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Abstract

This paper examines the extent to which family wealth affects the race-child achievement association for young children based on data from the Panel Study of Income Dynamics. We found little evidence that wealth mediates the black-white test scores gap. However, liquid assets, particularly holding in stocks and mutual funds, are positively associated with school-aged children's test scores. We speculate that this may partly reflect unmeasured personality traits of the parents such as a stronger future orientation or the financial savvy. We also found that the association was mediated through both material deprivation and family processes pathways. We made an attempt to strengthen the causal inference between wealth and children's test scores with the instrumental variable approach, the results were nevertheless inconclusive.

WEALTH AND THE TEST SCORE GAP

Research based on test results from the National Assessment of Educational Progress (NAEP) conducted since the 1970s showed a substantial lag in the achievement of black students vis-à-vis their white counterparts. These disparities have been observed to exist before children enter kindergarten, widen as they move through elementary and middle schools, and persist into adulthood (Phillips, Crouse and Ralph, 1998). Analyses by Hedges and Nowell (1998) show that the gap has narrowed in the past three decades but the rate of decrease has slowed down since 1988. Results from the early 1990s, however, indicate that the gap had widened again (National Center for Education Statistics, 1999). This early achievement gap between blacks and whites has very important individual and societal consequences. At the individual level, it is related to one's later life chances such as educational attainment, earnings (Jencks, 1998; Johnson and Neal, 1998), employment behavior, and health (Reynolds and Ross 1998). At the societal level, cognitive achievement gaps have implications for raising the next generation, for the skills of the workforce, for racial dynamics, and for international competitiveness. Understanding factors contributing to this gap, therefore, is of paramount importance.

Much research has documented the association between children's cognitive achievement and parental SES as measured by education level, occupation, and income (see review in Bradley and Corwyn, 2002; Hoff, Laursen and Tardif, 2000). Many of these studies focus on the effect of poverty—defined by family income—on children's achievement (e.g. Huston, McLoyd, and Coll 1994; Duncan and Brooks-Gunn, 1997; Yeung, Linver and Brooks-Gunn, 2002). However, household wealth (i.e. net worth) - which displays a distribution that is more unequal than that for income - has received little attention in this body of literature.

There are ample reasons to suspect that race differences in family wealth levels may help explain differences in child outcome measures. First, wealth displays greater racial disparities than any other socio-economic measure; furthermore, these differences have grown since the civil rights triumphs of the 1960s. Currently, the median African American family owns about one-eighth the net worth that the median white family does (Wolff, 1999). This difference is not explained by income or other demographic characteristics (Oliver and Shapiro, 1995). In other words, at every income level, the black-white gap in net worth persists.

Of added importance to the current study is the fact that Conley (1999) has found that family (parental) wealth is a strong predictor of teenage and young adult outcomes ranging from teenage premarital childbearing to educational attainment to welfare dependency to filial wealth accumulation. In many cases, when parental wealth is taken into account, black-white differences are eliminated or even flip direction. Despite such tantalizing evidence, wealth has been under-examined with respect to young children's development such as cognitive ability, where a marked racial disparity has been shown to persist. Addressing this gap in the literature is the purpose of the paper. Specifically, this paper examines the extent to which family net worth may mediate or modify the race - child achievement association. We will also examine potential mechanisms through which family wealth influences children's achievements.

Data for this study will come from the Panel Study of Income Dynamics, Child Development Supplement and Main Files. The PSID has collected data on family wealth every five years since 1984. These data provide a unique opportunity for intergenerational analysis on consequences of wealth accumulation on children's outcomes while holding other family factors constant. Data on children's developmental indicators for children aged 0-12 were collected in the 1997 Child Development Supplement. An extensive battery of questions about parent-child

relationships, parenting practices, and the learning environment at home was also included in this supplement. In combination with the extensive family histories available in the PSID, these data will allow us to better ascertain causal direction and explore potential mediating pathways through which family wealth may affect children's achievement.

Theoretical Framework

While the relationship between parental wealth and child development has not been adequately theorized, more work has been done on income and SES differences; explanations for income gradients can roughly be divided into three camps. First, some researchers focus on the material deprivations that low SES induces such as poor nutrition, lack of adequate medical care or unsafe environments (see, e.g., Mack and Lansley, 1985; McGregor and Borooah, 1992; Callan, Nolan and Wheelan, 1993). Research in this tradition has shown that low-income households do experience a degree of deprivation and that this may explain part of the effect of income on child cognitive outcomes (Mayer, 1997). For instance, some work has shown that poor children are less likely to have educational toys or books in the household, and such items are positively associated with healthy cognitive development (Duncan, Brooks-Gunn and Klebanov, 1994; Smith, Brooks-Gunn and Klebanov, 1997; Zill, 1988; Zill, Moore, Smith, Stief and Coiro, 1991).

A second paradigm, often called the family stress/processes hypothesis, sees low income, variable employment, a lack of cultural resources and a feeling of inferiority from relative social class comparisons as exacerbating household stress levels, frequently exhibited in parental depression, which in turn leads to detrimental parenting practices such as yelling, shouting and hitting, that are not conducive to healthy child development (Lempers, Clark-Lempers and

Simons, 1989; Whitbeck, Simons, Conger, Lorenz, Huck and Elder, 1991; Conger, Conger, Elder, Lorenz, Simons, Whitbeck, 1992; Conger, Elder, Lorenz and Simons, 1994; McLeod and Shanahan 1993; Elder, van Nguyen and Caspi, 1995; Hanson, McLanahan and Thomson, 1997).

The last theory asserts that it is not poverty, lack of non-monetary resources or relative inequality that is so detrimental to child development as much as it is the fact that low SES parents differ from higher-income parents (Mayer, 1997). Scholars in the no effect camp assert that the association between SES and child developmental outcomes is largely spurious. They claim that the same parental characteristics that lead to low income, education, and occupational prestige also lead to detrimental developmental outcomes for offspring. These unmeasured characteristics may range from parenting styles to aspirations to genetic endowments.

Within each of these paradigms, there would seem to be room to expect a role of family wealth in addition to effects of family income and other measures of socioeconomic status; below we address the salience of family net worth to each of these theoretical models:

Material Deprivation: By now, many scholars have acknowledged that single year income measures are woefully inadequate in capturing the overall economic resource levels of a family. Particularly at the low end of the economic spectrum, income has been shown to substantially vary from year to year (Duncan, 1988). Thus, it has now become standard to use multi-year income measures. Research in this vein has shown that a five-year average is ideal and that the returns to the addition of more years are negligible and not worth the missing data and attrition costs (Mayer, 1997). However, even if researchers have made significant progress in reducing the measurement error associated with income and are approaching a reasonable estimate of "permanent income," they are still neglecting a very important component of family economic resources – assets. This oversight is worrisome since the income and wealth

distributions are hardly co-linear. The correlation between a multiyear income measure and net worth is shown to be around .45 (Conley, 1999) and that between single-year earnings and wealth is about .23 (Diaz-Gimenez, Quadrini & Rios-Rull, 1997). In other words, even a multi-year income measure is a poor proxy for wealth and by extension for total family economic resources available to children. Furthermore, since family income may largely go to pay for basic living expenses and current consumption, the presence or lack of substantial assets may mean the difference between additional educational resources such as attending private schools, structured activities outside the home, books, magazines, and educational toys, computer related learning programs and so on. These and other experiences such as attending concerts and theaters help increase the "cultural capital" for children (Bourdieu, 1977, 1986) that can have a positive effect on their academic achievement.

Additional resources can also afford parents to provide materials that enhance a child's social status or acceptance by his/her peers such as a house in a nice neighborhood, family car, or "cool" birthday parties or clothing, which have been shown in adolescent literature to have a positive impact on children's self esteem (Walker & Greene, 1986).

Family stress/process: One of the principle mechanisms through which assets (another term for family wealth) are hypothesized to have a salutary effect on family well being is by acting as a buffer in times of financial need (Sherradan, 1992). If assets smooth out consumption during periods of income strain or increased costs – such as an unemployment spell or medical crisis, for example – then they may reduce parental stress levels and lead to more positive parenting practices or decrease the likelihood of family breakups (Yeung and Hofferth, 1998). Further, the presence of untapped reserve funds in the form of wealth may help reduce day-to-day financial anxiety, even if they are not used. Also, since the most significant form of equity

in the modal American family is housing wealth in the form of a primary residence, this sort of wealth – which has a "conspicuous consumptive" aspect to it – may serve to alleviate class anxiety as compared to families that live in less valuable residences or who rent and do not enjoy the pride and security of ownership.

No Effect: Theorists who claim that evidence shows that the effect of income may be largely spurious base their claims on a couple main findings. First, additional dollars from non-labor market sources (such as welfare) do not appear to have much of a positive effect on child development. The theory is that income from earnings is much more likely to be associated with positive parenting qualities like skill and responsibility. Income from welfare is independent of these unobservable characteristics; however, income from welfare may be *negatively* correlated with unobservable factors that correlate with positive parenting and positive child outcomes.

Second, marginal changes in income have a weak effect on outcomes (Mayer, 1997). Wealth is worth considering in this paradigm. Since some economists estimate that up to 80 percent of lifetime wealth accumulation can be attributed to past generations in the form of gifts, inheritances, or indirect support, it follows that wealth may be less associated with the unobservable characteristics that co-vary with labor market income (Kotlikoff and Summers, 1991). Other economists put the figure closer to 50 percent (Modigliani, 1988) – still a sizable portion of lifetime accumulation. In other words, a significant portion of family wealth may have nothing to do with the life skills of the parents, but rather the economic conditions of their ancestors. In addition, the extent to which parents cumulate wealth and what types of asset portfolio that parents choose to own may reflect certain personality traits that are otherwise unobserved.

