility) is associated with an increase of about 234 percent (2.338*100) in the value of families' accounts, which include savings, certified deposits, IRAs, and tax-deferred savings plans. Because this is a not a realistic amount of variation in Medicaid access between states, it is useful to provide a range from these data. For reference, among the analytic sample, a standard deviation in simulated prenatal Medicaid eligibility is 0.096. To put this in context, a one standard deviation difference in eligibility would be the difference between a spending environment like Massachusetts (0.40) and Oklahoma (0.31) in 1992. A two standard deviation

Table 2. Regression of IHS Wealth Components on Prenatal State Medicaid Eligibility, NLSY-C 1986–2000

	M1 b	S.E.	M2 b	S.E.	Total Overall R-Squared	Total Person Years
Net worth	−0.161	(0.903)	−0.884	(0.922)	0.2006	36,689
Home value	0.501	(0.342)	0.419	(0.355)	0.1234	17,242
Mortgage	1.314**	(0.538)	1.261**	(0.551)	0.0719	17,242
Savings	−0.124	(0.368)	−0.283	(0.373)	0.3969	36,689
Accounts	2.513***	(0.443)	2.338***	(0.452)	0.478	36,689
Car value	−0.207	(0.290)	−0.284	(0.298)	0.1099	29,268
Other debts on home	0.136	(0.179)	0.143	(0.181)	0.0093	36,689
Car Debt	−0.0404	(0.190)	−0.0792	(0.193)	0.0962	15,314
State and year fixed effects	yes		yes			

Z-statistic tests of coefficient equality

Mortgage	−0.07	
Accounts	−0.28	

Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).
Note: Model 1 controls for all covariates with the exception of pre-birth net worth. Model 2 controls for all covariates, including pre-birth net worth.
*p < .1; **p < .05; ***p < .01

would be equivalent to the difference between Arkansas (0.34) and Hawaii (0.54) in 1992. In regard to within-state change, a one standard deviation increase in prenatal eligibility would be equivalent to the change in eligibility in California between 1991 (0.40) and 1993 (0.50). A one standard deviation increase in Medicaid eligibility is therefore related to a 22 percent (100*(2.338*0.096)) increase in the amount of wealth held in accounts, and a one standard deviation increase is associated with a 45 percent increase. This association is consistent with the possibility that Medicaid access better allows families to accrue assets via savings.

Model 2 shows that increases in Medicaid access are also related to an increase in the value of home mortgages among those who own a home. This finding could mean that families are able to purchase more expensive homes and build more assets via homeownership than families who live in less generous Medicaid states. The point estimate for home value (among homeowners) is positive but not statistically significant. Panel A of figure 1 plots the relationship between mortgage amount and state-level Medicaid eligibility based on model 2, illustrating the positive relationship.

Panel B of figure 1 paints a similar picture of the association between state Medicaid generosity and the total amount held in accounts.

Overall, analyses for the full sample suggest that increased Medicaid access positively affects family wealth via savings accrued in various types of accounts, as well as via home mortgages. Point estimates for the debt measures examined, including car debt and other home debt, are not significant. Estimates are very similar across models 1 and 2. This finding is unsurprising—given that Medicaid exposure is measured subsequent to pre-birth wealth, Medicaid access should not be highly related to this measure of family wealth.

Variation by Educational Attainment and Race-Ethnicity

Tables 3 and 4 consider variation in the effects of Medicaid on family wealth by education and race-ethnicity, respectively. Medicaid-participating families are heterogeneous with respect to their levels of education, with more than one-third of mothers enrolled in Medicaid at the time of the birth of a child having more than a high school education, and about half being Hispanic or non-Hispanic black. Re-

