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Reducing the College Progress Gap between Low- to Moderate-Income (LMI) and High-Income (HI) Young Adults

Assets as an Understudied Form of Economic Capital

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Reducing the College Progress Gap between Low- to Moderate-Income (LMI) and High-Income (HI) Young Adults: Assets as an Understudied Form of Economic Capital

College progress identifies young adults who are "on course," that is, those who are currently enrolled in, or who have a degree from, a two-year college or a four-year college. However, little is known about the impact of these factors on low-to-moderate-income (LMI) young adults. Findings suggest LMI young adults with school savings are two and half times more likely to be on course than LMI young adults without savings. Policies such as universal Child Development Accounts (CDAs) that can help adolescents accumulate savings may be a simple and effective strategy for helping to keep LMI young adults on course.

Key words: *Wealth, assets, college attendance, college graduation, savings, Child Development Accounts (CDAs), college expectations, PSID, college progress*

Researchers at Georgetown University's Center on Education and the Workforce find that colleges and universities will not be able to produce enough graduates to meet the growing demand for college educated workers (Carnevale, Smith, & Srohl, 2010). Carnevale et al. (2010) forecast that 63% of all jobs will require at least some college by 2018 and that there will be a shortfall of 300,000 college graduates per year through 2018. Having a college degree not only translates into employment, but economic mobility. Among young adults without a college degree, 45% remain in the bottom quintile of the income distribution in adulthood; only 14% reach the top quintile (Haskins, 2008). In contrast, 16% of young adults with college degrees remain at the bottom of the income distribution while 41% make it to the top (Haskins, 2008). These findings suggest that attaining a college degree is increasingly important and can be a very effective path for achieving economic mobility. However, it is well recognized that attendance and graduation rates vary by socioeconomic status (SES) (Brown, Chingos, & McPherson, 2009; Haskins, 2008). For example, using 2005 Panel Study of Income Dynamics (PSID) data, Haskins (2008) finds that 11% of young adults with parents in the bottom income quintile attain a college degree compared to 53% of young adults with parents in the top income quintile, a gap of 42%. Moreover, findings suggest that existing economic disparities may actually help to maintain gaps in college attendance and graduation among adult children from low-income and high-income (HI) households (Haskins, 2008). For example, Haskins (2008) finds that young adults who grow up in households in the top quintile of income distribution are 81% more likely to remain there if they graduate college than if they do not.

Given the expected shortfall of educated workers, the importance of education for economic mobility, and disparities in college attendance and completion rates associated with income status, there is a growing need to understand the factors that promote college progress, particularly among low-to-moderate-income young adults. Researchers have identified a number of factors, including social capital (Porfeli, Wang, Audette, McColl, & Algozzine, 2009), cultural capital (Lareau, 2003),

economic capital (Coleman, 1988), and human capital (Paulsen, 2001) as being key predictors of college attendance generally. However, little is known about the relative impact of these factors on young adults from low-to-moderate-income (LMI) households. This study seeks to expand on previous research by examining the role that capital plays in predicting college progress among a sample of young adults from LMI households. Further, while education research has given considerable attention to income (Axinn, Duncan, & Thornton, 1997; Brooks-Gunn & Duncan, 1997; Duncan, Yeung, Brooks-Gunn, & Smith, 1998), assets are often excluded as a key variable in operationalizing economic capital in the literature on college attendance and graduation. In this study we include assets (net worth, parents' savings, and adolescents' savings) as a separate measure of economic capital.

We build on previous research by asking the following questions: (1) "Does having assets reduce the college progress gap between HI young adults and LMI young adults?"; (2) "Are net worth, parents' savings for adolescents and adolescents' school savings significantly related to college progress among separate samples of HI and LMI young adults?"; and (3) "Is there evidence to suggest that adolescents' school savings is more closely associated with college progress than either net worth or parental savings for adolescents?"