Wealth can affect children's achievement in multiple ways, depending on the sources of wealth. One theory of wealth effects would suggest that the primary role of assets is to smooth consumption over income shocks. This theory would predict that liquid forms of wealth—such as cash accounts, securities and the like—would have more of a positive effect. However, another theory suggests that it is the social-psychological returns to wealth that matter most for young children: the sense of relative class privilege that is engendered through the ownership of assets, the economic confidence of the parents, the sense of security and future aspirations and expectations that come from the presence of visible forms of wealth in the life course of the family. This latter mechanism would imply greater relative importance of tangible—less fungible—forms of assets such as business and homes. Likewise, assets that result from inter vivo transfers, inheritance, or high returns on investments may have different effects from wealth accumulated through investing in business, real estates, or savings that tend to constrict current consumption. The former source of wealth can be seen as more exogenous to the family situation and therefore may have more of the windfall effect on consumption and less of the social-psychological effect that successful savings may have on the family's future orientation, belief in the value of education and work, and so on. We will examine wealth from multiple sources in this paper, including the effect of "windfall" wealth through use of inheritance as an instrumental variable.

Previous Literature on Family Wealth Effect and Test Scores

Several articles have examined the effect of family wealth on young children's test scores, finding somewhat inconsistent patterns for different age groups. All of these studies to date have been based on the National Longitudinal Survey of Youth (NLSY). Despite the rich

information on child development, NLSY data over-represent children of relatively young mothers in early years, thus calling into question the generalizability of the findings. Phillips et al. (1998) include net family wealth when examining the black-white PPVT-R gap among five and six year-olds based on the CNLSY data. They find that wealth is not a significant predictor. Haurin et al (2000) examine NLSY PIAT math and reading recognition scores for children who were aged 4-8 in 1988 and were interviewed in three subsequent waves. They find that home ownership positively affects children's math and reading scores through its effect on home environment, but net wealth has no significant direct effect. Orr (2003) uses more recent data, examining PIAT math scores measured in 1996 for school-aged children (aged 5-14). She finds that wealth, particularly income-producing assets, affects a child's math scores both directly and through its effect on the level of cultural capital to which he or she is exposed. Finally, Corwyn and Bradley (2003) model 1996 NLSY PIAT reading recognition scores for children aged 6-9 and 10-13 and find that wealth has no direct effect but an indirect effect through learning stimulation at home.

This paper extends previous analyses by examining the impact of family wealth in greater detail by exploring multiple functional forms of wealth and sources of wealth, examining multiple mediating pathways, and including a more extensive set of statistical controls than previous literature. We also took advantage of data from a new national dataset which has several advantages for this topic (discussed in the next section). Finally, we attempted a more careful check on the causal relationship between family wealth and children's test scores with the instrumental variable approach and by considering grandparents' socioeconomic status in our analysis.

METHODS

Data

Analysis in this paper is based on data from the Panel Study of Income Dynamics (PSID), which has the following advantages: (1) a nationally representative sample of families with young children, (2) family wealth history data that have fewer missing data and income history data that are of higher quality than those in the NLSY (more discussion on this issue in the measurement section), and (3) children's test scores obtained from the Woodcock Johnson Revised test, which is shown to have less racial bias than PPVT tests.

The PSID is a longitudinal study that began in 1968 with a nationally representative sample of about 5,000 American families. For the past three decades, the study collected high quality annual data from these families and individuals about their demographic, socioeconomic, and employment behavior. By 1996, the sample had grown to include over 8,700 families through the formation of new families by children or other sample members of the original 5,000 families. In 1997, the PSID added a refresher sample of immigrant families that migrated to the U.S since 1968. In the same year, the PSID initiated a Child Development Supplement (CDS) to collect data about children's development and family dynamics from the PSID families with children aged 0-12. Information collected in this supplement includes parent-child relationships, HOME-SF cognitive stimulation and emotional support, parenting attitudes and styles, as well as cognitive assessment for children and the primary caregiver of the target child. In families that have more than one child within this age range, up to two siblings were randomly selected to participate in the study. The total sample size of CDS is 3,563 children in 2,394 families from all socioeconomic strata. The response rate is 88% at the family level. The study oversampled low-income black families, with black families accounting for about 40% of the CDS sample. To

adjust for the original selection probability and the nonresponse in the study, longitudinal sampling weights developed by the PSID staff are used in analysis in this paper.

Participants

The analysis sample for this paper includes children between the age of 3 and 12 who had valid family wealth data and a cognitive assessment at the time of the survey in 1997 (the response rate for child assessment is approximately 80%). As the developmental needs and measures are different for older children, we examine preschoolers separately from school-aged children. We include only Black and White children in our analyses for two reasons. First, PSID does not include an adequate sample of children of other ethnic identities that allows us to make a detailed cross-group comparison. Second, our main concern is whether family wealth can explain part of the residual variance left in the black-white achievement gap after a set of conventional covariates is taken into account in the model. The final sample consists of 2,222 children, 1,177 whites and 1,045 blacks.

Analysis Plan

We conduct regression-based analysis to examine the relationship between family wealth and children's test scores. Each child outcome is analyzed separately. A series of step-wise regression analyses is conducted with different groups of predictors in the models, first with only race, then with race and controls for family SES (as traditionally measured), subsequently with parental wealth measures added, and finally with mediators (from both material deprivation and family process pathways) added to the models. Our models use Huber-White adjusted standard errors that allow for multiple respondents from the same family. We anticipate that the presence

of parental wealth will mitigate the race-child outcome relationship; our hypothesis is that residual race differences that had remained when traditional measures of parental SES were included will be reduced when parental wealth is held constant.

We investigate potential mediating pathways through which wealth mediates or moderates the racial disparities in children's achievement. Our analysis is guided by a conceptual framework that incorporates both groups of mediators representing constructs in the "material deprivation" and "family stress/process" paradigms outlined in the background section. Material deprivation measures include physical home environment, cognitively stimulating materials (e.g. books, toys, musical instruments) and, for school-aged children, private school attendance. Measures for the family processes pathway include two indicators of parenting practices assessing the level of warmth/responsiveness of the mother and activities parents do with the child. We further hypothesize that wealth can influence children's achievement indirectly through its positive association to a child's self-esteem, which has been shown in previous literature to be associated with a higher academic performance (Liu, Kaplan, & Risser, 1992).

Finally, we employ an instrumental variable strategy to conduct a series of analysis using inheritance as an instrument of family wealth to check the causality between wealth and children's test scores.

Measures

Child's cognitive ability, conceived broadly to include language skills, literacy and problem solving skills, was assessed in 1997 through the Woodcock Johnson Achievement Test-Revised (W-J; Woodcock & Johnson, 1989). As the name of the test suggests, the W-J test is a

measure of children's achievement, not IQ. To assess the cognitive ability of the preschoolers, two age-standardized subscales were used: Applied Problems and Letter-Word scores. For school-age children, their cognitive skills are assessed with the broad mathematics and broad reading scores. Broad math scores are combined scores from the Calculation test and the Applied Problem subscales, and broad reading scores are combined scores from the Passage Comprehension and the Letter-Word subscales. These scores are also standardized to children's age. For a detailed description of these measures, see the User Guide for the PSID Child Development Supplement (Hofferth et al., 1997).

Wealth. Family wealth data are drawn from measures collected in two waves of the PSID - 1994 and 1989. PSID had collected asset data every five years since 1984 up until 2001. The wealth data collected each time represent the total assets values for the family in the past five years. For children who were aged 8 or younger in 1997, we used the wealth data collected in 1994 which represent wealth accumulated from 1989 to 1994. For children aged 9 and above in 1997, we used the wealth data collected in both 1994 and 1989, reflecting assets accumulated between 1984 and 1994. Thus, our measures approximate family wealth over the entire life course of most children, and for some children even a few years before they were born. These data allow us to examine the cumulative impact of the family wealth on children's test scores assessed in 1997.

The PSID has collected information about the equity of owner occupied real estate, real estate other than main home, vehicles or other assets on 'wheels', farm or business assets, shares of stock in publicly held corporations, mutual funds or investment trusts, including stocks in IRAs, checking and savings accounts, money market funds, certificates of deposit, savings bonds, treasury bills, and other investments in trusts or estates, bond funds, life insurance

policies, special collections. The family net worth is measured as the sum of all above items minus the value of debts, such as mortgages, credit cards, student loans, medical or legal bills, and personal loans.

The PSID wealth data have been shown to be of high quality and correspond well with the wealth data from the Survey of Consumer Finance and from the Health Retirement Study (Juster, Smith and Stafford, 1999). The PSID employs an innovative survey method that obtains estimated values of wealth, on which basis the study then imputes the missing wealth data. When a respondent reports "Don't know" or refuse to answer a wealth question, a set of follow-up questions is designed to probe for an approximate amount. These questions use several bench-mark values to assess whether the amount is more than a certain value (e.g., $5,000 for cash accounts, money markets funds, CD, bonds, or T-bills), if "yes", a follow-up question asks if it amounts to a higher value or more (e.g., $10,000); if "no", then another question asks if it amounts to a lower value (e.g., $1,000). These bench-mark values are set at different levels depending on which type of assets is in question. For example, if a respondent answers "Don't know" or refuses to answer the question of how much money the family has in stocks or mutual funds, a follow-up question will assess whether the total value amounts to $25,000 or more. If the respondent answers "yes", then another question asks whether it amounts to $50,000 or more, and if it is, yet another question probes to assess if it is $100,000 or more. If the respondent answers "no" to the first follow-up question, then there is a question probing whether it amounts to $5,000 or more. For more details on these questions, see the PSID questionnaires for the wealth section on the PSID website. In comparison to the NLSY wealth data that have about 10% of missing values (Corwyn & Bradely, 2003), the PSID wealth data have few missing data, although the study only collects the wealth data every five years before 1999.

We attempted to capture the wealth effects in multiple ways. First, as family wealth distribution is rather skewed, we created the log form of the total net wealth for the regression analysis. We also included a dummy variable indicating whether the child was living in a family that had no net wealth. We also conducted analysis with a square root transformation of family wealth. As results are similar, we do not present them in the paper. A second wealth measure was calculated by excluding the main home equity. We used the logarithmic forms of these wealth measures in our multivariate analyses. Thirdly, to capture nonlinear effect of family wealth, we included a set of dummy variables indicating the quartiles in which a family's wealth fell.