Figure 1. Margins Plot of Regression of Mortgage Amount and Accounts on Simulated Prenatal Medicaid Eligibility, NLSY-C 1986–2000
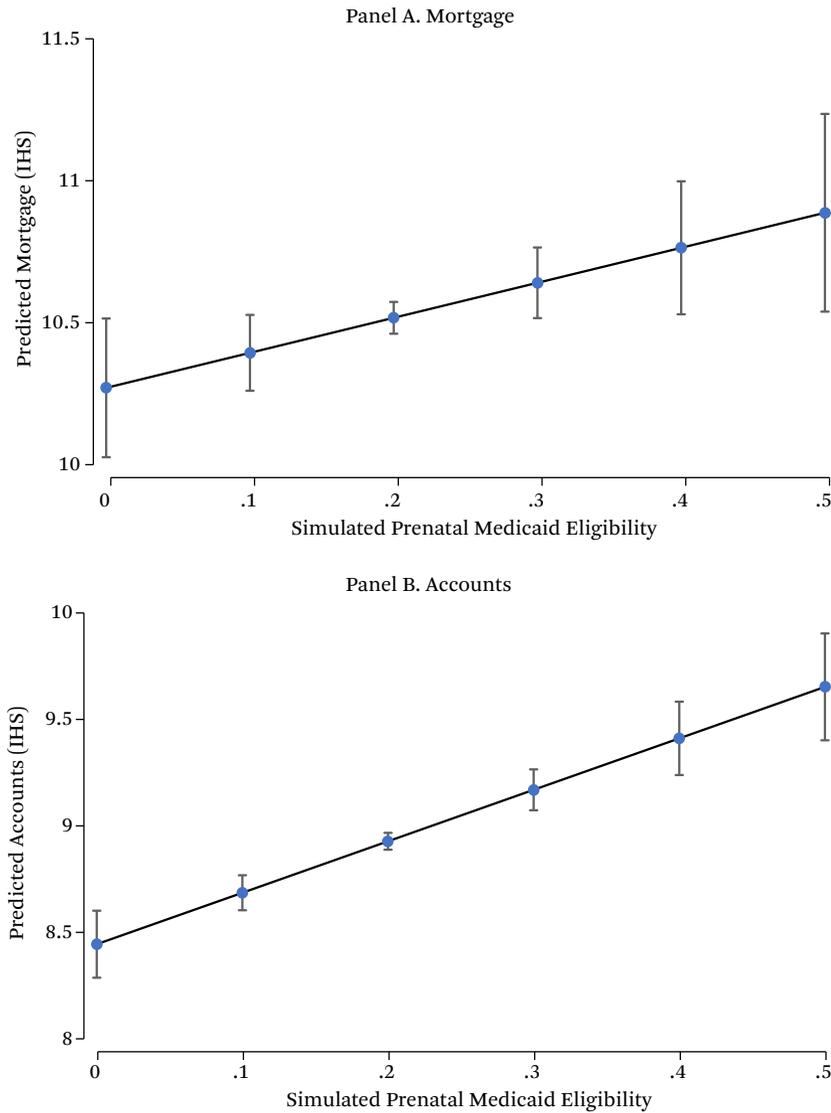
Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).
Note: All models control for full set of covariates.

search suggests competing possibilities about the heterogeneous effects of Medicaid on family wealth. If higher state-level Medicaid access disproportionately affects lower-educated and racial minority families, then increases in savings or reductions in debt should accrue to those families with increases in Medicaid. Alternatively, any positive effects of Medicaid increases may be concentrated among higher-

educated and non-Hispanic white families if they are in a better position to save for the long term as well as provide for short-term needs.

Table 3 presents the results from the regression of family wealth on state Medicaid access by maternal education. Results are stratified by education, and we compute differences between educational groups using z-statistic tests of coefficient equality. The benefits of in-

Table 3. Regression of IHS Wealth Components on Prenatal State Medicaid Eligibility by Mother's Education, NLSY-C 1986–2000

	M1 Less Than High School		M2 High School		M3 College	
	b	SE	b	SE	b	SE
Net worth	−11.208	(1.811)	−12.654*	(1.432)	−0.0479	(1.349)
Home value	0.313	(1.698)	0.868	(0.636)	0.00548	(0.315)
Mortgage	0.696	(1.658)	1.239	(0.994)	0.955	(0.696)
Savings	−11.015	(0.699)	−0.722	(0.634)	−0.00376	(0.628)
Accounts	−11.427**	(0.716)	0.236	(0.788)	3.646***	(0.752)
Car value	−0.211	(0.992)	−0.502	(0.537)	−0.223	(0.405)
Other debts on home	−0.162	(0.283)	0.509*	(0.292)	−0.181	(0.345)
Car Debt	0.179	(0.554)	0.0615	(0.323)	−0.405	(0.272)
State and year fixed effects	Yes		Yes		Yes	
Z-statistic tests of coefficient equality (ref. = less than high school)						
Accounts	—		1.56*		4.89***	

Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).

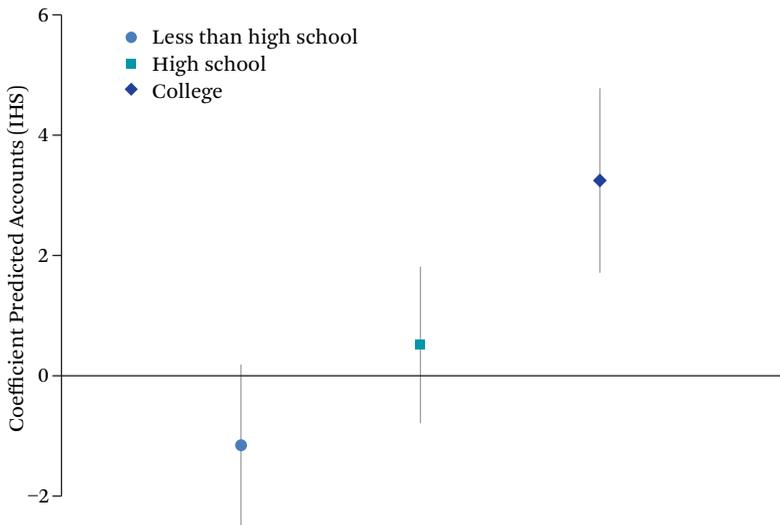*Note:* All models control for full set of covariates.

