



Center for Social Development

GEORGE WARREN BROWN SCHOOL OF SOCIAL WORK

The Impact of Family Assets and Debt on College Graduation

Min Zhan

Deirdre Laneskog

University of Illinois at Urbana-Champaign

2013

CSD Working Papers

No. 13-36

Campus Box 1196 One Brookings Drive St. Louis, MO 63130-9906 • (314) 935.7433 • csd.wustl.edu



Washington University in St. Louis

Acknowledgments

Support for this study comes from the Charles Stewart Mott Foundation. Other funders of research on college savings include the Ford Foundation, the Citi Foundation, and Lumina Foundation for Education. The authors would like to thank Margaret Clancy, Chris Leiker, and Michael Sherraden for their very helpful review.

The Impact of Family Assets and Debt on College Graduation

Abstract

This study examines the influence of family financial assets and debt, both measured during the time of youth's college enrollment, on the chances of college graduation. Data come from the National Longitudinal Survey of Youth. Results from analyses controlling for a number of student, parental, and institutional characteristics indicate that family assets are positively related to the chances of college graduation among White and Black students; family debt is negatively associated with the odds of college graduation among Black students, but neither family assets nor family debt is related to the chances of college graduation among Hispanic students. Overall, results indicate that family assets and debt explain a small portion of racial/ethnic gaps in college graduation. Policy implications are considered.

Key words: *assets, college graduation, debt, race/ethnicity, income, National Longitudinal Survey of Youth*

Introduction

The economic benefits of a college degree can hardly be overstated. In 2010, those who held a college degree in the United States earned twice the income of high school graduates and three times the income of those without a high school diploma (Bricker, Kennickell, Moore, & Sabelhaus, 2012). Dramatic increases in college enrollment rates suggest a growing recognition among youth and their parents that college is important for achieving a secure future. Although enrollment increased by 11% in the decade from 1990 to 2000, it increased by 37% in the decade from 2000 to 2010 (U.S. Department of Education, 2012). This increase has also helped to boost the proportions of Blacks and Hispanics in the college-student population. In 1976, Black students comprised 9% of that population and Hispanics made up 3% of it. By 2010, Blacks represented 13.5% of the population and Hispanics represented 11.9% (Aud et al., 2010). Although these gains are significant, Black and Hispanic youth are still disproportionately underrepresented in college: They make up 16% and 18%, respectively, of all American 18-year-olds (U.S. Census Bureau, 2012, table 11). However, merely enrolling in college does not guarantee success; less than 40% of U.S. college students graduate in 4 years (College Board, 2012). Moreover, disparities in college enrollment persist in graduation rates: Approximately 40% of Black students and 50% of Hispanic students graduate from college within 6 years, but 62% of White students do so (College Board, 2012).

The rapidly rising financial costs of college serve as a significant barrier to college education. Between 2000 and 2010, those costs rose 42% at public universities and 31% at private universities (U.S. Department of Education, 2012). The average annual cost of attendance (tuition, fees, room, and board) for full-time college students is approximately \$20,000 at public schools and nearly \$40,000 at private institutions (U.S. Department of Education, 2012). Although many students benefit from scholarships, financial aid, and family contributions, few families have income and assets sufficient to pay for college. Thus, educational borrowing has grown by 39% in the past decade (Payea, Baum, & Kurose, 2013), and the percentage of U.S. households reporting outstanding student debt has risen from 6% in 1983 to 15% in 2007 (Dyner, 2009). The impacts of

rising costs and increasing debt are particularly burdensome for low-income and minority students (Elliott, 2012; Kim, 2007).

The recent economic recession, the decline in home values, and the corresponding increase in household indebtedness have further limited families' ability to pay for college. From 2007 to 2010, household incomes declined substantially, with minority families' incomes declining at a steeper rate than those of White, non-Hispanic families (Bricker et al., 2012). Similarly, median net worth declined substantially among all households but disproportionately among minority households. From 2005 to 2009, median net worth fell by 66% among Hispanic households (to \$6,325) and by 53% among Black households (to \$5,677); among White households, it declined by 16% (to \$113,149; Kochhar, Fry, & Taylor, 2011). It is likely that this disproportionate drop in wealth among minority households stems from the housing market collapse, because wealth in those households is much more likely to come from homeownership than from such other financial assets as savings or investments (Kochhar et al., 2011). Overall indebtedness—that is, the ratio of household debts to assets—also has increased significantly (Bricker et al., 2012; Bucks, Kennickell, Mach, & Moore, 2009; Dynan, 2009; Dynan & Kohn, 2007), as has the percentage of households with zero or negative assets (i.e., more debts than assets; Kochhar et al., 2011). The increase in household indebtedness is particularly marked among minorities (Dynan, 2009). Nearly one-third of all Black and Hispanic families reported zero or negative wealth in 2009 (Kochhar et al., 2011). Moreover, the gap in wealth between White families and their Black and Hispanic counterparts nearly doubled in the past decade. On average, White households now have 20 times the wealth of Black families and 18 times the wealth of Hispanic families (Kochhar et al., 2011).

Given the striking racial/ethnic disparities in family assets and debt, and in light of emerging theories and empirical evidence that show the importance of household assets in college education (see a review by Elliott, Destin, & Friedline, 2011), it is worthwhile to examine how family assets and debt are related to college graduation. It is also useful to assess the effects of assets and debt on racial and ethnic differences in college graduation.

In this study, we investigate correlates of parents' assets and debt at two points: at the time of their child's college enrollment and at his or her college graduation. We explore three research questions. First, are assets and liabilities associated with graduation? Second, are they associated with racial/ethnic disparities in graduation? And third, do the relationships of assets and liabilities with college education differ by race/ethnicity?

Although emerging research examines assets and youth's education, very little attention is paid to the impact of debt, to the association between assets and college graduation, or to Hispanic youth (see a review by Elliott et al., 2011). Two recent studies (Zhan and Sherraden, 2011a, 2011b) start to explore these issues, and the current research extends the studies in a couple of important ways. First, previous studies often measure parental assets during early childhood or adolescent years. The time around college enrollment is important because it is the period when youth and their families evaluate college options and how to pay for those options. Therefore, there is a need to understand how parents' assets and debt during their child's college enrollment are related to the youth's college graduation. Second, this study differs from previous research by using a sample of college students. As such, the study is also able to control for important student and institutional factors associated with college enrollment.