In addition, we separated total wealth into liquid (such as cash accounts, stocks, mutual funds) and illiquid assets (such as real estates and business) and examined their respective impact. We also examined in greater detail the impact of various types of assets – (1) home equity, (2) checking and saving accounts, T-bills and certificate of deposits, (3) stocks and mutual funds, (4) business and other illiquid assets, and (5) other debts. Controlling for whether a family owns that particular type of assets, we examined the relationship between the log value of each type of assets and children's test scores. This was intended to test the various mechanisms by which wealth may be having an effect: through increased (and smoother) consumption, through social-psychological signaling of class privilege and relative advantage vis-à-vis other households, or through constricted consumption due to debts or long-term investments.

Finally, we created a series of income-plus-wealth measures by converting total net wealth into an income stream and adding it to total family income (see Conley, 2001 for this approach). We compared estimates for these measures to those in models that include only the

family income to see if adding family wealth reduces the race-achievement coefficients or augments the explanatory power of the models. In this set of analyses, we assessed the differential wealth impact with a series of measures adding to income an arbitrary proportion of wealth – 6 percent, 8 percent, 10 percent, 15 percent, and 20 percent. We also created two additional measures that include income plus a portion (10 percent and 20 percent respectively) of the liquid assets, that is, those that can be easily converted into income such as stocks, bonds, mutual funds, and cash accounts. Then we calculated the logarithmic forms of these values.

Income measures. Our income measure is the total pre-tax income of all family members, inflated to 1997 price levels using the Consumer Price Index (CPI-UX1) and averaged over all of the years since the child's birth through 1996, one year prior to the time child well-being was assessed. These data were drawn from the annual reports of family income collected in the 1986-1997 waves of the PSID. We used this measure to approximate the "permanent income" concept. The *average family income since birth* variable used in our analysis is scaled in $10,000s. We chose not to use a frequently used size-adjusted measure of family income—the "income-to-needs" ratio—because we wanted to distinguish the effect of family size from that of family income. For our multivariate analysis, we used a logrithmic transformation of family income. Several other functional forms of family income, including dummy variables that capture 5 different income levels, separate income measures for early and middle childhood states, and the proportion of years a child lived in poverty, were also tested in our preliminary analyses. As basic patterns are similar, we show only the results with log family income since child's birth.

Constructs in the material deprivation model. We used several indicators to measure the material resources that a family provides for the child, including the physical home environment,

cognitive stimulating materials provided to the child, and number of years a child attended private school (for school-age children).

The physical environment of the home was assessed with four items from the Home Observation for Measurement of the Environment (HOME); a subset of the full HOME scale (Bradley & Caldwell, 1980; Bradley, Casey, & Caldwell, 1997) was administered in the PSID-CDS. Interviewers rated four aspects of the physical environment of a home assessing the extent to which the home was cluttered, monotonous, safe (reverse coded) or clean (reverse coded). The four physical environment items were averaged to form a scale. This scale measures a mixture of parental investment of both money and time in the sense that poor housing conditions are usually less safe and more monotonous, while a clean and organized home requires either parental time or money to purchase help with these tasks. An advantage of these measures in the PSID Child Supplement over those in other surveys is that they were measured on 5-point Likert scales while in other studies they were often reduced to 1/0 variables. The scale ranged from 0=very cluttered/monotonous/not at all clean/not safe to 4=not at all cluttered/monotonous/very clean/safe. For analyses using HOME items in the present study, we made an effort to keep variability of responses intact, so we used the full range of responses in all subscales created from the HOME items.

Cognitively stimulating materials provided to children at home were measured with items from the HOME scale, all reported by the primary caregiver. HOME scale include age-appropriate items such as how many books the child has (0=none; 4=20 or more), whether the child has the use of a CD or tape player and at least 5 CDs or tapes (0=no; 1=yes), and how many things, of numbers, alphabet, colors and shapes/sizes, the primary caregiver used to helped the child learn at home (0=none; 4=all). Another item in the cognitively stimulating materials

scale is how many newspapers and magazines the family gets regularly (0=none; 2=3 or more newspapers/magazines). This item is a rough indicator of family engagement in everyday literacy activities, expected to be an important vehicle for parents to transmit cultural capital to their children. For older children, the HOME scale includes also participation in extracurricular activities, frequency of attendance to museums, musical or theatrical performances. This index is a proxy for the level of cultural capital to which a child has access.

The second group of mediators includes parenting behavior measures. The *warm parenting* (or responsiveness) construct is comprised of nine observational HOME items. These items were rated by the interviewer, who observed interactions between the child and his or her primary caregiver during the interview. Sample items include how often primary caregiver spontaneously spoke/conversed with child; spontaneously praised child; provided toys/interesting activities; and caressed, kissed, or hugged child; responses on most items ranged from 4=<u>often</u> to 0=<u>never</u>. The warm parenting construct was created by taking the average of all 9 items (Cronbach's alpha was .88).

Another measure is parents' *activities with the child.* This scale is comprised of six items that include parents' report of doing various activities with the child, such as reading books or stories, playing sports, doing a puzzle, playing on a computer, or building something together (0=<u>not in past month</u>; 4=<u>every day</u>). The scale was formed by taking the mean of all six items (Cronbach's alpha=.67). The correlation between cognitively stimulating materials and activities with the child is .24.

<u>Child's Self-esteem</u>: This measure is only available for children age 8 and older. We measure child's self-esteem with a subscale on global self-concept created by H.W. Marsh (Marsh, 1990). This scale consists of 8 self-reported items assessing, on a seven-point scale, the

extent to which a child feels “I do lots of important things”, “I like being the way I am”, “Overall, I have a lot to be proud of”, “I can do things as well as most people”, “A lot of things about me are good”, and so on. The scale, formed by taking the mean of all eight items, ranges from 1 to 7 (Cronbach’s alpha was .75).

Other control variables. The PSID collects a wide range of children’s characteristics and family histories that can be included in our analysis as statistical controls. They include child’s characteristics, parental characteristics, and family characteristics that may be associated with children’s achievement and behavior. Characteristics of the child include age, gender, race, birth order, and low versus normal birth weight. *Age of child* ranged from 3 to 12 years. *Child gender* is coded as 0=boy and 1=girl. *Child’s race* was dichotomized into Black and White. *Low birth weight status* of the child served as a rough proxy for child’s health. This variable is coded as 1=low birthweight (less than or equal to 5.5 lbs. at birth) or 0=birthweight greater than 5.5 lbs.

Parental characteristics we controlled for include family head’s age, parental education, family head’s occupational prestige measured with the Hodge-Siegel-Rossi prestige scores, whether the mother received public assistance when pregnant with the child, and mother’s cognitive ability measured with a passage comprehension score.

Parental education measures the years of parents’ completed schooling, where 12 years is equivalent to a high school degree. When there is more than one parent in the family, we use the higher of the two values. Though *occupational prestige* was collected in 1997—ostensibly after the wealth measure was collected—we do not anticipate problems with using it as a control since it is a relatively stable measure of parental life chances in the labor market. Empirically, the correlation between the occupational prestige for the 1997 family head in our analysis sample and that for those who were a family head in 1994 is .96.

Due to PSID's genealogical design, some information about the child's grandparents is also available. We also controlled for *grandparents' years of education* to parse out the influence of grandparents' SES from that of family wealth on children's test scores.

Mother's cognitive ability is assessed with a passage comprehension test of the Woodcock Johnson Achievement Test-Revised at the time of the CDS interview in 1997. When parental education is held constant, this measure is used as a rough proxy of a child's genetic endowment and other human capital not captured by parent's year of schooling. Raw scores on this test ranged from 6 to 43.

Other family characteristics include family structure, number of children in the family, region of residence, and whether the family resided in a metropolitan area in 1997. *Family structure* was coded based on mother's marriage history into four dummy variables: intact two-parent family, never married single-mother family, married once but currently divorced, separated, or widowed in 1997, and others. The intact two-parent family was the omitted category in all the multivariate analyses. *Metropolitan statistical area* was measured as 1=MSA (urban) and 0=non-MSA (suburban/rural).

RESULTS

Table 1 presents the weighted family income, wealth, and test scores for black and white children. Consistent with the literature, marked differences exist between these two groups. White children enjoy significantly higher income and wealth and have test scores that are about .6 to .7 standard deviations higher than black children. All measures are significantly different between the two groups at an alpha equals .05 level. The income and wealth levels for our study sample are higher than the national average as this sample consists of families with children that

generally have higher level of financial resources, and it excludes the Hispanic families whose income and wealth tend to be lower than national averages. Note that a much higher percentage of white children lived in households that owned both liquid and illiquid assets, such as ownership of business or farm (17 percent versus one percent), checking or saving account (83 percent versus 33 percent), stocks/mutual funds (42 percent versus eight percent). Even when black families owned a certain type of assets, the values were substantially lower than those for white families. As a result, the total net worth for white families was about six to nine times as high as that in black families, depending on whether home equity is included in the family wealth calculation. On average, 11 percent of white children—as opposed to 35 percent of black children—lived in households that owned no assets.

With respect to test scores, we also see large gaps between the two groups even before the children enter kindergarten. For preschoolers, black children scored about seven points (.4 standard deviations) lower in Letter-Word and 14.5 points (1.1 standard deviations) lower in the Applied-Problems test than did their white counterparts. For school-aged children, blacks scored 11-12 points (about two-thirds of a standard deviation) lower in both mathematics and reading tests than white children.

[TABLE ONE ABOUT HERE]

Table 2 shows the correlations among various versions of income, wealth, and a child's cognitive ability measures. Consistent with previous literature, single-year family income and family wealth—though significantly correlated—were not highly correlated. The coefficients between family income in 1997 with various forms of wealth data collected in 1994, ranged from .18 to .55. When the average income since birth was used, the coefficients increased in magnitude, to a highest level of .55 between the log form of the multiple-year family income and

those of family wealth. The coefficients between wealth measures and test scores, though significant, were modest, ranging from .06 to .27, with the magnitude of association to the logarithmic forms of wealth higher.