*p < .1; **p < .05; ***p < .01

creased Medicaid access are significantly greater among higher-educated families. Examining the coefficients for assets held in accounts shows that, among mothers with more than a high school education, the effects of Medicaid are positive and significant. Specifically, a one standard deviation increase in Medicaid eligibility is related to about a 35 percent increase in the amount of wealth held in accounts, among mothers with more than a high school education. This effect is significantly different than among families where the mother has less than a high school education, among whom increases in Medicaid are negatively associated with the value of assets in accounts. The point estimate for account assets is not significant among high school educated families, although families with high school educated mothers accrue significantly more wealth in accounts compared to mothers with less than high school. Figure 2 plots the relationship between state-level Medicaid eligibility and the total amount held in accounts, based on table 3. This figure illustrates the extent to which the most highly educated benefit

the most from greater levels of state generosity in this domain.

Table 4 shows the effects of Medicaid access by race-ethnicity. As in table 3, we present separate models by race-ethnicity, computing differences across groups using formal tests of coefficient equality. Examining assets in accounts shows that the positive effects of Medicaid access are driven by non-Hispanic white families, among whom a one standard deviation increase in Medicaid access is related to a 33 percent (100*(3.417*0.096)) increase in account assets. This effect is significantly different from the relationship observed among non-Hispanic blacks and Hispanics, for whom Medicaid has no significant effect on account assets. Examining mortgage amounts (among homeowners) shows that, among non-Hispanic white and non-Hispanic black families, greater Medicaid generosity is associated with more expensive mortgages. Figure 3 plots this relationship and illustrates that although the point estimate is larger for black families, it is not statistically significantly larger than that among white families.

Figure 2. Coefficients Plot of Predicted Relationship Between Accounts and Simulated Medicaid Eligibility by Mother's Education, NLSY-C 1986–2000

Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).
Note: All models control for full set of covariates.

Table 4. Regression of IHS Wealth Components on Prenatal State Medicaid Eligibility by Race, NLSY-C 1986–2000

	M1 White		M2 Black		M3 Hispanic	
	b	SE	b	SE	b	SE
Net worth	−0.638	(1.115)	0.0389	(1.681)	−12.367	(1.994)
Home value	0.254	(0.339)	1.423	(1.444)	−0.237	(0.958)
Mortgage	1.646**	(0.663)	3.921**	(1.682)	−11.555	(1.139)
Savings	0.478	(0.531)	−11.180*	(0.666)	−11.731**	(0.795)
Accounts	3.417***	(0.694)	0.705	(0.780)	−0.311	(0.874)
Car value	−0.391	(0.299)	0.114	(0.933)	−0.0167	(0.721)
Other debts on home	−0.0484	(0.301)	0.183	(0.236)	0.584	(0.375)
Car debt	−0.180	(0.274)	−0.177	(0.454)	0.0836	(0.389)
State and year fixed effects	Yes		Yes		Yes	
Z-statistic tests of coefficient equality (ref. = white)						
Mortgage	—		1.26		−12.43 **	
Savings	—		−11.95*		−12.31**	
Accounts	—		−12.60***		−13.34***	

Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).
Note: All models control for full set of covariates.
*p < .1; **p < .05; ***p < .01

Figure 3. Coefficients Plot of Predicted Relationship Between Mortgage Amount and Simulated Medicaid Eligibility by Race, NLSY-C 1986–2000
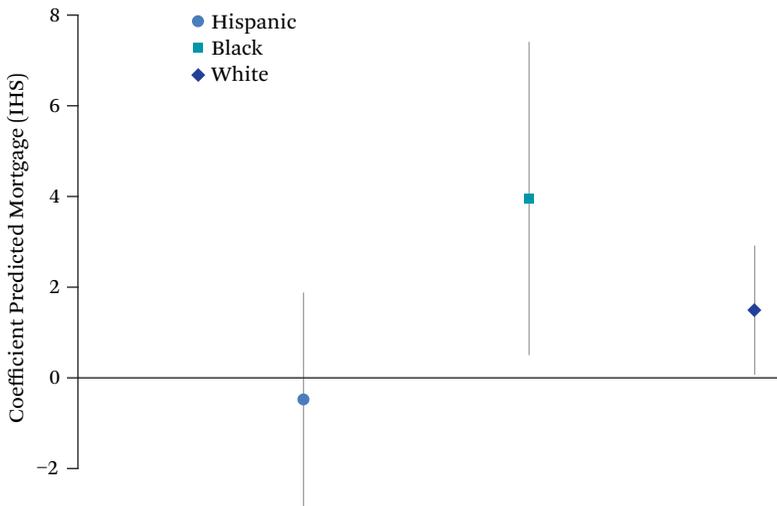
Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).
Note: All models control for full set of covariates.