Literature Review

Theoretical assumptions

Impact of assets

The current study begins with the assumption that household assets exert considerable influence over a youth's college enrollment and graduation by enabling short- and long-term investments in his or her education. In the short term, household assets may play an important role in financing college education. More specifically, household liquid assets, which are readily converted to cash, are likely to be important financial resources for children's education (Orr, 2003; Yeung & Conley, 2008). They may ease the path to college enrollment by providing quick access to funds for college tuition and by lessening the need for educational loans. Nonliquid assets, such as a family home or business, may work indirectly to support college attendance by providing collateral for education loans (Nam & Huang, 2009).

In the long term, household assets, such as savings and an owned home, may affect children's college education by improving access to educational resources and by producing an environment that is conducive to learning (Williams Shanks, Kim, Loke, & Destin, 2010). The presence of household assets also limits the impact of unexpected financial crises, allowing families to support children's educational achievement even through challenging financial times. Furthermore, assets may indirectly influence children's education in several ways. They may encourage parenting behaviors (such as school engagement) that support children's education. They also may influence the educational expectations and aspirations that parents have for their children as well as those that youth have for themselves (Elliott, 2012; Elliott & Beverly, 2011; Zhan, 2006; Zhan & Sherraden, 2011a). All of these factors help to enhance general child development (e.g., cognitive skills; see, e.g., Zhan, 2006) and children's college readiness.

Impact of debt

In contrast, household debt might have more complicated relationships with children's education (Gruber, 2001; Nam & Huang, 2009). Families with debt have access to credit markets, which might provide necessary resources for children's education in times of economic difficulties (Mayer & Jencks, 1989; Sullivan, 2008). Parental access to credit may enable youth to enroll in and graduate from college. Those opportunities may not come to youth from families that lack such access. In addition, the ability to borrow may reduce the need for children to work at early ages, increasing their chances of remaining in school (Nam & Huang, 2009). Similarly, the ability to borrow might reduce the number of hours that college students must work to meet the costs associated with their education. Thus, access to credit may increase their chances of graduating. However, families with large amounts of debt may find it difficult to secure additional loans, and this may limit resources for children's college education. In addition, large amounts of debt harm physical and mental health (Drentea & Lavrakas, 2000; Jenkins et al., 2008).

Race, ethnicity, assets, and debt

The presence or absence of household assets may account for some portion of the racial/ethnic disparities in college graduation. Furthermore, college students from minority families may benefit

differently from household assets and debt. This could be due in part to differences across racial/ethnic groups in the compositions of assets and their associated returns (Brown, 2007; Carasso & McKernan, 2008; Choudhury, 2001–2002; Keister, 2000; Martin, 2009). For example, Whites are more likely to own risky, high-return assets (such as equities) than are Blacks and Hispanics (Brown, 2007; Choudhury, 2001–2002; Keister, 2000). Residential segregation and discrimination in the housing and lending markets may result in lower returns on housing assets held by minority families than on those held by their White counterparts (Oliver & Shapiro, 2006). Also, since the debt-to-assets ratio among Black and Hispanic families tends to be higher than that among White families (García, 2008; Wheary & Draut, 2007), debt may have a more detrimental effect on the college education of minority youth.

Empirical research

Much of the literature on assets and children’s educational achievement focuses on children’s elementary- and middle-school performance (math and reading scores up to age 14), high-school graduation, and college enrollment (Elliott et al., 2011). This research demonstrates a consistently positive relationship between family financial assets and children’s math scores (Campbell, 2006; Easton-Brooks & Davis, 2007; Loke & Sacco, 2011; Williams Shanks, 2007; Yeung & Conley, 2008; Zhan, 2006). It also shows that family assets are associated with children’s reading scores, albeit to a lesser extent (Williams Shanks, 2007; Yeung & Conley, 2008; Zhan, 2006). However, these associations vary considerably by the types of assets considered, the age of the child, and the family characteristics (e.g., income, race, and ethnicity). The literature is less clear about the association between family assets and children’s high school graduation; studies provide mixed evidence concerning high school graduation’s associations with family net worth (Destin, 2009), liquid assets (Nam & Huang, 2009), and homeownership (Green & White, 1997; Zhan & Sherraden, 2003).

Evidence on college attendance is somewhat clearer. Several studies show that household net worth is a significant predictor of attendance (Destin, 2009; Haveman & Wilson, 2007; Huang, Guo, Kim, & Sherraden, 2010; Kim & Sherraden, 2011; Morgan & Kim, 2006; Nam & Huang, 2009; Williams Shanks & Destin, 2009). However, findings are mixed on the importance of specific household assets, such as the home and equity. Some studies find no relationship between homeownership and college attendance (e.g., Nam & Huang, 2009); others find that homeownership and home equity are positively associated with college attendance (Elliott, 2009; Morgan & Kim, 2006). Several studies suggest that liquid assets, in particular, play an important role in college attendance (Huang et al. 2010; Jez, 2008; Nam & Huang, 2009, 2011; Zhan & Sherraden, 2011a). Perhaps the most interesting evidence in relation to the current study comes from research by Huang and colleagues (2010), who find that the timing of liquid assets, whether accumulated early in childhood or closer to college enrollment, may affect college attendance through a variety of different mechanisms. Although liquid assets accumulated early in a child’s life may increase the likelihood of his or her college attendance by influencing academic ability and achievement, liquid assets held in the years immediately preceding college may increase the likelihood of college attendance by influencing the household’s ability to fund college (Elliott et al., 2011).

Few studies address the role of assets in college graduation, but several of those that do find a positive correlation between net worth and college graduation (Conley, 1999, 2001; Haveman & Wilson, 2007); however, Nam and Huang (2009) find no significant relationship between the two. Zhan and Sherraden (2011a) find that liquid assets (such as savings) are associated with college

completion. Two studies (Kim & Sherraden, 2011; Zhan & Sherraden, 2011a) also find that nonfinancial assets are important predictors of college graduation.