Table 3 shows the descriptive statistics for the other measures used in our multivariate analysis, including family process and material deprivation covariates, as well as demographic control variables. Consistent with previous literature, a higher proportion of black children were born at a low birth weight (less than 5.5 pounds or 2,500 grams). Parents of black children had lower average education levels and occupational prestige scores, were more likely to be unemployed, and scored lower on a verbal test. Two-thirds of the white children, compared to 29 percent of the black children, lived in intact two-parent families. Almost half of the black children, compared to five percent of white children, lived with a never married single mother. Regarding the material resources and family process mediators, white children on average enjoyed a home setting that had a better physical environment, higher level of cognitive stimulation, and had parents who were reported being "warmer" and doing activities with children more frequently.

[TABLES TWO & THREE ABOUT HERE]

Multivariate Analyses

Tables 4 to 6 present results of a series of OLS regression analysis for preschool children while Tables 7 to 9 present corresponding analyses for school-aged children. In each set of tables, the first table shows the estimates on the child's verbal ability, the second on child's problem solving (or math) ability, and the third table presents estimates on the mediators. All models have Huber-White adjusted standard errors that allow for multiple respondents from the same family. We conducted separate models for each child outcome. Due to space constraints,

we only show the estimates for key covariates in the tables. Covariates not shown in the tables are noted at the bottom of each table.

Preschool Children

In Table 4, we observed a pattern that is in contrast to findings in previous literature on racial achievement gaps. Our first regression model included only race as a predictor. In Model (2), we added child characteristics and other family control variables. Note that the race coefficient on the Letter-Word Score for preschool children became non-significant in this second model and remained so in all subsequent models. That is, test scores for black and white children with the same parental and individual characteristics were no longer significantly different. Several of the parental and other family characteristics – parental occupational prestige, mother's cognitive ability, and number of children in the family (coefficient not shown) – were significantly associated with the test scores in an expected direction. Not shown in the table but worth noting is the fact that the race coefficient became non-significant even before mother's test score was included in the model. Adding these demographic variables increased the explanatory power of the model substantially, from three to 24 percent of the variance explained. In Model (3), we added the average family income. The explanatory power of the model increased only by one percent, and family income is not significant associated with preschooler's letter-word scores.

[TABLES FOUR & FIVE ABOUT HERE]

In models (4) to (7), we added four forms of wealth measures. As described in the Measures section, we estimated many different functional forms of wealth. However, due to space constraints, we only present four of these models. In Model (4), wealth was measured with the log form of total net worth including home equity and a dummy variable indicating

whether the family had negative or zero wealth. In Model (5), we divided the total net worth (including the main home equity) into quartiles, with the lowest quartile treated as the omitted group in the model. As in most surveys, the very top of the wealth distribution is underrepresented in the PSID. The PSID families in the top wealth quartile represent upper middle class American families, with an average annual family income of about $87,000 in 1996. In Model (6), we divided the total wealth into the value of liquid assets (checking, saving accounts, bonds, stocks, mutual funds and so on) and illiquid assets (such as real estate, farms, or businesses). In Model (7), we examined in greater detail the (log) value of various types of assets (controlling for whether the family owns that type of assets), dividing them into five categories: (i) checking/saving accounts, CD, T-bills, (ii) stocks, mutual funds, investment trusts, (iii) main home equity, (iv) business and other real estates, and (v) debts. We also included dummy variables that indicate whether the family owns each type of asset.

When we added wealth measures in these four models, family income became non-significant though the R-squared increased only in the last models (7). Most of the variants of the wealth measures were not significantly associated with the test scores (including the ones noted in the measurement section but not presented in the tables). In the final model (8), we added the four mediators to the equations. The explanatory power of the model increased by 3 percent to an R-squared of .31; the value of debts was negatively associated with, and the level of activities parents did with the child was positively associated with, a preschooler's letter-word score. The F statistics from joint significant tests for the wealth variables, however, revealed that we could not reject the null hypotheses that these wealth coefficients were zero or that they were not different from each other. The child's gender, parent's occupational prestige, and mother's cognitive ability remained to have a significant association with a preschooler's letter-word

score. We tested for an interaction effect between race and wealth, and between child's gender and wealth, and found no significant interaction.

In Table 5, we also found that the black-white difference in the Applied Problem scores became non-significant once the child, parents, and family characteristics were added to the models (II) and remained non-significant in all subsequent models. Family income was not significantly associated with the Applied-Problem scores. The value of cash accounts was positively associated, and debts negatively associated, with preschooler's AP scores. We conducted further tests that indicated that these two coefficients were significantly different from zero and that the coefficients for each type of wealth holding were significantly different from one another. In model (8), we found that physical home environment and parental warmth were positively associated with the Applied-Problem scores. The negative association between debts and the AP scores remained.

[TABLE SIX ABOUT HERE]

Mediators

Next, we examined whether family wealth helped to explain the black-white test score gaps through their impact on the level of material deprivation and on parenting behavior. In this set of analyses, each mediator was treated as a dependent variable in a series of stepwise regressions, with race, demographic controls, income, and wealth variables added to the model sequentially. Again, we used many variants of wealth measures in our analyses but present only some of these models. As seen in Table 6, some of the wealth measures were significantly and positively associated with these mediators. The value of liquid wealth is positively associated with parenting behavior, both in terms of warmth and activities parents do with a child. Cash account was associated with parental warmth and stock holding is positively associated the

physical environment at home, though the value of a business or other real estates was negatively associated with home environment, perhaps suggesting a constricted consumption at home due to investment in other assets. Total net worth was positively associated with the level of activities parents and child do together. That said, race differentials in these mediators were only moderately reduced when family wealth measures were added to the model. The results for the cognitive stimulation are not presented here as none of the wealth variables were found to have a positive association with it.

[TABLE SEVEN ABOUT HERE]

School-aged Children

Tables 7 to 9 present results from a set of corresponding analyses for school-aged children. For older children, we included two additional mediators – whether the child attended a private school and the self-esteem of the child. Again, we see in Table 7 that the racial gap in both the reading and math scores became non-significant when measures for child, parental, and basic demographic characteristics were entered in the model. Grandfather's education, indicative of previous generation's SES, was positively associated with a child's reading score. Family income did not have a significant net effect on school-aged children's reading and math scores. As in previous tables, the race differential was not substantially reduced when family wealth was introduced to the models. When all the mediators were included in model (8), we found that cognitive stimulation, parental warmth and activities were positively associated with the child's reading scores. The association between stocks and reading scores became stronger. Again, we found that child's gender (girls had higher scores) and mother's cognitive ability is positively associated with a child's reading score. The effects of parental education and occupation were mediated by these materials and family processes factors. Adding these

mediators increases the explanatory power of the model by about three percent. In model 9 we added child's self esteem, which had a positive association with a child's reading scores. Note that as self esteem was assessed only for children aged 8 and above in 1997, hence, the sample size in this last model is substantially smaller than that in previous models.

[TABLE EIGHT ABOUT HERE]

The results for math scores in Table 8 show a rather different pattern. In Models (4) to (7), total net worth, above-median wealth, the value of liquid assets, and stock holding were positively associated with a child's math score. The magnitude of the coefficients is modest. 1% of increase in net worth is associated with an increase of one point in math scores; 1% increase in liquid assets is associated with half a point increase in math scores; and 1% increase in stock/mutual funds holdings is associated with .45 point increase. Being in the third and fourth quartile of the wealth distribution is associated with approximately a 3 and 3.5 points increase in math score respectively compare to being in a family in the lowest quartile of wealth, though these coefficients are only marginally significant. These are relatively large associations. To put them in context, a one-year increase in parental education is associated with 1.6 point increase in math score, and one point increase in mother's test score is associated with half of a point increase in a child's math score. Examining the standardized coefficients for model 4 (not shown in table) reveals that the beta for net worth is .22, relative to .26 for mother's verbal score, .17 for parents' education, .11 for family head's occupation, and .10 for child's gender. The value of debts, on the other hand, was negatively related to the math scores (1% increase lead to .3 point decrease in the math score). The F statistics from joint significant tests revealed that we can reject the null hypotheses that these wealth coefficients were zero. The coefficients for stocks/MF and debts were significantly different from those for wealth from other sources. The

increment in R-squared when these wealth measures were added, however, was trivial. It is not clear to us why the coefficients for math scores are larger than those for reading scores. One explanation may be that we controlled for mother's verbal skills but not her math skills (not available in the PSID data) but we could not test this hypothesis.

When all the mediators were added to model (9), the explanatory power of the model increases by about eight percents (from model 7) and the association between the math score and the value in stocks and debts remained. We also found the assets in business, farm, or other real estates has a negative association with the math score, perhaps again reflecting the constricted effect of these investments on children's current consumption. Cognitive stimulation, parental warmth, and a child's self-esteem were all positively associated with a child's math score.

[TABLE NINE ABOUT HERE]

Table 9 shows that the value of net wealth is positively associated with a child's private school attendance status, the cognitive stimulation provided to the child, and the activities parent and child did together. Compared to being in a family at the lowest quartile of wealth, being in the top quartile was positively associated with the cognitive stimulation a child received and a child's self-esteem (only marginally with private school attendance). Being in the third quartile is also positively associated with the physical home environment. The race coefficients became non-significant after the child's and parents' demographic variables were held constant. Adding wealth measures did not reduce the magnitude of the race coefficients further (results not shown). In most models, except those for cognitive stimulation, family income was not significantly associated with the mediators.