Overall, analyses of the heterogeneous effects of Medicaid access suggest that the positive effects of Medicaid on family wealth are most pronounced among more educated and non-Hispanic white families. The same mechanisms that better allow these families to build wealth may permit them to continue to build wealth with expanded access to health insurance coverage.

DISCUSSION

Given the little to no evidence on the implications of Medicaid for wealth among families with children, we use NLSY-C and simulated Medicaid eligibility data to examine the effects of expanded prenatal Medicaid eligibility in the 1980s on family wealth. Simulated Medicaid eligibility addresses potential sorting around the cutoff (Biasi 2019) and state-specific changes in economic or demographic characteristics, which could bias naïve estimates. We find that expanded Medicaid access increased family wealth in the form of savings in various types of accounts and in home mortgages. Medicaid expansion did not significantly change other family debt measures or net worth. An increase

of one standard deviation in Medicaid eligibility (equivalent to the difference between Massachusetts and Oklahoma in 1992) is related to a 22 percent increase in the amount of wealth families hold in accounts.

These results suggest Medicaid access can facilitate family wealth building through improvements in savings and investment in home mortgages. Our findings that Medicaid expansion increased the average home mortgage amount but did not increase home value suggests that Medicaid access could help families save enough to qualify for a larger mortgage (or potentially contribute toward a down payment) on a house. Alternatively, Medicaid eligibility may have been one factor considered by mortgage companies in calculating the amount of mortgage for which a family qualifies. If families are more protected from financial shocks due to medical expenses (Gross and Notowidigdo 2011; Slusky and Ginther 2017; Hu et al. 2018; Miller and Wherry 2019), lenders may assign them lower risk values and qualify them for higher mortgage amounts. Medicaid expansion did not translate into increases in total net worth. Instead of uniformly affecting the mix

of assets and debts that make up net worth, the benefits appear more targeted. Because mortgages are debts, and accounts are assets, increases in both with Medicaid expansion may cancel out to produce no net effect on net worth. In addition, the effects of Medicaid expansion on savings and mortgage amounts that we observe in the short term may help families build higher net worth in the longer term.

Despite aggregate benefits, we find significant differences in the effects of Medicaid expansion by race and maternal education. The positive effects on family wealth among the full sample are driven by benefits for more highly educated and non-Hispanic white families. For example, Medicaid expansion increased account values among mothers with more than a high school education but may have reduced account values among families where the mother has less than a high school education. Similarly, Medicaid expansion increased account assets among non-Hispanic white families but had no effect on account assets among non-Hispanic blacks and Hispanics. Instead, Medicaid expansion increased mortgages among non-Hispanic blacks and reduced savings among non-Hispanic black and Hispanic families. Thus, rather than increasing wealth among less educated and nonwhite families, Medicaid expansion facilitated wealth development more among higher-educated and non-Hispanic white families. One possible explanation for these findings is that more educated and non-Hispanic white families were more likely to become newly eligible for Medicaid because the eligibility of the poorest families did not change with expansion. For example, families who gained Medicaid access when eligibility was raised to 133 percent of the poverty line were less likely to be headed by women or blacks than when eligibility was capped at 100 percent—although families in the slightly higher income group were also less likely than the lowest-income families to take up the benefits for which they were newly eligible (Card and Shore-Sheppard 2004). In this case, it may not be surprising that the benefits of expansion would be concentrated among more advantaged families who were less prevalent in the Medicaid-eligible population prior to expansion.

Alternatively, expanded access to health insurance coverage may allow families with racial and educational advantages to capitalize on those advantages and build more wealth than others without those advantages. If the benefits of Medicaid expansion were concentrated among more educated and non-Hispanic white families, then raising income and asset thresholds for Medicaid eligibility may have increased education and racial-ethnic inequality in wealth among families with children, rather than playing an equalizing role. Future research could examine whether the wealth effects of expansion were concentrated at particular points in the distribution, and what the implications of changes are for commonly used indices of inequality such as the Gini coefficient and Theil index.