There also is little research on household debt's relationships with children's education. A few studies report that household debt (including debt from credit cards, student loans, medical or legal bills, and personal loans) is negatively related to the reading and math scores of children in the household (Williams Shanks, 2007; Yeung & Conley, 2008). Nam and Huang (2009) identify a more complicated relationship between negative liquid assets (i.e., unsecured debt) and children's educational attainment. They find that the likelihood of graduating from high school is higher for children from families whose debt exceeds savings (i.e., negative liquid assets) than for children from families with no liquid assets. But children from families with negative liquid assets are no different in terms of college attendance and are less likely to graduate from college. Zhan and Sherraden (2011a, 2011b) find that consumer debt is negatively related to college enrollment and graduation, especially among Black and Hispanic families.

Existing studies on race/ethnicity and educational gaps focus on associations between household assets and Black–White gaps in test scores, but findings are not entirely consistent (Orr, 2003; Phillips, Brooks-Gunn, Duncan, Klebanov, & Crane, 1998; Williams Shanks, 2007; Yeung & Conley, 2008). Conley (1999) analyzes data from the Panel Study of Income Dynamics to measure the teenage and young-adult outcomes of individuals born since 1962. He finds Black–White differences in educational attainment (including high school graduation, college graduation, and grade repetition), labor-force participation, wages, welfare receipt, and teenage premarital childbearing. The magnitude of these differences declines dramatically, the differences cease to be statistically significant, or the relationships reverse direction if the models account for household assets.

Several recent studies also include Hispanic children. Kaushal and Nepomnyaschy (2009) examine children's participation in gifted programs, extracurricular activities, and grade retention, finding that Black–White and Hispanic–White differences operate largely through the influence of family assets (homeownership, net worth, and bank account ownership). Jez (2008) reports that disparities between White and minority children (Black, Hispanic, and Asian) in 4-year college attendance are statistically nonsignificant if estimated in models that control for net worth. Similarly, a recent study by Zhan and Sherraden (2011b) reports that household assets account for a substantial portion of Black–White gaps in college attendance and graduation as well as for a small portion of the Hispanic–White gap in college graduation.

Data and Methods

Data

Data for this study come from the main file of the National Longitudinal Survey of Youth (NLSY). Specifically, we use data from the NLSY's 1979 cohort and from the NLSY's Young Adult sample. The sample for the NLSY's 1979 cohort included 12,686 individuals who were between ages 14 and 22 in 1979. It oversampled minority youth and economically disadvantaged White youth. From 1979 through 1994, NLSY interviewed respondents annually. It conducted biennial interviews thereafter (Center for Human Resource Research, 2006). Beginning in 1994, NLSY also conducted biennial interviews with the adolescent children (ages 15–20) of the female respondents in the original NLSY sample, referring to these youth as “young adults.” The young adult survey includes questions

related to schooling, labor-market experience, education, physical and mental health, relationships, and fertility. There were 980 young adults in the original 1994 survey and over 6,000 in the 2008 survey. Data related to parental education, family income, and family assets come from the NLSY main file. All other variables in the current analyses come from the NLSY young adult data set. These two data sets are linked by identification numbers assigned to mothers.

The sample for the current study is drawn from the 1,278 young adults in the NLSY young adult sample who enrolled in the first year of college between 2000 and 2004. We measure their college graduation status in survey year 2010. The measure allows each youth at least 6 years to finish college. We exclude young adults from the sample if they reported college enrollment in 2010 ($n = 162$). We also exclude cases that lack a value for any of the variables in the analysis ($n = 201$). Thus, the final analytic sample for this study includes 915 college students.

Measures

Family assets and debt

The analyses employ two independent variables: the total dollar amount of family assets for a given year and the total dollar amount of family debt for a given year. Both are measured during the time of college enrollment (either in the enrollment year or in the year before the enrollment, since the NLSY collects information on family assets and debt from parents every 2 years). The total amount of assets is calculated as the total value of assets held in savings accounts, certificates of deposit, individual-retirement accounts, Keogh accounts, and tax-deferred plans, plus the market value of stocks, bonds, and mutual funds. The value of vehicle equity, equity in residential and nonresidential property, businesses, and farms is also included. We measure family debt as the total amount of debt linked to a family via the home, business, farm, and vehicle as well as the amount of money owed to creditors, hospitals, stores, and anyone else. Because distribution of these two variables is skewed, we use the natural log of these measures in regression models (to define the natural log, we recode each zero value as 1).

College graduation

The dependent variable in this study captures whether a youth completed a bachelor's degree by 2010. The NLSY's young adult survey assesses a youth's level of educational attainment by asking respondents to indicate the highest grade or year of school completed. In this study, we define a bachelor's degree as equivalent to 16 years of schooling. A dummy variable represents graduation status (1 = yes, 0 = no).

Control variables

Because personal and family characteristics have the potential to influence the chances of college graduation, we control for several demographic, social-economic, and academic characteristics of parents and youth. We include these control variables to rule out the possibility that the results might be biased by omitted variables. We also include them to rule out possible alternative explanations of variance in the dependent variable.

The demographic controls for youth include age, gender, race/ethnicity, marital status during college enrollment, and parental status during enrollment. Race/ethnicity is dummy coded (White, Black,

and Hispanic), and White sample members comprise the reference group in the regression analyses. Marital status is dummy coded into two groups: ever married during enrollment (coded as 1) and never married during enrollment (coded as 0). Similarly, parental status indicates whether a youth had a child at any point during the enrollment period (1 = yes, 0 = no).

The model also includes several variables that are related to a student's academic characteristics. A youth's academic performance in high school is measured with his or her average letter grade earned from classes during the last year of high school. It is measured with a dichotomous variable: Respondents are coded as 1 if their average grade was A or -A across classes in the last year of high school and as 0 otherwise. We also include a control for enrollment status (1 = full-time enrollment, 0 = part-time enrollment). Because only a small proportion of sampled youth attended private colleges (about 3%), the regression analysis does not distinguish between enrollment in public and private colleges. To examine the effect of education loans, we analyze responses to two questions that assess cumulative amounts of such loans taken during the period in which a student is enrolled in college. Both pertain to education loans in each survey year: (a) whether a student received a loan to cover any of the costs for college expenses and, (b) if the student did, the amount of all loans received in that year. To construct the variable for the cumulative amount of education loans, we add the amount from each survey year. In regression analyses, we also control for whether a student received any other financial aid (1 = yes, 0 = no).