Review of Research on the Different Types of Capitals

Social Capital

A large body of scholarship suggests that social capital plays a crucial role in academic outcomes (e.g., Coleman, 1988; Israel & Beaulieu, 1988; Porfeli et al., 2009). Social capital is most commonly defined as the advantages that are embedded in social relationships (Coleman, 1988). Social capital has been conceptualized in various ways by different researchers. According to Perna and Titus (2005), the approach posited by Coleman (1991) is the most common form used in educational research. Coleman identifies parents' involvement as a key vehicle for building social capital. Similar to other forms of capital such as economic, human, and cultural capital, individuals can draw on social capital when needed to make them more productive, and to facilitate upward mobility (Coleman, 1988; DiMaggio & Mohr, 1985; Lamount & Lareau, 1988).

Cultural Capital

The link between cultural capital and educational attainment has also been proven by many researchers (e.g., Bourdieu, 1986; Hart & Risley, 1999; Lareau, 2003; McDonough, 1997). Bourdieu (1986), the originator of the term, defines cultural capital as the system of attributes, including knowledge of culture, language skills, and mannerisms that children derive from their parents. These attributes, he posits, help to shape an individual's class status. Bourdieu (1986) further posits that cultural capital has a social origin, as it is acquired in the home and the school through a set of cultural practices. Therefore, education and occupational prestige of the parents are often used as a proxy for cultural capital because they help shape the home learning environment. According to McDonough (1997), this implies that children from high-income households are more endowed with cultural capital than children from poorer households. For example, Hart and Risley (1999) and Lareau (2003) surmise that middle-class parents talk more to their young children than do working-class or poor parents. As a result of this, middle-class children have larger vocabularies as they start school, and consequently score higher on standardized tests (Hart & Risley, 1999).

Economic Capital

The role of economic capital, typically defined as family income, has long been established as having a positive impact on educational outcomes (Brooks-Gunn & Duncan, 1997; Coleman et al., 1966; Duncan, Yeung, Brooks-Gunn, & Smith, 1998; Yeung, Linver, & Brooks-Gunn, 2002). According to Sirin (2005), it is perhaps the most widely applied contextual variable in research on education. Researchers show that, as family resources available to children increase, their educational performance, high school graduation, and college attendance rates improve (Coleman et al., 1966). However, it is not merely the amount of the resources but the diversity of the resources that leads to greater academic achievement. As Coleman et al. (1966) posit, children from families of higher SES do better because they are exposed to a wider set of resources that they can tap into to promote learning. However, until recently this research has largely ignored assets as a type of financial resource with independent effects from income (Conley, 1999; Oliver & Shapiro, 2006; Sherraden, 1991).

Human Capital

Human capital is commonly defined as the skills, capabilities, knowledge, and adaptive behaviors that an individual accumulates through education, work, and other life experiences (Sunstein, 1997). According to Paulsen (2001), the relationship between human capital and college attendance is based on an economic model that weighs benefits and costs in a rational decision making process. For example, an individual may make the decision to enroll in college if he or she perceives that the benefit exceeds the cost of attending (Paulsen, 2001). From this perspective, the perception of benefits and costs is based on information the young adult has before enrollment. According to Stratton, O'Toole, and Wetzel (2007), one of the most effective pieces of information young adults have is their academic performance reflected by high school grades or standardized test scores.

Review of Research on Assets and Savings

Research on Assets and College Attendance

We find nine studies that examine the relationship between household assets and college attendance (Charles, Roscigno, & Torres, 2007; Conley, 2001; Destin, 2009; Elliott & Bevelry (in press); Haveman & Wolff, 2005; Huang, Guo, Kim, & Sherraden, 2010; Jez, 2008; Nam & Huang, 2009; Williams Shanks & Destin, 2009). All but two (Charles et al., 2007; Jez, 2008) of the nine studies use data from the Panel Study of Income Dynamics (PSID) and its supplements. Charles et al. (2007) use data from the National Educational Longitudinal Survey (NELS:88) and Jez (2008) uses data from the National Longitudinal Study of Youth (NLSY) 1997. Most of the research (eight out of the nine studies) on assets and college attendance include net worth. Net worth in these studies is measured as total family assets minus debt, although some researchers include home equity in the measurement of net worth (Elliott & Beverly, in press; Huang, Guo, Kim, & Sherraden, 2010; Nam & Huang, 2009), and others do not (Conley, 2001; Destin, 2009; Haveman & Wolff, 2005; Jez, 2008; Williams Shanks & Destin, 2009). A reason researchers may exclude home equity is because homes cannot be easily turned into cash and, when refinanced to pay for school, create debt (Shapiro, Oliver, & Meschede, 2009).