Our study has several limitations. First, we measure family wealth in the year after pregnancy and birth. Families may be in flux during pregnancy, particularly those with less educated and nonwhite mothers. Our estimates may therefore underestimate effects on wealth (due to measurement error and attenuation bias) and could underestimate effects more among nonwhite and less educated mothers. Future research could examine long-term effects on family wealth. Second, our analyses rely on survey data rather than administrative data. However, wealth data include substantial error (Juster and Smith 1997) and the NLSY-C data we use include measures of a rich array of assets, in addition to capturing a sample of young families. Third, we provide intent-to-treat estimates to avoid endogeneity concerns about selection into Medicaid enrollment when using treatment-on-the-treated estimates (Freedman 2006). Future research could provide treatment-on-the-treated estimates and identify specific mechanisms for effects of Medicaid expansion on family wealth.

Our analytic strategy leverages within-state variation in Medicaid eligibility over time and across-state differences in Medicaid generosity in a given year. A strength of our strategy is that it addresses changes over time that may affect families' ability to save in all states, as well as stable differences between states that may be related to state spending or families' ability to build wealth. For example, our reliance on

within-state variation accounts for a potential correlation between state-level wealth and Medicaid generosity. Our findings rely on the assumption that other state-specific changes with implications for family wealth did not co-occur with changes in Medicaid eligibility (Miller and Wherry 2019). For example, our estimates would likely be downwardly biased if states that increased Medicaid eligibility had less money to spend on other programs that would have benefited the same families who gained Medicaid eligibility. Alternatively, our estimates would also be biased if states with rising family income are more likely to expand Medicaid eligibility and families in those states are able to save more over time. We include time-varying state controls, in addition to state and year fixed effects, to rule out multiple potential state characteristics that could violate our assumption. However, future work could examine whether or to what extent state Medicaid policy changes or family wealth depend on trends in state characteristics.

Overall, our analyses contribute to knowledge about the implications of Medicaid for family wealth. Our results suggest that Medicaid expansion increased wealth among families with children. However, heterogeneous effects reveal that the benefits of Medicaid expansion accrued to white families and those with more education. Contrary to evidence that the benefits of progressive policies that provide transfers to low-resource families tend to be larger among the most disadvantaged participants (Goodman-Bacon 2018; Meyer 2010), we find that benefits are larger among more advantaged families. This suggests that the relative advantages of more educated, white families render them better able to increase savings with Medicaid access. Evidence that Medicaid increased wealth inequality could reflect greater income instability among lower-SES adults (Hannagan and Morduch 2015; Kalleberg, Reskin, and Hudson 2000; Pew Charitable Trusts 2017) and greater economic returns to savings among families with existing advantages (Shapiro, Meschede, and Osoro 2013). Our results suggest that Medicaid expansion can help families build wealth, but its benefits are unequal. Efforts to improve wealth among black and Hispanic families and those with low education could pair Medicaid eligibility with targeted cash transfers or other supports.

Figure A1. Variation in Family Net Worth by Tercile of State-Level Medicaid Generosity
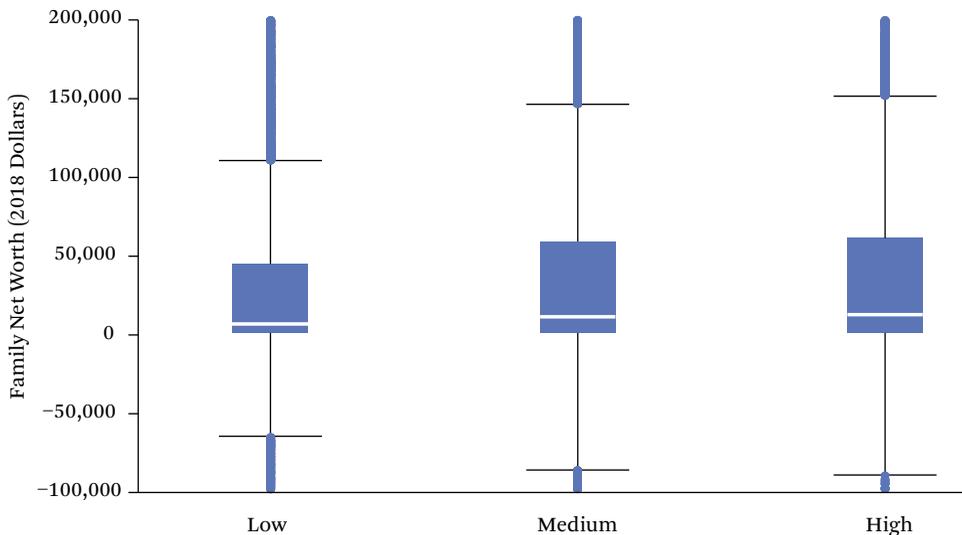
Source: Author's tabulation based on NLSY-C (Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development 2019).
Note: All models control for full set of covariates.