Parental controls include mother's education status and total net income of parents (hereafter, family income) during the time of college enrollment (either the enrollment year or a year before the enrollment, since NLSY collects information on family income from the parents every 2 years). The NLSY measures the mother's education level with a question that asks whether she holds a bachelor's degree (i.e., completed at least 16 years of school). Mothers with a degree are coded as 1, and those without a degree are coded as 0. Because distribution of family income is skewed, the regression models use the natural log of this variable (i.e., we define the natural log by recoding zero values as 1).

Analysis

We conduct two sets of regression analyses. In the first set, we estimate how family assets and debt affect college graduation. We control for aforementioned student and parent characteristics. In order to understand the extent to which racial disparity in college graduation is related to differences in family assets and debt, we estimate three models, each with a different group of predictors. The first model includes only race/ethnicity. In the second model, control variables are added. Assets and debt are entered into the final model.

In the second set of regressions, we examine college graduation's associations with family assets and debt by race/ethnicity. To determine whether the relationships differ by race/ethnicity, we estimate separate logistic regressions with each of the three racial/ethnic groups.

Table 1. Sample Characteristics (Weighted)

Variables	Full sample (N = 915)	White (n = 399)	Black (n = 317)	Hispanic (n = 199)
Student characteristics				
Age in 2010 (years)***	28	27	28	28
Gender				
Female**	61	57	69	57
Marital status during enrollment				
Married	11	13	8	12
Parental status during enrollment				
Have child***	16	10	25	16
Avg. grade in last year of high school				
A or -A***	21	29	12	18
Institutional characteristics				
Public university	96	95	98	97
Enrollment status				
Full-time students**	82	87	80	76
% with education loan	49	52	51	39
Loan amount	9,668 (6,000)	12,215 (7,400)	7,710 (5,000)	6,710 (5,000)
Educational status in 2010				
Have bachelor's degree***	39	47	25	23
Family characteristics				
Mother's education				
Bachelor's degree or above**	15	17	11	8
Family income in dollars***	53,730 (45,786)	63,870 (58,100)	41,002 (33,300)	50,870 (42,333)
Family assets in dollars***	144,526 (92,000)	198,946 (158,340)	65,296 (24,700)	90,061 (46,389)
Family debt in dollars***	50,526 (33,000)	69,344 (55,000)	31,486 (8,000)	47,394 (32,000)

Note: Mean (median) is presented for continuous variables. Unless otherwise specified, results are presented as percentages.

* $p < .05$, ** $p < .01$, and *** $p < .001$ for racial/ethnic group differences.

Results

Sample characteristics

Table 1 details weighted descriptive statistics for the study sample and for each racial/ethnic group. The sample ($N = 915$) includes 399 White students, 317 Black students, and 199 Hispanic students. Their average age in 2010 was 28. During their enrollment, about 11% were married and 16% had at least one child. About 21% of youth had an average letter grade of A or -A in their last year of high school. Most youth enrolled full-time (82%) in public universities (96%), and about half (49%) received education loans during enrollment. As of 2010, only about 39% of youth in the study sample held a bachelor's degree.

The average total family income during the youth's college enrollment year is about \$53,730. The average value of family assets is about \$144,526, and that of family debt is \$50,526. About 15% of youth's mothers hold a bachelor's degree or more education.

Table 1 also shows differences in the sample characteristics across the three racial/ethnic groups. The proportion of female students is higher in the Black subsample than in the other racial/ethnic groups. Black college students are less likely than White and Hispanic counterparts to be married during college enrollment. However, minority college students, both Blacks and Hispanics, are more likely than White students to parent a child while enrolled in college. Twenty-one percent of the full sample reports having an average grade of A or -A during the last year of high school; the same is reported by 29% of White students, 18% of Hispanic students, and 12% of Black students. White students are much more likely to report holding a bachelor's degree in 2010 (47%) than are their Black (25%) and Hispanic (23%) counterparts. Hispanic students are less likely to take education loans (39% have loans) than are their White (52%) and Black counterparts (51%). The family income, assets, and debt of minority students, especially Black students, are lower than those of White students.

Logistic regression: Assets, debt, and racial/ethnic gaps in college graduation

Table 2 presents the results from logistic regressions examining the impact of family assets and debt on the odds of college graduation. Results from Model 1, which controls only for race/ethnicity, suggest that college students from Black and Hispanic families are less likely to graduate than are counterparts from White families. More specifically, White students are about 2.7 times more likely to graduate than Black students and about 2.9 times more likely than Hispanic students.

Inclusion of controls for student and family income and mother's education (Model 2) reduces the estimated gaps in college graduation across the groups, but differences remain statistically significant. White students' odds of graduating are about 2 times greater than those for Black and Hispanic students. Results from Model 2 indicate that older students are more likely to graduate and that parenting a child during enrollment reduces the likelihood of graduation. As expected, those with an average letter grade of A or -A during the last year of high school are more likely to graduate than are those with lower average grades, and those who enroll full-time have a higher probability of graduating than do those who enroll part-time. The students who received education loans and other financial aid are, respectively, more likely to graduate than are students without those supports. Having a mother who graduated from college increases the odds that a student will graduate, and students from families with higher incomes are more likely to graduate.

Model 3 includes controls for family assets and debt as well as the control variables from the two previous models. The results suggest that the inclusion of these controls further reduces the racial/ethnic disparities in college graduation but that the differences are still statistically significant. White students' odds of graduating are about 1.7 times greater than those for both Black and Hispanic students. Family assets are positively related to college graduation, and family debt is negatively associated with it. Interestingly, family income ceases to be a significant predictor of college graduation if family assets and debt are included in the model.

Table 2. Unstandardized Coefficients and Odds Ratios from Logistic Regression Models of College Graduation

Independent and control variables	Model 1		Model 2		Model 3	
	Coeff.	OR	Coeff.	OR	Coeff.	OR
Race/ethnicity						
White (reference group)						
Black	-0.98***	0.37	-0.73***	0.48	-0.55*	0.58
Hispanic	-1.07***	0.34	-0.72**	0.49	-0.52*	0.60
Youth characteristics						
Age			0.09*	1.09	0.07	1.07
Gender						
Female			0.22	1.25	0.26	1.29
Marital status						
Married			-0.34	0.71	-0.24	0.79
Parent status						
Having child			-1.23***	0.29	-1.67***	0.19
Avg. grade in last year of high school						
A or -A			1.19***	3.28	1.29***	3.64
Enrolment status						
Full-time students			1.81***	6.08	1.69***	5.44
Education loans (log)			0.19***	1.21	0.19***	1.21
Receiving other financial aid			1.48***	4.39	1.70***	5.48
Family characteristics						
Mother's education						
Mother with bachelor's degree or above			0.91**	2.48	0.86**	2.37
Log family income			0.45**	1.57	0.35	1.42
Log family assets					0.20**	1.23
Log family debt					-0.11**	0.90
X^2				322.6***		278.7***
df		2		12		14
N		915		915		915

Note: Coeff. = coefficient; OR = odds ratio.