Instrumental Variable (IV) Regression Estimates

Of course, any wealth effects we detect could be biased due to family wealth's association with unobserved factors—such as future orientation, intelligence, investment savvy and so on. Though we have argued in the introduction that wealth parameter estimates—due to the important role of gifts, inheritances and differential returns to investments (i.e. windfalls) on asset levels—may be less affected by selection bias of this type, we do want to address this possibility head on. However, there is no good solution to this problem. Any factor causally related to wealth levels is probably, in some way, related to child outcomes; in other words, there is no perfect instrumental variable to test the relationships we posit. This said, in Table 10, we tested an "imperfect" instrument for wealth: inheritance (defined as any large gifts or inheritances of money or property worth $10,000 or more in the past ten years). We deployed two functional forms in our first stage regression: an indicator variable for receipt of any bequest over the previous ten years and the log form for total amount among those who had received (those with none received a zero on this variable). Other functional forms we attempted did not change our results. We present only estimates for older children (age 6 and above), of whom 12% lived in families that had received bequest. Very few families with preschool children had received any bequest (which makes inheritance a weak instrument for wealth) and the IV regression results show non-significant wealth effects for preschoolers.

[TABLES TEN AND ELEVEN ABOUT HERE]

As seen in Table 10, while the inheritance variables were strong in the first stage (F statistics=33.06), the instrumented "family wealth" variable in the second stage did not prove to be significant. Parents' education and cognitive skills, grandparent's education, the cognitive stimulation, and parental warmth were positively associated with both the reading and math scores. Likewise, in Table 11, we used the same IV framework to examine the impact of wealth

on our mediating variables. It proved marginally significant only for "parental warmth," however.

While it would have been nice to have shown that the effect of wealth is robust in this specification, the reader should keep in mind several mitigating factors. First, instrumental variable estimation is quite inefficient and thus require large sample sizes to obtain reasonable standard errors. The standard errors in our IV estimates were quite large (and our point estimates are in the right direction), reflecting that our sample size may be too limited to satisfy the demanding requirement. Second, many of the families in our sample were relatively young and had not received any bequest yet (only 12% have). Third, inheritance is most likely associated with a family death, which itself could have an independent, *negative* effect on child cognitive development, thereby biasing the instrumented parameter estimate downward. Thus, we do not take this lack of significance as conclusively dismissive of our OLS results. We also could not estimate the nonlinear function of wealth or examine how assets from different sources relate to children's test scores in IV models as we did in our OLS analyses.

DISCUSSION

We have advanced the literature on intergenerational transfer with a better understanding on the relationship between family wealth, income, family dynamics, and young children's cognitive development based on high-quality income and wealth history data from a national sample in a framework that incorporated extensive control variables and mediators. We have examined wealth from different sources and in different functional forms more carefully than previous research has and have demonstrated that total net worth masks the nonlinear

relationship and the varying impact of wealth from different sources. We also attempted to strengthen the causal inferences with the instrumental variable approach.

Our investigation of how family wealth affects young children's development yield little evidence in support of the hypothesis that family wealth mediates the black-white difference in children's cognitive ability. The ethnic differential in the test scores was essentially eliminated when family and child demographic covariates were held constant. This pattern is consistent with recent findings by Fryer and Levitt (2004) about the kindergarteners' test scores based on the ECLS-K data and suggests that further work is warranted to redress the differences between these two datasets, on the one hand, and results that come out of analyses of the NLSY, which show the race gap to be more tenacious. This can partly be attributed to the different assessment instruments used in the PSID and the ECLS-K that produce a smaller raw gap than the PPVT and PIAT used in the NLSY in the first place. These tests are also likely to be less racially biased than the PPVT. In addition, we included a large set of relevant parental, child, home environment and family interaction measures. Family income data in the PSID are of higher quality and the wealth data have fewer missing data than those in NLSY; both are measured over the child's entire childhood in our analyses, which is likely to capture more of the otherwise unobserved heterogeneity in previous studies. It is also possible that gains by black students in test scores in recent years during the time when recent data in ECLS-K and PSID-CDS were collected (in late 1990s) have reduced the test score gaps when compared to earlier years when previous studies based on NLSY and NCES data were conducted.

Despite our effort in constructing many variants of wealth measures, most of them did not have a significant association with a preschooler's test scores. This unexpected pattern of findings may partly be attributed to the fact that we controlled for an extensive set of parental

and family characteristics than does previous research—such as grandparents' education, parental occupational prestige, family income since birth, child's birth order, mother's test score, whether the mother received welfare assistance when she was pregnant with the child, mother's marriage history, and family dynamics that may have captured more of the otherwise unobserved heterogeneity.

For school-aged children, a stronger wealth association was found: liquid assets particularly those held in stocks/mutual funds were positively associated with a child's reading and math scores when all other covariates are held constant. What does the positive association between stock holdings and children's test scores represent? We speculate that this maybe partly due to a stronger future orientation or the financial savvy of parents who invest in these kinds of assets. Parents who own such assets also generally have a broader asset portfolio, owning other types of assets like cash accounts, home and cars, and more likely to have the highest level of wealth. We see some evidence of a nonlinear effect of wealth. Results from another set of analyses we conducted showed that ownership of three or more types of assets was positively related to children's test scores (results not shown).

We found a lack of significance when we deployed an instrumental variable strategy, which is not without its own limitations as discussed above. This overall weak effect of wealth on young children (consistent with findings in Phillips et al. 1998, Haurin 2000, and Corwyn and Bradley, 2003) may reflect the fact that for these relatively young families, most returns are from savings such as cash accounts and/or stocks/MF, which, in turn, require lowering current consumption. Under such circumstances, family wealth may or may not benefit a child's test scores when children are young while investing in other assets or save. A positive impact may occur if children work hard expecting that they will be able to attend college because their

parents save, or if parents who value college teach their children more skills at home and push them harder to do well in school (in this case the wealth effect is spurious).

Although we found that wealth had only weak association with children's cognitive skills in the presence of other factors, it is worth noting that family income had no net effect on children's test scores in any of the models consistent with findings by Mayer (1997). This argues for including wealth in considering the impact of family financial resources in future intergenerational studies of child development. However, in addition to being an indicator of financial resources, parents' efforts in accumulating wealth and their choice of what types of assets to hold may capture some unobserved psychological traits of the parents that themselves are positively associated with child outcomes. For example, the ability to accumulate wealth may reflect—rather than cause—unmeasured aspects of a beneficial home environment, positive parenting behavior, or a forward-looking orientation (i.e. a higher discount rate). Although we made an attempt to strengthen the causal inference between wealth and children's test scores with the instrumental variable approach, the results were nevertheless inconclusive. More work is needed in future studies to investigate the causal relationships.

One contribution of this paper was to examine the mediating pathways of wealth on children's achievement. In our OLS estimates, we found that a higher wealth level contributed to a higher quality home environment, better learning resources, and private school attendance for school-aged children. There was also some evidence that the value in cash accounts was positively associated with parental responsiveness/warmth for preschoolers, possibly through reducing the financial stress at home (though, of course, this relationship may reflect unobserved heterogeneity as well). For school-aged children, a wealth level in the top half of the distribution had a positive association with material resources and a child's self-esteem, which in turn, were

positively associated with math scores. Thus, these results lend some support for the hypotheses that wealth influences children's development indirectly through both the material deprivation and family stress pathways. (And even in the IV framework, parental warmth was positively affected by wealth levels.)

It is plausible that the family wealth effect may become stronger at the adolescent stage when children are more conscious of the differences in the quality of the learning environment, possessions, and the type of neighborhood in which a child resides. In young adulthood, wealth may become an even more critical factor in shaping one's path to college attendance, career success, or even the timing of marriage and choice of partners. We argue that while wealth may help smooth consumption on a more short-term basis, the presence of wealth over time in a family (or extended family) may have a stronger impact of engendering a sense of economic security, future orientation and ability to take risks among all family members, which, in turn, positively affects child development. Although wealth may not have a substantial short-term benefit in narrowing the black-white achievement gap among very young children, encouraging low-income families to accumulate wealth may foster a forward-looking attitude which may benefit children in the long run. The financial effects of wealth would more likely to be observed later in life when school financing becomes an issue. This argues for taking into account the developmental stages of children when considering the impact of family resources on child development.

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Table 1: Weighted Means for Total Family Income, Family Wealth, and Children's Test Scores, by Race

	White			Black		
	n	**mean**	**Std. Dev.**	**n**	**mean**	**Std. Dev.**
Family Income Variables (in 1997$)						
avg income since birth	1177	57,600	58,200	1045	26,500	13,100
log avg income since birth	1177	10.59	0.87	1045	9.89	0.55
Wealth Measures (in 1997$)						
Net Worth, not including home equity	1177	119,867.82	589,068.32	1045	13,559.68	34791.99
Net Worth, including home equity	1177	123,316.06	254,574.32	1045	23,638.37	39215.63
Log net worth, not including home equity	1177	8.56	4.94	1045	5.34	2.88
Log net worth, including home equity	1177	9.45	4.68	1045	6.03	3.00
% with zero or no wealth (not include home equity)	1177	0.15	0.44	1045	0.39	0.32
% with zero or no wealth (include home equity)	1177	0.11	0.39	1045	0.35	0.31
Illiquid assets						
% own home	1177	0.75	0.43	1045	0.42	0.50
Value of home equity	1177	52,031.49	101,675.71	1045	12,247.49	32,444.53
% own farm or business	1177	0.17	0.46	1045	0.01	0.07
Value of farm or business	1177	49,570.72	349,562.25	1045	1,061.2	18,782.24
% own other real estates	1177	0.17	0.47	1045	0.03	0.12
Value of other real estate	1177	27,960.99	211,945.91	1045	3,504.63	32,652.02
% own cars and other vehicles	1177	0.94	0.29	1045	0.65	0.31
Value of cars, vehicles	1177	13,938.30	17,443.54	1045	7,027.01	12,533.49
Liquid assets						
% own checking/savings account, CD, T-billl	1177	0.83	0.46	1045	0.33	0.30
Value of Checking/saving acct, CD, T-billl	1177	16,073.65	48,157.66	1045	2,498.26	12,567.94
% own stocks/Mutual Fund/IRA	1177	0.42	0.61	1045	0.08	0.18
Value of stocks/Mutual Fund/IRA	1177	35,335.50	223,231.07	1045	1,164.70	6,525.73
% had debts	1177	0.63	0.59	1045	0.36	0.31
Value of debts	1177	9,296.27	26,661.47	1045	3,308.61	10,008.17
Children's Achievement Scores						
Letter-Word Score (age 3-5)	288	102.10	16.21	254	95.45	13.62
Applied Problem Score (age 3-5)	285	107.22	19.26	257	92.70	17.94
Broad Math score (age 6-12)	640	110.22	18.88	579	98.65	16.13
Broad reading score (age 6-12)	644	109.61	17.35	584	97.54	15.81