REFERENCES

Biasi, Barbara. 2019. "School Finance Equalization Increases Intergenerational Mobility: Evidence from a Simulated-Instruments Approach." *NBER* working paper no. 25600. Cambridge, Mass.: National Bureau of Economic Research. Accessed December 8, 2020. https://www.nber.org/papers/w25600.

Brown, David W., Amanda E. Kowalski, and Ithai Z. Lurie. 2018. "Long-Term Impacts of Childhood Medicaid Expansions on Outcomes in Adulthood." *NBER* working paper no. 20835. Cambridge, Mass.: National Bureau of Economic Research. Accessed December 8, 2020. http://www.econ.yale.edu/~ak669/medicaid.latest.draft.pdf.

Burbidge, John B., Lonnie Magee, and A. Leslie Robb. 1988. "Alternative Transformations to Handle Extreme Values of the Dependent Variable." *Journal of the American Statistical Association* 83(401): 123–27.

Bureau of Labor Statistics, U.S. Department of Labor, and National Institute for Child Health and Human Development. 2019. Children of the NLSY79, 1979–2016 data set. Columbus: Center for Human Resource Research, The Ohio State University.

Card, David, and Lara D. Shore-Sheppard. 2004. "Using Discontinuous Eligibility Rules to Identify the Effects of the Federal Medicaid Expansions on Low-Income Children." *Review of Economics and Statistics* 86(3): 752–66.

Collins, William J., and Robert A. Margo. 2001. "Race and Home Ownership: A Century-Long View." *Explorations in Economic History* 38(1): 68–92.

Conley, Dalton. 1999. *Living in the Red: Race Wealth, and Social Policy in America.* Berkeley: University of California Press.

Coyer, Christine, and Genevieve M. Kenney. 2013. "The Composition of Children Enrolled in Medicaid and CHIP: Variation over Time and by Race and Ethnicity." *Low Income Working Families* paper no. 22. Washington, D.C.: Urban Institute. Accessed December 8, 2020. https://www.urban.org/sites/default/files/publication/32686/412783-The-Composition-of-Children-Enrolled-in-Medicaid-and-CHIP-Variation-over-Time-and-by-Race-and-Ethnicity.PDF.

Currie, Janet. 2005. "Health Disparities and Gaps in School Readiness." *The Future of Children*: 15(1): 117–38. Accessed December 8, 2020. https://files.eric.ed.gov/fulltext/EJ795844.pdf.

Currie, Janet, and Jonathan Gruber. 1996. "Health Insurance Eligibility, Utilization of Medical Care, and Child Health." *Quarterly Journal of Economics* 111(2): 431–66.

Cutler, David M., and Jonathan Gruber. 1996. "Does Public Insurance Crowd Out Private Insurance?" *Quarterly Journal of Economics* 111(2): 391–430.

Dettling, Lisa J., Joanne W. Hsu, Lindsay Jacobs, Kevin B. Moore, and Jeffrey P. Thompson. 2017. "Recent Trends in Wealth-Holding by Race and Ethnicity: Evidence from the Survey of Consumer Finances." *FEDS Notes* no. 2083. Washington, D.C.: Board of Governors of the Federal Reserve System. Accessed December 8, 2020. https://www.federalreserve.gov/econres/notes/feds-notes/recent-trends-in-wealth-holding-by-race-and-ethnicity-evidence-from-the-survey-of-consumer-finances-20170927.htm.

Dubay, Lisa, and Genevieve M. Kenney. 1997. "Lessons from the Medicaid Expansions for Children and Pregnant Women: Implications for Current Policy." Testimony Before the House Committee on Ways and Means, Subcommittee on Health. Washington, D.C.: Urban Institute. Accessed December 8, 2020. https://www.urban.org/sites/default/files/publication/67161/900284-Lessons-from-the-Medicaid-Expansions-For-Children-and-Pregnant-Women-Implications-For-Current-Policy.pdf.

Du Bois, W. E. B. 1935. *Black Reconstruction in America: An Essay Toward a History of the Part Which Black Folk Played in the Attempt to Reconstruct Democracy in America, 1860–1880.* New York: Oxford University Press.

Edelstein, Sara, Heather Hahn, Julia Isaacs, Ellen Steele, and C. Eugene Steuerle. 2016. "Kids' Share 2016: Federal Expenditures on Children Through 2015 and Future Projections." Washington, D.C.: Urban Institute. Accessed December 8, 2020. http://www.urban.org/sites/default/files/publication/84301/2000934-Kids-Share-2016-Federal-Expenditures-on-Children-through-2015-and-Future-Projections.pdf.