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

Differential links of debt and college graduation by race/ethnicity

In order to further examine how interactions among assets, debt, and race/ethnicity influence the chances of college graduation, we analyze these relationships separately for each of the three racial/ethnic groups (Table 3). Results indicate that family assets have a positive impact on the chances of graduation among both White and Black students. In contrast, family debt has a negative impact on college graduation among Black students, and the magnitude of the association indicates that family debt hurts Black students' chances of graduating more than it hurts White students' chances. Family assets and debt are not related to the chances of graduation among Hispanic students.

Table 3. Unstandardized Coefficients and Odds Ratios from Logistic Regression: Models of College Graduation by Race/Ethnicity.

Independent and control variables	White		Black		Hispanic	
	Coeff.	OR	Coeff.	OR	Coeff.	OR
Youth characteristics						
Age	0.24**	1.27	0.03	1.03	-0.13	0.88
Gender						
Female	0.03	1.03	0.53	1.70	0.27	1.32
Marital status						
Married	-0.23	0.80	0.66	1.94	1.26	3.54
Parent status						
Having child	-2.38**	0.09	-1.27	0.28	-2.41*	0.09
Avg. grade in last year of high school						
A or -A	2.35***	10.50	1.40	4.06	0.11	1.12
Enrolment status						
Full-time students	0.90	2.46	2.40**	11.10	2.15*	8.60
Education loans (log)	0.22***	1.25	0.35***	1.43	0.16**	1.17
Receiving other financial aid	1.44*	4.23	2.10**	8.19	1.26	3.53
Family characteristics						
Mother's education						
Mother with bachelor's degree	0.98*	2.67	1.09	2.99	1.56*	4.76
Log family income	0.03	1.03	0.62	1.85	-0.31	0.74
Log family assets	0.28*	1.32	0.29*	1.34	0.03	1.03
Log family debt	-0.12	0.89	-0.21**	0.81	0.08	1.09
X^2	269.3***		296.5***		277.2***	
<i>df</i>	12		12		12	
<i>N</i>	399		317		199	

Note: Coeff. = coefficient; OR = odds ratio.

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

Among the control variables, age is associated with graduation only among White students, and full-time status has a positive impact on college graduation only among minority students. Having an average letter grade of A or -A during the last year of high school is positively related to White students' graduation, and the mother's education is positively related to college graduation among White and Hispanic students.

Discussion and Implications

Discussion

This study examines three research questions. First, it investigates the relationships of family assets and debt with college graduation. Estimating models that control for a wide range of student, parental, and institutional variables, it finds that family assets are positively related to college graduation and that family debt is negatively related to it. Both assets and debt are measured during the time of college enrollment. These findings support the view that resource constraints—both lack of sufficient assets and borrowing constraints—around the time of college entry are important barriers to college success (Ellwood & Kane, 2000; Kane, 1994, 1996). Previous research measuring parental economic resources during early childhood and early adolescent years similarly finds that

family assets and debt are associated with college graduation (e.g., Zhan & Sherraden, 2011a, 2011b). Altogether, a family's assets and debt appear to have both long- and short-term impacts on the chances that a youth will graduate from college.

Second, the study explores whether assets and liabilities are associated with racial/ethnic disparities in graduation. The analyses document that family assets and debt play roles in the racial/ethnic gaps in college graduation. However, racial/ethnic gaps in college graduation remain statistically significant even after assets and debt are included in regression models. Previous studies that examine similar relationships (e.g., Conley, 1999; Zhan & Sherraden, 2011b) also find that the Black–White gap in college graduation disappears after assets and debt are included in the regression models. As mentioned above, the timing of our measures for assets and debt differs from the timing of measurement in previous research, and this difference may contribute to the inconsistent findings. Overall, it seems that assets and debt measured during childhood or early adolescence play stronger roles in racial gaps in college graduation than do assets and liabilities measured around the time of college enrollment.

Third, the current study also examines whether the relationships of assets and liabilities with college graduation differ by race/ethnicity. Separate analyses of subsamples for each racial/ethnic group reveal some differences in associations with college graduation. Estimates from models with controls for other factors suggest that family assets have a similar, positive impact for White and Black youth but that the magnitude of debt's negative effect is stronger for Black youth than for their White counterparts. Further analysis indicates that the overall debt (i.e., the debt-to-assets ratio) is much higher among Black families (nearly 50%) than among White families (about 35%). In other words, debt looms larger for Black families, so they are less able to pay it off. This might explain why debt has a stronger negative impact on college graduation among Black students.

Somewhat surprisingly, family assets and debt have no measured impact on the college graduation of Hispanic youth. One possibility is that unobserved family characteristics, such as immigrant status, language skills, family responsibilities, and college selections, may matter more for the chances of college graduation among Hispanics (Fry, 2004).

It is important to note that that family income is positively related to college graduation (Table 2, Model 2) but that the association loses statistical significance after the regression model is expanded to include assets and debt. Consistent with a number of previous studies, this result suggests that family assets and debt might be more important than income in influencing youth's college success. This growing body of evidence also raises questions about traditional scholarship on inequality and educational achievement, as much of the theory and analysis in that research includes income but does not consider assets or debt.

Even in models that control for family income, assets, and debt, the results indicate that full-time enrollment, an average grade of A or -A in the last year of high school, educational loans, and mother's education are positively related to college graduation. Together these factors point to the persistent importance of student preparation and readiness, financial preparation, and parental education in the chances of completing college.