Table 2: Correlation among Family Income, Wealth, and Children's cognitive Ability Measures

Race	BLKWHITE	INC97	LOGINC97	INCSINB	LINCSINB	WLTH941	WLTH942	LWLTH941	LWLTH942	Q3BMA_SS	Q3BRE_SS
BLKWHITE (1=black,0=white)	1										
Family income in 1997 (INC97)	-0.34479	1									
Log family income in 1997 (LOGINC97)	-0.36478	0.67791	1								
avg income since birth, in 97$ (INCSINB)	-0.36916	0.89069	0.61033	1							
log avg income since birth, in 97$ (LINCSINB)	-0.45089	0.68455	0.75034	0.79585	1						
94 wlth no home equity,in 97$ (WLTH941)	-0.14409	0.29127	0.18203	0.3001	0.21903	1					
94 wlth inclu home equity,in 97$ (WLTH942)	-0.2885	0.35734	0.22154	0.38256	0.27077	0.6812	1				
log 94 wlth no home equity,in 97$ (LWLTH941)	-0.34381	0.38642	0.41608	0.4296	0.53437	0.24522	0.48065	1			
log 94 wlth inclu home equity,in 97$ (LWLTH942)	-0.34966	0.38672	0.42105	0.43018	0.54917	0.21124	0.47326	0.86879	1		
broad math summation score (Q3BMA_SS)	-0.31272	0.33446	0.30296	0.35205	0.35125	0.12065	0.26575	0.27449	0.26533	1	
broad reading summation score (Q3BRE_SS)	-0.3041	0.31857	0.30516	0.34308	0.36149	0.06356	0.20509	0.27258	0.27391	0.71641	1

Note: All coefficients are significant at .001 level

Table 3: Weighted Means, SD, N, and Range of Other Constructs in the model

	White			Black		
	N	Mean	Std Dev	N	Mean	Std Dev
Demographic Controls--Child						
Age	1177	7.47	3.54	1055	7.57	1.81
% Girls	1177	0.49	0.62	1055	0.42	0.32
% Low Birthweight (Under 5.5 Lbs.)	1177	0.06	0.30	1055	0.15	0.23
Birth order	1184	1.90	1.16	1019	2.43	0.89
Demographic Controls—Parents						
Average Parental Education	1177	14.14	2.67	1053	12.58	1.35
Parents' Occupation Prestige	1161	42.69	20.61	1031	26.55	11.09
Whether Family Head Not Employed	1183	0.04	0.24	1049	0.20	0.26
Family Head Age	1177	37.80#	8.32	1054	37.26#	6.28
Cognitive Ability (mother's verbal test score)	937	33.47	5.04	832	27.72	3.36
Whether received AFDC at child's birth	1158	0.06	0.28	1004	0.33	0.30
Demographic Controls--Family						
Number of Children in the Family	1177	2.33	1.09	1055	2.79	0.89
% Intact two-parent	1177	0.67	0.58	1055	0.29	0.30
% Never married single-mother	1177	0.05	0.26	1055	0.44	0.32
% married once, now divorced, sep, wid.	1177	0.11	0.38	1055	0.17	0.25
% other	1177	0.17	0.46	1055	0.10	0.20
% in Metropolitan Statistical Area	1177	0.48	0.62	1037	0.39	0.32
Material Deprivation Measures						
Physical home Environment (0-4)	932	3.38	0.94	831	2.86	0.65
Cognitively Stimulating Materials (Z score)	1177	0.27	0.54	1056	-0.08	0.42
Ever Attended Private School	914	0.18	0.45	841	0.11	0.20
Family Stress/Process Measures						
Warm Parenting (0 to 4)	916	2.68	0.90	799	1.96	0.55
Activities with Child (0 to 4)	1177	1.43	0.82	1052	1.20	0.46
Child's Self Esteem						
	480	5.65#	1.06	428	5.63#	.54

Note: #: Group means are not significantly different between the two groups at .05 level, all others are significantly different

Table 4: Estimates on the Letter-Word Score for Children Aged 3-5 in 1997

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Black	-6.65***	3.06	3.79	3.89	3.88	4.08	3.19	3.56
	(1.66)	(2.10)	(2.08)	(2.01)	(2.06)	(2.08)	(2.16)	(2.19)
Girl		2.39	2.44	2.60	2.60	2.53	2.49	2.98*
		(1.40)	(1.39)	(1.38)	(1.38)	(1.39)	(1.47)	(1.48)
Part Edu		0.17	0.02	0.05	0.02	-0.10	0.05	-0.19
		(0.49)	(0.49)	(0.48)	(0.50)	(0.50)	(0.49)	(0.49)
Occupation		0.12**	0.10**	0.10*	0.10*	0.10**	0.14**	0.13**
		(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
Mother's score		0.78***	0.78***	0.80***	0.78***	0.75***	0.77***	0.75***
		(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.18)	(0.17)
Grandma edu		0.39	0.30	0.30	0.30	0.27	0.27	0.17
		(0.34)	(0.34)	(0.35)	(0.34)	(0.34)	(0.33)	(0.33)
Gramdpa edu		0.13	0.07	0.04	0.04	0.04	-0.21	-0.16
		(0.33)	(0.32)	(0.32)	(0.33)	(0.32)	(0.33)	(0.32)
Fam Income			2.32	1.98	1.86	1.74	2.69	2.31
			(1.23)	(1.38)	(1.30)	(1.34)	(1.51)	(1.60)
WEALTH								
Networth				-.15				
				(0.49)				
2nd Quartile					2.90			
					(2.15)			
3rd Quartile					2.50			
					(2.21)			
Top Quartile					3.27			
					(2.30)			
Liquid Asst.						0.24		
						(0.22)		
Nonliquid A.						0.19		
						(0.18)		
Checking/Sav							0.05	0.05
							(0.51)	(0.52)
Stocks/MF/CD							-0.82	-0.81
							(0.67)	(0.66)
Home Equity							0.23	0.21
							(0.18)	(0.17)
Business							0.20	0.19
							(0.26)	(0.26)
Debts							-1.11	-1.14*
							(0.61)	(0.57)
MEDIATORS								
Home envir.								1.47
								(1.05)
Stimulation								0.36
								(0.50)
Parent warmth								-0.83
								(1.03)
Activities								2.67*
								(1.35)
Observations	545	532	532	531	530	529	529	527
R-squared	0.03	0.24	0.25	0.25	0.25	0.25	0.28	0.31

Note: * significant at 5%; ** significant at 1%; *** significant at .1%, Robust standard errors in parentheses

The models also include the following covariates (but not shown in the table): whether low birth weight, birth order of the child, family head’s age, family structure, whether living in metropolitan area, dummy variables indicating whether own no assets, and missing indicators of mother’s test score and grandparents’ education.

Table 5: Estimates on the Applied-Problems Score for Children Aged 3-5 in 1997

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Black	-14.24***	-5.71	-4.53	-3.83	-4.73	-4.08	-1.45	-1.90
	(2.57)	(4.46)	(4.55)	(4.70)	(4.65)	(4.57)	(4.20)	(4.66)
Girl		0.68	0.75	0.68	0.76	0.74	0.18	1.33
		(1.99)	(1.99)	(1.95)	(1.91)	(1.99)	(1.42)	(1.98)
Part Edu		0.58	0.45	0.55	0.52	0.33	0.56	-0.03
		(0.60)	(0.61)	(0.61)	(0.63)	(0.59)	(0.48)	(0.64)
Occupation		0.18**	0.17**	0.17**	0.17**	0.17**	0.12	0.18**
		(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.07)	(0.07)
Mother's score		1.02***	1.02***	1.05***	1.04***	0.98***	0.79***	1.04***
		(0.22)	(0.22)	(0.22)	(0.22)	(0.22)	(0.19)	(0.22)
Grandma edu		0.37	0.30	0.32	0.29	0.27	0.71	0.02
		(0.46)	(0.45)	(0.46)	(0.47)	(0.45)	(0.38)	(0.25)
Gramdpa edu		-0.60	-0.64	-0.64	-0.63	-0.66	-0.42	-0.55
		(0.41)	(0.41)	(0.41)	(0.39)	(0.41)	(0.31)	(0.37)
Family Income			2.00	2.66	2.37	1.67	1.15	2.04
			(1.57)	(1.72)	(1.70)	(1.66)	(1.43)	(1.68)
WEALTH								
(1)Networth				-0.81				
				(0.53)				
(2)2nd Quartile					-1.38			
					(3.07)			
3rd Quartile					-0.85			
					(3.22)			
Top Quartile					-2.89			
					(3.61)			
(3)Liquid						0.24		
						(0.28)		
illiquid						0.00		
						(0.32)		
(4)Checking/Sav							0.22	0.15
							(0.44)	(0.43)
Stocks/MF/CD							0.33	0.16
							(0.24)	(0.22)
Home Equity							-0.41	-0.40
							(0.26)	(0.25)
Business/Fm							-0.38	-0.40
							(0.25)	(0.25)
Debts							-0.56*	-0.67*
							(0.28)	(0.28)
MEDIATORS								
Home envir.								2.48*
								(1.24)
Stimulation								0.01
								(0.88)
Parent warmth								2.17*
								(1.05)
Activities								2.22
								(1.58)
Observations	537	524	524	524	524	524	524	522
R-squared	0.10	0.26	0.27	0.27	0.27	0.27	0.27	0.32

Note: * significant at 5%; ** significant at 1%; *** significant at .1%, Robust standard errors in parentheses
The models also include the following covariates (but not shown in the table): whether low birth weight, birth order of the child, family head's age, family structure, whether living in metropolitan area, dummy variables indicating whether own no assets and missing indicators of mother's test score and grandparents' education.