Elliott, William, III, Mesmin Destin, and Terri Friedline. 2011. "Taking Stock of Ten Years of Research on the Relationship Between Assets and Children's Educational Outcomes: Implications for Theory, Policy and Intervention." *Children and Youth Services Review* 33(11): 2312–28.

Faber, Jacob William. 2018. "Segregation and the Geography of Creditworthiness: Racial Inequality in a Recovered Mortgage Market." *Housing Policy Debate* 28(2): 215–47.

Finkelstein, Amy, Sarah Taubman, Bill Wright, Mira Bernstein, Jonathan Gruber, Joseph P. Newhouse, Heidi Allen, Katherine Baicker, and Oregon Health Study Group. 2012. "The Oregon Health Insurance Experiment: Evidence from the First Year." *Quarterly Journal of Economics* 127(3): 1057–106.

Freedman, David A. 2006. "Statistical Models for Causation: What Inferential Leverage Do They Provide?" *Evaluation Review* 30(6): 691–713.

Freund, David M. P. 2007. *Colored Property: State Policy and White Racial Politics in Suburban America*. Chicago: University of Chicago Press.

Friedline, Terri, Rainier D. Masa, and Gina A. N. Chowa. 2015. "Transforming Wealth: Using the Inverse Hyperbolic Sine (IHS) and Splines to Predict Youth's Math Achievement." *Social Science Research* 49 (January): 264–87.

Gibson-Davis, Christina M., and Christine Percheski. 2018. "Children and the Elderly: Wealth Inequality Among America's Dependents." *Demography* 55(3): 1009–32.

Gluckman, Petter D., and Mark A. Hanson. 2006. "The Developmental Origins of Health and Disease." In *Early Life Origins of Health and Disease*, edited by Julie A. Owens. Boston, Mass.: Springer.

Goodman-Bacon, Andrew. 2018. "Public Insurance and Mortality: Evidence from Medicaid Implementation." *Journal of Political Economy* 126(1): 216–62.

Government Accountability Office. 1987. "Medicaid: Interstates Variations in Benefits and Expenditures." Briefing report to the Honorable Daniel Patrick Moynihan, United States Senate. Ann Arbor: University of Michigan Library.

Gross, Tal, and Matthew J. Notowidigdo. 2011. "Health Insurance and the Consumer Bankruptcy Decision: Evidence from Expansions of Medicaid." *Journal of Public Economics* 95 (7-8): 767–78.

Gruber, Jonathan, and Aaron Yelowitz. 1999. "Public Health Insurance and Private Savings." *Journal of Political Economy* 107(6): 1249–74.

Hannagan, Anthony, and Jonathan Morduch. 2015. "Income Gains and Month-to-Month Income Volatility: Household Evidence from the US Finan-

cial Diaries." *SSRN Electronic Journal*. DOI: 10.2139/ssrn.2659883. Accessed December 8, 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2659883.

Hartog, Joop, and Hessel Oosterbeek. 1998. "Health, Wealth and Happiness: Why Pursue a Higher Education?" *Economics of Education Review* 17(3): 245–56.

Hu, Luojia, Robert Kaestner, Bhashkar Mazumder, Sarah Miller, and Ashley Wong. 2018. "The Effect of the Affordable Care Act Medicaid Expansions on Financial Wellbeing." *Journal of Public Economics* 163 (July): 99–112.

Isaacs, Julia, and Sara Edelstein. 2017. "Unequal Playing Field: State Differences in Spending on Children in 2013." Washington, D.C.: Urban Institute. Accessed December 8, 2020. http://www.urban.org/sites/default/files/publication/89881/unequal_playing_field_0.pdf.

Juster, F. Thomas, and James P. Smith. 1997. "Improving the Quality of Economic Data: Lessons from HRS and AHEAD." *Journal of the American Statistical Association* 92(440): 1268–78.

Kalleberg, Arne L., Barbara F. Reskin, and Ken Hudson. 2000. "Bad Jobs in America: Standard and Nonstandard Employment Relations and Job Quality in the United States." *American Sociological Review* 65(2): 256–78.

Killewald, Alexandra, and Brielle Bryan. 2016. "Does Your Home Make You Wealthy?" *RSF: The Russell Sage Foundation Journal of the Social Sciences* 2(6): 110–28. DOI: 10.7758/RSF.2016.2.6.06.

Killewald, Alexandra, Fabian T. Pfeffer, and Jared N. Schachner. 2017. "Wealth Inequality and Accumulation." *Annual Review of Sociology* 43(1): 379–404.

Knudsen, Eric I. 2004. "Sensitive Periods in the Development of the Brain and Behavior." *Journal of Cognitive Neuroscience* 16(8): 1412–25.

Leininger, Lindsey, Helen Levy, and Diane Schanzenbach. 2010 "Consequences of SCHIP Expansions for Household Well-being." *Forum for Health Economics & Policy* 13(1): 1–30.