Limitations

We also point out several limitations of this study. The most important of these is that the study is not experimental research, although it does use a well-regarded longitudinal data set. Therefore, it is impossible to fully rule out alternative explanations. For example, there could be unobserved factors (e.g., residential environment, cultural factors, and parental capacities and motivations) that explain the levels of assets and debt as well as variation in college graduation. Furthermore, it would be helpful to include contextual factors that could broaden understanding of racial/ethnic gaps in college graduation, because variations in contextual conditions, such as neighborhood of residence, may affect returns to the assets held by minority families. Also, the data set used in this study does not contain a separate question on credit card debt, which has increased rapidly in recent years, particularly among minority and low-income families (García, 2008; Sullivan, 2008). Future analyses should consider credit card debt if information on it is available. Finally, the data from this study are self-reported by young adults and their parents. This self-reporting may affect the accuracy of some measured variables (e.g., family assets and debt).

Implications

Overall, the study's findings point to the importance of building parents' assets and reducing debt in efforts to improve college success for their children. Several relevant implications follow from these findings. First, results indicate that family assets and debt during the time of college enrollment are like such factors as academic readiness and mother's education; that is, they are related to chances of college graduation as well as to reductions in racial/ethnic gaps in college graduation. Therefore, it would be constructive if public policy and other college preparation and planning efforts were to facilitate savings for children's postsecondary education. A broadly available and promising vehicle is the college savings plan, or 529 plan (named after Section 529 of the Internal Revenue Code). Federal and state policies allow tax-free saving for college expenses in the 529 plans. Furthermore, because low-income families benefit less from 529 plans than do their more affluent counterparts, a number of states have developed programs that offer progressive savings-match incentives (Lassar, Clancy, & McClure, 2011) or have created partnerships between state 529 plans and other educational entities (Clancy & Miller, 2009). Most current 529 plans are regressive; they primarily benefit nonpoor families. But recent policy innovations suggest that this platform can be rebuilt in more inclusive and progressive forms. Those forms have the potential to bring in far more low-income and minority families by providing them with subsidies and supports.

Second, as discussed above, previous research indicates that assets developed over the long term in early childhood and adolescence play a substantial role in college success and in reducing racial/ethnic gaps in graduation. The magnitude of those effects is greater than the effect of assets measured around the college enrollment years. Thus, it might be beneficial to build college savings over time as a way to support child development in early childhood. Other research suggests that savings set aside for a child are positively associated with child educational outcomes (e.g., Charles, Roscigno, & Torres, 2007; Elliott & Beverly, 2011; Elliott & Nam, 2012). Child Development Accounts, incentivized accounts that encourage households to save for children's higher education, have positive potential in this area (Beverly, Elliott, & Sherraden, 2013). An experimental test currently underway in the state of Oklahoma involves random assignment of newborn children across the full state population. This experiment examines the long-term impact of Child Development Accounts on children's educational attainment and other developmental outcomes

(Nam, Kim, Clancy, Zager, & Sherraden, 2013; Sherraden & Clancy, 2008). The experiment tests a universal Child Development Account policy that automatically opens a college savings account for newborns at birth. In addition, the Oklahoma experiment oversamples minority (Black, Hispanic, and American Indian) families to ascertain whether the policy affects children from these families in the same way as or differently than it affects children in White families.

Third, the study findings also indicate that family debt decreases the probability of graduating from college, particularly the probability for Black youth. Black and other minority families are particularly vulnerable to fringe financial services, including nontransparent credit card practices and high-interest payday lending (Oliver, 2008). Thus, strengthening regulation of these financial practices and helping families to access quality credit in mainstream financial institutions appear to be high priorities. Such efforts offer a possible way to reduce debt owed by Black families and, as this study documents, to increase college graduation among children from these families.

References

- Aud, S., Hussar, W., Planty, M., Snyder, T., Bianco, K., Fox, M., ... Drake, L. (2010). *The Condition of Education 2010* (Report No. NCES 2010-028). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics. Retrieved September 10, 2013, from <http://nces.ed.gov/pubs2010/2010028.pdf>
- Beverly, S. G., Elliott, W., & Sherraden, M. (2013). *Accounts and assets: How Child Development Accounts may improve educational outcomes* (CSD Working Paper). St. Louis, MO: Washington University, Center for Social Development.
- Bricker, J., Kennickell, A. B., Moore, K. B., & Sabelhaus, J. (with Ackerman, S., Argento, R., Fries, G., & Windle, R. A.). (2012). Changes in U.S. family finances from 2007 to 2010: Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin*, 98(2). Retrieved September 10, 2013, from <http://www.federalreserve.gov/Pubs/Bulletin/2012/articles/scf/scf.htm>
- Brown, A. A. (2007). Pensions and risk aversion: The influence of race, ethnicity, and class on investor behavior. *Lewis & Clark Law Review*, 11(2), 385–406.
- Bucks, B. K., Kennickell, A. B., Mach, T. L., & Moore, K. B. (with Fries, G., Grodzicki, D. J., & Windle, R. A.). (2009). Changes in U.S. family finances from 2004 to 2007: Evidence from the Survey of Consumer Finances. *Federal Reserve Bulletin*, 95, A1–A55.
- Campbell, L. A. (2006, August 11). *The effects of parents' wealth on child achievement in mathematics and reading*. Paper presented at the annual meeting of the American Sociological Association, Montreal, Canada. Retrieved September 10, 2013, from http://citation.allacademic.com/meta/p_mla_apa_research_citation/1/0/3/9/0/pages103902/p103902-19.php
- Carasso, A., & McKernan, S.-M. (2008). Asset holdings and liabilities. In M. Sherraden & S.-M. McKernan (Eds.), *Asset building and low-income families* (pp. 33–66). Washington, DC: Urban Institute.
- Center for Human Resource Research. (2006). *NLSY79 user's guide: A guide to the 1979–2004 National Longitudinal Survey of Youth data*. Columbus, OH: Ohio State University, Center for Human Resource Research.
- Charles, C. Z., Roscigno, V. J., & Torres, K. C. (2007). Racial inequality and college attendance: The mediating role of parental investments. *Social Science Research*, 36(1), 329–352. doi:10.1016/j.ssresearch.2006.02.004
- Choudhury, S. (2001–2002). Racial and ethnic differences in wealth and asset choices. *Social Security Bulletin*, 64(4), 1–15. Retrieved September 10, 2013, from <http://www.ssa.gov/policy/docs/ssb/v64n4/v64n4p1.pdf>
- Clancy, M., & Miller, R. (2009). *Creative partnerships between GEAR UP and state college savings plans: Experience and policy potential* (CSD Policy Brief No. 09-23). St. Louis, MO: Washington University, Center for Social Development. Retrieved September 10, 2013, from <http://csd.wustl.edu/Publications/Documents/PB09-23.pdf>
- College Board, Advocacy and Policy Center. (2012). *The college completion agenda*. Retrieved September 10, 2013, from <http://completionagenda.collegeboard.org/graduation-rates-bachelor%E2%80%99s-degree-seeking-students>