Table 6: OLS Estimates on the Mediators for Children Aged 3-5 in 1997

	Physical Home Environment				Parental Warmth/Responsiveness				Parent Activities w/ Child			
	I	II	III	IV	I	II	III	IV	I	II	III	IV
Black	0.18	0.19	0.24	0.18	-0.48***	-0.44**	-0.37**	-0.39**	-0.20***	-0.18**	-0.17**	-0.18**
	(0.19)	(0.20)	(0.19)	(0.19)	(0.17)	(0.17)	(0.18)	(0.17)	(0.07)	(0.07)	(0.08)	(0.07)
Girl	-0.17	-0.17	-0.15	-0.17	-0.21	-0.22	-0.18	-0.19	-0.12**	-0.13**	-0.12**	-0.12**
	(0.15)	(0.15)	(0.15)	(0.15)	(0.13)	(0.13)	(0.13)	(0.13)	(0.06)	(0.06)	(0.06)	(0.06)
Par edu	0.16***	0.15***	0.13**	0.12**	0.11**	0.10**	0.07	0.07	0.02	0.02	0.02	0.02
	(0.05)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.02)	(0.02)	(0.02)	(0.02)
Occupation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01***	0.01***	0.01***	0.01***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)
Fam Income	-0.08	-0.11	-0.13	-0.10	-0.17	-0.17	-0.24	-0.22	0.03	0.06	0.05	0.05
	(0.15)	(0.15)	(0.16)	(0.15)	(0.16)	(0.15)	(0.14)	(0.14)	(0.06)	(0.05)	(0.06)	(0.06)
WEALTH												
1. Net worth	0.01				0.07				0.06***			
	(0.06)				(0.06)				(0.02)			
2. 2nd Quart		0.00				-0.14				-0.12		
		(0.23)				(0.21)				(0.09)		
3nd Quart		0.08				0.27				-0.06		
		(0.24)				(0.23)				(0.10)		
Top Quart		0.20				0.34				0.08		
		(0.27)				(0.26)				(0.11)		
3. Liquid			0.05				0.08***				0.02*	
			(0.03)				(0.03)				(0.01)	
illiquid			-0.01				0.00				-0.00	
			(0.02)				(0.02)				(0.01)	
4.Cash acct				0.05				0.07**				0.00
				(0.03)				(0.03)				(0.01)
Stock/MF/CD				0.04**				0.03				0.01
				(0.02)				(0.02)				(0.01)
Home Equity				-0.02				0.00				0.01
				(0.02)				(0.02)				(0.01)
Business/Farm				-0.05**				0.00				0.01
				(0.02)				(0.02)				(0.01)
Debts				-0.02				-0.01				-0.00
				(0.02)				(0.02)				(0.01)
Observations	701	702	701	701	701	702	701	701	678	679	678	678
R-squared	0.08	0.09	0.10	0.12	0.11	0.12	0.14	0.14	0.22	0.21	0.20	0.21

Note: Note: * significant at 5%; ** significant at 1%; *** significant at .1%, Robust standard errors in parentheses

Table 7: Estimates on the Broad Reading Score for Children Aged 6-12 in 1997

	(1)	(2)	(3)	(4)	(6)	(5)	(7)	(8)	(9)
Black	-10.93***	0.10	0.17	0.15	0.21	0.65	0.20	0.01	-2.03
	(1.04)	(2.26)	(2.27)	(2.32)	(2.30)	(2.32)	(2.33)	(2.30)	(2.58)
Girl		2.99***	2.99***	3.00***	2.99***	2.92***	2.97***	2.50***	2.24**
		(0.89)	(0.89)	(0.90)	(0.89)	(0.89)	(0.90)	(0.88)	(1.00)
Education		1.34***	1.31***	1.34***	1.29***	1.18***	1.17***	0.99***	0.27
		(0.30)	(0.32)	(0.32)	(0.32)	(0.32)	(0.33)	(0.33)	(0.36)
Occupation		0.10**	0.10**	0.10**	0.10**	0.10**	0.09**	0.07*	0.06
		(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)
Mom score		0.71***	0.70***	0.69***	0.71***	0.67***	0.67***	0.53***	0.67***
		(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.13)
Grandma edu		-0.28	-0.29	-0.29	-0.30	-0.30	-0.30	-0.32	-0.31
		(0.20)	(0.21)	(0.21)	(0.20)	(0.20)	(0.21)	(0.20)	(0.22)
Grandpa edu		0.70***	0.70***	0.69***	0.67***	0.70***	0.71***	0.62***	0.74***
		(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.24)	(0.25)
Fam Income			0.43	0.36	0.19	-0.17	-0.20	-0.58	-1.14
			(1.09)	(1.17)	(1.16)	(1.05)	(1.05)	(0.95)	(0.88)
Wealth									
1. Net worth				0.06					
				(0.33)					
2.2nd Quartile					-0.78				
					(1.33)				
3rd Quartile					1.83				
					(1.47)				
TopQuartile					0.87				
					(1.77)				
3.Liquid Asst						0.38			
						(0.21)			
Illiquid A.						-0.04			
						(0.15)			
4.Cash acct							0.16	0.14	0.24
							(0.18)	(0.17)	(0.19)
Stocks/MF/CD							0.24	0.23	0.39**
							(0.14)	(0.14)	(0.15)
Home Equity							0.03	0.02	0.01
							(0.11)	(0.11)	(0.12)
Business/farm							-0.04	-0.07	-0.12
							(0.13)	(0.13)	(0.14)
Debts							0.05	0.06	0.06
							(0.12)	(0.11)	(0.13)
MEDIATORS									
Private Schl								1.11	0.57
								(1.76)	(2.06)
Home envir.								0.70	0.67
								(0.58)	(0.65)
Stimulation								0.91***	1.12***
								(0.30)	(0.35)
Parent warmth								2.46***	2.12***
								(0.62)	(0.68)
Activities								-1.93***	-1.45*
								(0.71)	(0.78)
Self esteem									1.30**
									(0.62)
Observations	1228	1206	1206	1198	1206	1206	1198	1197	866
R-squared	0.10	0.27	0.27	0.28	0.28	0.28	0.28	0.30	0.35

Note: * significant at 5%; ** significant at 1%; *** significant at .1%, Robust standard errors in parentheses

The models also include the following covariates (but not shown in the table): whether low birth weight, birth order of the child, family head's age, family structure, whether living in metropolitan area, dummy variables indicating whether own no assets, and missing indicators of mother's test score and grandparents' education.

Table 8: Estimates on the Broad Math Score for Children Aged 6-12 in 1997

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Black	-12.12***	-1.48	0.05	3.97	0.29	1.14	-0.08	-0.36	-3.07
	(1.12)	(2.66)	(2.67)	(3.24)	(2.66)	(2.73)	(2.69)	(2.62)	(3.00)
Girl		-1.75*	-1.43	-3.84***	-1.45	-1.58	-1.29	-1.80*	-2.05*
		(1.00)	(1.00)	(1.28)	(1.00)	(1.00)	(0.99)	(0.98)	(1.11)
Education		2.14***	1.69***	1.58***	1.63***	1.50***	1.41***	1.19***	0.72*
		(0.33)	(0.35)	(0.47)	(0.35)	(0.35)	(0.36)	(0.36)	(0.41)
Occupation		0.13**	0.10*	0.13**	0.09*	0.10*	0.08	0.06	0.07
		(0.05)	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)
Mom score		0.22***	0.59***	0.54***	0.60***	0.55***	0.61***	0.43***	0.56***
		(0.05)	(0.12)	(0.16)	(0.12)	(0.12)	(0.12)	(0.12)	(0.14)
Grandma edu		0.08	-0.05	0.15	-0.06	-0.07	-0.06	-0.10	-0.12
		(0.11)	(0.23)	(0.31)	(0.23)	(0.23)	(0.23)	(0.22)	(0.25)
Grandpa edu		0.08	0.62**	0.14	0.57**	0.63**	0.63**	0.49*	0.62**
		(0.14)	(0.26)	(0.31)	(0.26)	(0.26)	(0.26)	(0.26)	(0.27)
Fam Income			1.18	1.76	0.57	0.10	0.34	-0.17	-0.52
			(0.86)	(1.30)	(0.83)	(0.76)	(0.79)	(0.75)	(0.77)
WEALTH									
1.Net worth				1.01**					
				(0.46)					
2.2nd Quartile					-0.53				
					(1.40)				
3rd Quartile					3.09				
					(1.58)				
Top Quartile					3.44				
					(1.88)				
3.Liquid						0.51**			
						(0.21)			
Illiquid						0.16			
						(0.17)			
4.Cash acct							0.14	0.09	0.18
							(0.18)	(0.18)	(0.19)
Stocks/MF/CD							0.45***	0.42***	0.55***
							(0.15)	(0.15)	(0.16)
Home Equity							0.19	0.19	0.11
							(0.12)	(0.12)	(0.13)
Business/Fm							-0.14	-0.16	-0.31**
							(0.13)	(0.14)	(0.15)
Debts							-0.30**	-0.28**	-0.29**
							(0.13)	(0.13)	(0.15)
MEDIATORS									
Private Schl								4.01**	3.40
								(1.83)	(2.12)
Home envir.								1.32**	1.31
								(0.65)	(0.72)
Stimulation								0.78**	0.92**
								(0.32)	(0.38)
Parent warmth								3.41***	2.53***
								(0.71)	(0.80)
Activities								-1.36	-0.62
								(0.78)	(0.89)
Self esteem									2.80***
									(0.76)
Observations	1219	1197	1197	1189	1197	1197	1189	1188	860
R-squared	0.10	0.23	0.25	0.26	0.25	0.25	0.26	0.29	0.34

Note: * significant at 5%; ** significant at 1%; *** significant at .1%, Robust standard errors in parentheses.
The models also include the following covariates (but not shown in the table): whether low birth weight, birth order of the child, family head's age, family structure, whether living in metropolitan area, dummy variables indicating whether own no assets and missing indicators of mother's test score and grandparents' education.