Lloyd, Patricia C., Anne K. Driscoll, Alan E. Simon, and Jennifer D. Parker. 2018. "Use of the National Health Interview Survey Linked to Medicaid Analytic eXtract Data to Identify Children with Medicaid-Covered Births." *National Health Statistics Reports* no. 109, April 2. Washington: U.S. Department of Health and Human Services, Cen-

ters for Disease Control and Prevention. Accessed December 8, 2020. https://www.cdc.gov/nchs/data/nhsr/nhsr109.pdf.

Meyer, Bruce D. 2010. "The Effects of the Earned Income Tax Credit and Recent Reforms." *Tax Policy and the Economy* 24(1): 153–80.

Miller, Sarah, and Laura R. Wherry. 2019. "The Long-Term Effects of Early Life Medicaid Coverage." *Journal of Human Resources* 54(3): 785–824.

National Governors' Association. 1990. "State Medicaid Coverage of Pregnant Women and Children—January 1990." Washington, D.C.: NGA Center for Policy Research.

———. 1992. "State Medicaid Coverage of Pregnant Women and Children—July 1992." Washington, D.C.: NGA Center for Policy Research.

National Low Income Housing Coalition. 2020. *The Gap: A Shortage of Affordable Rental Homes*. Washington, D.C.: National Low Income Housing Coalition.

Oliver, Melvin L., and Thomas M. Shapiro. 2006. *Black Wealth, White Wealth: A New Perspective on Racial Inequality*, 10th anniversary ed. New York: Routledge.

Orr, Amy J. 2003. "Black-White Differences in Achievement: The Importance of Wealth." *Sociology of Education* 76(4): 281–304.

Pew Charitable Trusts. 2017. "How Income Volatility Interacts With American Families' Financial Security." Issue Brief. Washington, D.C.: Pew Charitable Trusts. Accessed December 8, 2020. https://www.pewtrusts.org/-/media/assets/2017/03/incomevolatility_and_financial security.pdf.

Pfeffer, Fabian T. 2018. "Growing Wealth Gaps in Education." *Demography* 55(3): 1033–68.

Pfeffer, Fabian T., Sheldon Danziger, and Robert F. Schoeni. 2013. "Wealth Disparities Before and After the Great Recession." *Annals of the American Academy of Political and Social Science* 650(1): 98–123.

Quillian, Lincoln, John J. Lee, and Brandon Honoré. 2020. "Racial Discrimination in the U.S. Housing and Mortgage Lending Markets: A Quantitative Review of Trends, 1976–2016." *Race and Social Problems* 12(1): 13–28.

Saez, Emmanuel, and Gabriel Zucman. 2016. "Wealth Inequality in the United States Since 1913: Evidence from Capitalized Income Tax Data." *Quarterly Journal of Economics* 131(2): 519–78.

Semyonov, Moshe, and Noah Lewin-Epstein. 2013. "Ways to Richness: Determination of Household Wealth in 16 Countries." *European Sociological Review* 29(6): 1134–48.

Shaefer, H. Luke, Colleen M. Grogan, and Harold A. Pollack. 2011. "Transitions from Private to Public Health Coverage Among Children: Estimating Effects on Out-of-Pocket Medical Costs and Health Insurance Premium Costs." *Health Services Research* 46(3): 840–58.

Shapiro, Thomas, Tatjana Meschede, and Sam Osoro. 2013. "The Roots of the Widening Racial Wealth Gap: Explaining the Black-White Economic Divide." Research and Policy Brief, February. Waltham, Mass.: Brandeis University, Institute on Assets and Social Policy. Accessed December 9, 2020. https://heller.brandeis.edu/iasp/pdfs/racial-wealth-equity/racial-wealth-gap/roots-widening-racial-wealth-gap.pdf.

Slusky, David, and Donna Ginther. 2017. "Did Medicaid Expansion Reduce Medical Divorce?" *NBER* working paper no. w23139. Cambridge, Mass.: National Bureau of Economic Research.

Stone, Chad, Danilo Trisi, Arloc Sherman, and Jennifer Beltrán. 2020. *A Guide to Statistics on Historical Trends in Income Inequality*. Washington, D.C.: Center on Budget and Policy Priorities.

Taylor, Keeanga-Yamahtta. 2019. *Race for Profit: How Banks and the Real Estate Industry Undermined Black Homeownership*. Chapel Hill: University of North Carolina Press.

Wakschlag, Lauren S., Kate E. Pickett, Edwin Cook Jr., Neal L. Benowitz, and Bennett L. Leventhal. 2002. "Maternal Smoking During Pregnancy and Severe Antisocial Behavior in Offspring: A Review." *American Journal of Public Health* 92(6): 966–74.