- Conley, D. (1999). *Being Black, living in the red: Race, wealth, and social policy in America*. Berkeley: University of California Press.
- Conley, D. (2001). Capital for college: Parental assets and postsecondary schooling. *Sociology of Education*, 74(1), 59–72. doi:10.2307/2673145
- Destin, M. (2009). *Assets, inequality, and the transition to adulthood: An analysis of the Panel Study of Income Dynamics* (Issue Brief). New York, NY: Aspen Institute, Initiative on Financial Security.
- Drentea, P., & Lavrakas, P. J. (2000). Over the limit: The association among health, race and debt. *Social Science & Medicine*, 50(4), 517–529. doi:10.1016/S0277-9536(99)00298-1
- Dynan, K. E. (2009). Changing household financial opportunities and economic security. *Journal of Economic Perspectives*, 23(4), 49–68. doi:10.1257/jep.23.4.49
- Dynan, K. E., & Kohn, D. L. (2007). *The rise in U.S. household indebtedness: Causes and consequences* (Finance and Economics Discussion Series Working Paper). Washington, DC: Federal Reserve Board, Divisions of Research & Statistics and Monetary Affairs.
- Easton-Brooks, D., & Davis, A. (2007). Wealth, traditional socioeconomic indicators, and the achievement debt. *Journal of Negro Education*, 76(4), 530–541. Retrieved September 10, 2013, from <http://www.jstor.org/stable/40037226>
- Elliott, W., III. (2009). Children's college aspirations and expectations: The potential role of Children's Development Accounts (CDAs). *Children and Youth Services Review*, 31(2), 274–283. doi:10.1016/j.childyouth.2008.07.020
- Elliott, W., III. (2012). *Why policymakers should care about children's savings* (Creating a Financial Stake in College Report No. I). Washington, DC: New America Foundation. Retrieved September 10, 2013, from http://newamerica.net/sites/newamerica.net/files/policydocs/Elliott_I_final1.4.12.pdf
- Elliott, W., III, & Beverly, S. G. (2011). Staying on course: The effects of savings and assets on the college progress of young adults. *American Journal of Education*, 117(3), 343–374. doi:10.1086/659211
- Elliott, W., III, Destin, M., & Friedline, T. (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), 2312–2328. doi:10.1016/j.childyouth.2011.08.001
- Elliott, W., III, & Nam, I. (2012). Direct effects of assets and savings on the college progress of Black young adults. *Educational Evaluation and Policy Analysis*, 34(1), 89–108. doi:10.3102/0162373711425957
- Ellwood, D. T., & Kane, T. J. (2000). Who is getting a college education? Family background and the growing gaps in enrollment. In S. Danziger & J. Waldfogel (Eds.), *Securing the future: Investing in children from birth to college* (pp. 283–324). New York, NY: Russell Sage.
- Fry, R. (2004). *Latino youth finishing college: The role of selective pathways* (Report). Washington, DC: Pew Hispanic Center. Retrieved September 10, 2013, from http://www.pewtrusts.org/uploadedFiles/wwwpewtrustsorg/Reports/Hispanics_in_America/pew_hispanic_college062304.pdf

- García, J. A. (2008). *In the red or in the black: Understanding the relationship between debt and assets* (Borrowing to Make Ends Meet Report). New York, NY: Demos.
- Green, R. K., & White, M. J. (1997). Measuring the benefits of homeownership: Effects on children. *Journal of Urban Economics*, 41(3), 441–61. doi:10.1006/juec.1996.2010
- Gruber, J. (2001). The wealth of the unemployed. *Industrial and Labor Relations Review*, 55(1), 79–94. doi:10.2307/2696187
- Haveman, R., & Wilson, K. (2007). Access, matriculation, and graduation. In S. Dickert-Conlin & R. Rubenstein (Eds.), *Economic inequality and higher education: Access, persistence, and success* (pp. 17–43). New York, NY: Russell Sage.
- Huang, J., Guo, B., Kim, Y., & Sherraden, M. (2010). Parental income, assets, borrowing constraints and children's post-secondary education. *Children and Youth Services Review*, 32(4), 585–594. doi:10.1016/j.childyouth.2009.12.005
- Jenkins, R., Bhugra, D., Bebbington, P., Brugha, T., Farrell, M., Coid, J., ... Meltzer, H. (2008). Debt, income and mental disorder in the general population. *Psychological Medicine*, 38(10), 1485–1493. doi:10.1017/S0033291707002516
- Jez, S. J. (2008). *The influence of wealth and race in four-year college attendance* (Research and Occasional Paper Series Research Paper No. CSHE 18.08). Berkeley: University of California Berkeley, Center for Studies in Higher Education. Retrieved September 10, 2013, from <http://cshe.berkeley.edu/publications/docs/ROPS-Jez-Wealth-Race-11-13.pdf>
- Kane, T. J. (1994). College entry by Blacks since 1970: The role of college costs, family background, and the returns to education. *Journal of Political Economy*, 102(5), 878–911. doi:10.1086/261958
- Kane, T. J. (1996). College cost, borrowing constrains and the timing of college entry. *Eastern Economic Journal*, 22(2), 181–194.
- Kaushal, N., & Nepomnyaschy, L. (2009). Wealth, race/ethnicity, and children's educational outcomes. *Children and Youth Services Review*, 31(9), 963–971. doi:10.1016/j.childyouth.2009.04.012
- Keister, L. 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. doi:10.1006/ssre.2000.0677
- Kim, D. (2007). The effect of loans on students' degree attainment: Differences by student and institutional characteristics. *Harvard Educational Review*, 77(1), 64–100.
- Kim, Y., & Sherraden, M. (2011). Do parental assets matter for children's educational attainment?: Evidence from mediation tests. *Children and Youth Services Review*, 33(6), 969–979. doi:10.1016/j.childyouth.2011.01.003
- Kochhar, R., Fry, R., & Taylor, P. (2011). *Twenty-to-one: Wealth gaps rise to record highs between Whites, Blacks, Hispanics* (Social & Demographic Trends Report). Washington, DC: Pew Research Center. Retrieved September 10, 2013, from http://www.pewsocialtrends.org/files/2011/07/SDT-Wealth-Report_7-26-11_FINAL.pdf
- Lassar, T., Clancy, M., & McClure, S. (2011). *College savings match programs: Design and policy* (CSD Policy Report No. 11-28). St. Louis, MO: Washington University, Center for Social