Table 9: Estimators on the Mediators for Children Aged 6-12 in 1997

	Private School Attendance				Physical Home Environment				Cognitive Stimulation			
	(I)	(II)	(III)	(IV)	(I)	(II)	(III)	(IV)	(I)	(II)	(III)	(IV)
Black	0.70	0.65	0.68	0.80	0.40**	0.39**	0.43**	0.42**	-0.68***	-0.64***	-0.61***	-0.57***
	(0.27)	(0.26)	(0.27)	(0.30)	(0.16)	(0.17)	(0.17)	(0.17)	(0.18)	(0.18)	(0.19)	(0.19)
Girl	0.91	0.92	0.89	0.87	0.04	0.06	0.04	0.05	0.31***	0.32***	0.31***	0.31***
	(0.23)	(0.23)	(0.22)	(0.21)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)	(0.11)
Education	1.01	1.02	1.01	0.97	0.02	0.02	0.02	0.00	0.23***	0.24***	0.23***	0.22***
	(0.08)	(0.08)	(0.09)	(0.08)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Occupation	1.00	1.00	1.00	1.00	0.01**	0.01**	0.01**	0.01**	-0.00	-0.00	-0.00	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Fam Income	1.34	1.33	1.42	1.27	0.09	0.11	0.04	0.02	0.52***	0.45***	0.46***	0.40***
	(0.41)	(0.40)	(0.49)	(0.41)	(0.13)	(0.13)	(0.13)	(0.13)	(0.14)	(0.14)	(0.14)	(0.14)
WEALTH												
1.Net Worth	1.31***				-0.01				0.05**			
	(0.12)				(0.02)				(0.02)			
2.2nd Quartile		0.66				0.00				-0.02		
		(0.33)				(0.18)				(0.20)		
3rd Quartile		1.52				0.38*				0.36		
		(0.77)				(0.19)				(0.19)		
Top Quartile		2.89				0.01				0.48**		
		(1.61)				(0.23)				(0.22)		
3.Liquid			1.09				0.02				0.04	
			(0.09)				(0.03)				(0.03)	
Illiqu			1.04				0.02				0.01	
			(0.05)				(0.02)				(0.02)	
4.Cash Acct				1.18**				0.03				0.05
				(0.08)				(0.02)				(0.03)
Stocks/MF/CD				1.01				0.03				0.01
				(0.03)				(0.02)				(0.02)
Home Equity				0.99				0.01				0.01
				(0.03)				(0.01)				(0.02)
Business/Fm				1.04				-0.02				0.01
				(0.03)				(0.02)				(0.01)
Debts				0.96				-0.02				0.00
				(0.03)				(0.02)				(0.01)
Observations	1503	1511	1511	1503	1503	1511	1511	1503	1503	1511	1511	1503
R-squared					0.08	0.08	0.08	0.09	0.30	0.30	0.29	0.30

Note: * significant at 5%; ** significant at 1%; *** significant at .1%, Robust standard errors in parentheses
Estimates from “Private school attendance” model are from logistic regression and those from the other models from OLS regression.

Table 9 (continues): Estimators on the Mediators for Children Aged 6-12 in 1997

	Parental Warmth				Parent Activities				Child's Self Esteem			
	(I)	(II)	(III)	(IV)	(I)	(II)	(III)	(IV)	(I)	(II)	(III)	(IV)
Black	-0.04	-0.05	-0.04	-0.06	-0.08	-0.08	-0.11	-0.08	-0.02	0.04	0.05	0.04
	(0.12)	(0.12)	(0.13)	(0.13)	(0.08)	(0.07)	(0.08)	(0.08)	(0.14)	(0.15)	(0.15)	(0.16)
Girl	0.03	0.03	0.03	0.04	-0.01	-0.01	-0.01	-0.01	0.00	0.01	0.01	0.00
	(0.09)	(0.09)	(0.09)	(0.09)	(0.05)	(0.05)	(0.05)	(0.05)	(0.08)	(0.08)	(0.08)	(0.08)
Education	0.05	0.05	0.05	0.04	0.02	0.02	0.03+	0.02	-0.00	-0.00	-0.01	-0.01
	(0.03)	(0.03)	(0.03)	(0.03)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Occupation	0.01**	0.01*	0.01**	0.01*	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00	-0.00
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Family Income	0.06	0.10	0.08	0.07	0.07	0.07	0.12**	0.09	0.06	-0.00	-0.00	-0.01
	(0.10)	(0.10)	(0.11)	(0.11)	(0.05)	(0.06)	(0.06)	(0.06)	(0.09)	(0.08)	(0.08)	(0.08)
WEALTH												
1.Net Worth	0.01				0.02**				0.02			
	(0.02)				(0.01)				(0.02)			
2.2nd Quartile		0.11				-0.02				0.15		
		(0.14)				(0.08)				(0.14)		
3rd Quartile		0.23				0.08				0.24		
		(0.15)				(0.09)				(0.15)		
Top Quartile		-0.04				0.11				0.30*		
		(0.18)				(0.10)				(0.15)		
3.Liquid Asst.			0.02				0.01				-0.00	
			(0.02)				(0.01)				(0.01)	
Illiq Asst.			-0.01				-0.02+				0.03	
			(0.02)				(0.01)				(0.02)	
4. Cash acct.				0.01				0.00				0.02
				(0.02)				(0.01)				(0.02)
Stocks/MF/CD				0.02				-0.00				0.01
				(0.01)				(0.01)				(0.01)
Home Equity				-0.00				0.00				0.01
				(0.01)				(0.01)				(0.01)
Business/Fm				-0.01				-0.01				-0.00
				(0.01)				(0.01)				(0.01)
Debts				-0.00				-0.00				-0.01
				(0.01)				(0.01)				(0.01)
Observations	1503	1511	1511	1503	1500	1508	1508	1500	876	883	883	876
R-squared	0.07	0.07	0.07	0.07	0.04	0.04	0.04	0.03	0.02	0.03	0.02	0.03

Note: * significant at 5%; ** significant at 1%; *** significant at .1%, Robust standard errors in parentheses

Table 10: Instrumental Variable (IV) Regression Estimates of Family Wealth on Children's Test Scores, Aged 6-12

	(1ST Stage) Log Net Worth	(2nd Stage) Reading	(2nd Stage) Math
Log inheritance amount	.64**		
	(.30)		
Has Not Received inheritance	6.11		
	(3.24)		
Log total net worth	-	0.38	0.17
		(2.03)	(1.90)
Whether black	-1.55***	0.64	.64
	(.50)	(3.99)	(4.27)
Whether Girl	.09	2.90***	1.53
	(.19)	(0.93)	(1.02)
Parents education	.02	1.35***	1.75***
	(.07)	(0.32)	(0.36)
Heads occupation	-.01	0.10	0.10
	(.01)	(0.05)	(0.06)
Head's Age	.05***	.10	.05
	(.01)	(.14)	(.14)
Mother's test score	.02	0.68***	0.57***
	(.02)	(0.13)	(0.13)
# children at home	-.27**	-2.14***	-1.13
	(.09)	(0.71)	(0.71)
Grandma's education	.07	-0.38	-0.16
	(.04)	(0.24)	(0.27)
Grandpa's education	-.01	0.72**	0.65*
	(.05)	(0.24)	(0.26)
Family income	1.74***	-1.02	-1.07
	(.16)	(3.51)	(3.41)
Constant	11.86***	57.89**	49.08**
	(1.73)	(26.06)	(24.44)
Observations	1205	1205	1196
R-squared	.34	0.27	0.24

Robust standard errors in parentheses
* significant at 5%, ** significant at 1%; *** significant at .1%
Other variables included in the equations (but not shown in the table): whether the child had low birth weight, birth order of the child, family structure, whether living in metropolitan area, and missing indicators of mother's test score.

Table 11: Instrumental Variable (IV) Regression Estimates of Family Wealth on Family Resources and Interaction Mediators, Aged 6-12

	1st Stage	2nd Stage					
	Log Net worth	Private school	Physical home env.	Cognitive stimulation	Parental warmth	Parent activity	Self Esteem
Log inheritance	.60*						
	(.29)						
Has Not Received inheritance	5.55**						
	(3.11)						
Log total net worth	--	-0.03	0.03	0.12	0.19+	0.04	-0.00
	--	(0.04)	(0.13)	(0.19)	(0.10)	(0.07)	(0.14)
Whether black	-1.50***	-0.07	0.58**	0.18	0.43	0.15	-0.02
	(.44)	(0.07)	(0.27)	(0.38)	(0.25)	(0.15)	(0.37)
Whether Girl	.13	0.00	0.12*	0.25***	0.05	-0.00	0.02
	(.17)	(0.02)	(0.06)	(0.09)	(0.06)	(0.04)	(0.06)
Parents education	.02	0.01	-0.03	0.22***	0.01	0.02	0.02
	(.06)	(0.01)	(0.02)	(0.04)	(0.02)	(0.01)	(0.02)
Heads occupation	-.01	-0.00	0.01**	0.01*	0.00	0.00	-0.00
	(.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Head’s Age	.06***	0.00	-0.01	-0.02	-0.01	-0.02***	0.01
	(.01)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Mother’s test score	.01	0.00	0.07***	-0.00	0.05***	-0.00	0.00
	(.01)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
# children at home	-.33***	0.00*	-0.01	-0.01	-0.02*	0.00	0.01
	(.08)	(0.00)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Grandma’s education	.05	0.00	0.02	-0.00	-0.01	0.00	0.00
	(.02)	(0.00)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Grandpa’s education	.07	0.09	-0.03	0.18	-0.31	-0.01	0.00
	(.02)	(0.07)	(0.24)	(0.37)	(0.20)	(0.14)	(0.25)
Family income	1.85***	-0.81	1.21	5.03	2.46	1.46	5.19***
	(.15)	(0.52)	(1.81)	(2.76)	(1.55)	(1.06)	(1.75)
Observations	1510	1510	1510	1510	1510	1507	883
R-squared	.34		0.42	0.20	0.15	0.02	0.01

Robust standard errors in parentheses
* significant at 5%, ** significant at 1%; *** significant at .1%