- Development. Retrieved September 10, 2013, from <http://csd.wustl.edu/Publications/Documents/RP11-28.pdf>
- Loke, V., & Sacco, P. (2011). Changes in parental assets and children's educational outcomes. *Journal of Social Policy, 40*(2), 351–368. doi:10.1017/S0047279410000516
- Martin, L. L. (2009). Black asset ownership: Does ethnicity matter? *Social Science Research, 38*(2), 312–323. doi:10.1016/j.ssresearch.2008.11.003
- Mayer, S. E., & Jencks, C. (1989). Poverty and the distribution of material hardship. *Journal of Human Resources, 24*(1), 88–114. doi:10.2307/145934
- Morgan, S. L., & Kim, Y. (2006). Inequality of conditions and intergenerational mobility: Changing patterns of educational attainment in the United States. In S. L. Morgan, D. B. Grusky, & G. S. Fields (Eds.), *Mobility and inequality* (pp. 165–194). Stanford, CA: Stanford University Press.
- Nam, Y., & Huang, J. (2009). Equal opportunity for all? Parental economic resources and children's educational achievement. *Children and Youth Services Review, 31*(6), 625–634. doi:10.1016/j.childyouth.2008.12.002
- Nam, Y., & Huang, J. (2011). Changing roles of parental economic resources in children's educational attainment. *Social Work Research, 35*(4), 203–213. doi:10.1093/swr/35.4.203
- Nam, Y., Kim, Y., Clancy, M., Zager, R., & Sherraden, M. (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
- Oliver, M. L. (2008). Sub-prime as a Black catastrophe. *American Prospect*, September 20. Retrieved September 10, 2013, from <http://prospect.org/article/sub-prime-black-catastrophe>
- Oliver, M. L., & Shapiro, T. M. (2006). *Black wealth/White wealth: A new perspective on racial inequality* (2nd ed.). New York, NY: Routledge.
- Orr, A. J. (2003). Black-White differences in achievement: The importance of wealth. *Sociology of Education, 76*(4), 281–304. doi:10.2307/1519867
- Payea, K., Baum, S., & Kurose, C. (2013). *How students and parents pay for college* (Trends in Higher Education Series Analysis Brief). New York, NY: College Board Advocacy and Policy Center. Retrieved September 10, 2013, from <http://trends.collegeboard.org/sites/default/files/analysis-brief-how-students-parents-pay-college.pdf>
- Phillips, M., Brooks-Gunn, J., Duncan, G. J., Klebanov, P., & Crane, J. (1998). Family background, parenting practices, and the Black-White test score gap. In C. Jencks & M. Phillips (Eds.), *The Black-White test score gap* (pp. 103–145). Washington, DC: Brookings Institution.
- Sherraden, M., & Clancy, M. (2008). *SEED for Oklahoma Kids: Demonstrating Child Development Accounts for all newborns* (CSD Perspective). St. Louis, MO: Washington University, Center for Social Development. Retrieved September 10, 2013, from http://csd.wustl.edu/Publications/Documents/SEED_demonstrating_CDAs.pdf
- Sullivan, J. X. (2008). Borrowing during unemployment: Unsecured debt as a safety net. *Journal of Human Resources, 43*(2), 383–412. doi:10.1353/jhr.2008.0016

- U.S. Census Bureau. (2012). *Statistical abstract of the United States: 2012* (131st ed.). Washington, DC: Author. Retrieved September 10, 2013, from <http://www.census.gov/compendia/statab/>
- U.S. Department of Education, National Center for Education Statistics. (2012). Enrollment (Fast Facts). Retrieved September 10, 2013, from <http://nces.ed.gov/fastfacts/display.asp?id=98>
- Wheary, J., & Draut, T. (2007). *Who pays? The winners and losers of credit card deregulation* (Borrowing to Make Ends Meet Report). New York, NY: Demos.
- Williams Shanks, T. R. (2007). The impacts of household wealth on child development. *Journal of Poverty*, 11(2), 93–116. doi:10.1300/J134v11n02_05
- Williams Shanks, T. R., & Destin, M. (2009). Parental expectations and educational outcomes for young African American adults: Do household assets matter? *Race and Social Problems*, 1(1), 27–35. doi:10.1007/s12552-009-9001-7
- Williams Shanks, T. R., Kim, Y., Loke, V., & Destin, M. (2010). Assets and child well-being in developed countries. *Children and Youth Services Review*, 32(11), 1488–1496. doi:10.1016/j.childyouth.2010.03.011
- Yeung, W. J., & Conley, D. (2008). Black–White achievement gap and family wealth. *Child Development*, 79(2), 303–324. doi:10.1111/j.1467-8624.2007.01127.x
- Zhan, M. (2006). Assets, parental expectations and involvement, and children’s educational performance. *Children and Youth Services Review*, 28(8), 961–975. doi:10.1016/j.childyouth.2005.10.008
- Zhan, M., & Sherraden, M. (2003). Assets, expectations, and children’s educational achievement in female-headed households. *Social Service Review*, 77(2), 191–211. doi:10.1086/373905
- Zhan, M., & Sherraden, M. (2011a). Assets and liabilities, educational expectations, and children’s college degree attainment. *Children and Youth Services Review*, 33(6), 846–854. doi:10.1016/j.childyouth.2010.12.006
- Zhan, M., & Sherraden, M. (2011b). Assets and liabilities, race/ethnicity, and children’s college education. *Children and Youth Services Review*, 33(11), 2168–2175. doi:10.1016/j.childyouth.2011.06.024

Suggested citation

Zhan, M., & Lanesskog, D. (2013). The impact of family assets and debt on college graduation (CSD Working Paper No. 13-36). St. Louis, MO: Washington University, Center for Social Development. Retrieved from <http://csd.wustl.edu/Publications/Documents/WP13-36.pdf>