Conley (2001), Destin (2009), Williams Shanks and Destin (2009), and Haveman and Wilson (2007) find that net worth is positively related to college attendance. However, Jez (2008), Nam and Huang (2009), and Elliott and Beverly (in press) find that net worth is not significantly related to college attendance. It appears that findings are sensitive to the inclusion of a youth's academic achievement or cognitive ability. Studies that find that net worth is significant typically do not control for academic achievement or ability. All of the studies with insignificant results control for achievement or ability. Elliott & Beverly (in press) add net worth to the model after academic achievement, and thus the independent effects of academic achievement cannot be determined. Jez (2008) finds that net worth is significant in the basic model but is not significant once academic achievement is added to the model. Similarly, Nam and Huang (2009) find that net worth is significant until cognitive ability is added (i.e., whether adolescents are ever in a gifted program or ever repeated a grade).

Two of the studies include parental savings (Charles et al., 2007; Elliott & Beverly, in press). Charles et al. (2007) find that whether or not parents have savings for youth's college expenses is positively related to attendance at both two-year and four-year colleges, while the amount of school savings is positively related only to four-year college attendance. This study does not control for academic achievement or cognitive ability. Elliott and Beverly (in press) "also include parents' savings for adolescents and control for academic achievement. They find that parents' savings for adolescents does not have a significant association with college attendance when controlling for academic achievement.

In regards to college attendance, findings on income are mixed when controlling for assets. Among the nine identified studies that examine the assets/college attendance relationship, five find income is not significant (Conley, 2001; Elliott & Beverly, in press; Jez, 2008; Williams Shanks & Destin, 2009; Zhan & Sherraden, 2010); four studies find that income is significant when controlling for assets (Charles et al., 2007; Destin, 2009; Haveman & Wilson, 2007; Nam & Huang, 2009). Mixed results, coupled with the fact that all of the studies use a continuous form of income, make it difficult to determine if asset effects may vary by income level.

Research on Assets and College Graduation

Six studies examine the association between assets and college graduation (Conley, 1999, 2001; Haveman & Wilson, 2007; Nam & Huang, 2009; Zhan & Sherraden, 2010, 2009). All but one finds that assets are significantly related to college graduation. Four of the six studies use the PSID (Conley, 1999, 2001; Haveman & Wilson, 2007; Nam & Huang, 2009), and two use the NLYS79.

Among young adults aged 18-20, Conley (1999) finds that net worth is positively related to college graduation but income is not. In a later study of young adults aged 22-30, Conley (2001) finds that the relationship between net worth and college graduation is significant but at $p < .1$, and that income is significant. Haveman and Wilson (2007) find that net worth is significantly related to college graduation for youth aged 25-29. Further, they find a significant association between income and college graduation. Zhan and Sherraden (2009) examine the effects of assets on college graduation for young adults aged 23 to 26. They find that both liquid assets (such as savings, stocks, and bonds) and non-liquid assets (such as a home or business) are significantly related to college graduation, although income is not. In a more recent study of young adults, aged 23-26, Zhan and Sherraden (2010) find that liquid assets are positively related to college graduation for Whites, while non-liquid assets are positively related to college graduation for Blacks. Income is not significant. In

contrast, Nam and Huang's (2009) study finds that income is significant. In addition, Nam and Huang (2009) is the only study to find that neither net worth nor liquid assets are significantly associated with college graduation. This may be because theirs is the only study testing college graduation to include proxies for young adult's cognitive ability (i.e., whether ever in a gifted class or ever repeated a grade).

Summary of Existing Research

In sum, a growing body of research examines the relationship between different forms of assets and college attendance and/or graduation. Most of the research focuses on household assets, especially net worth. Findings appear to be sensitive to the inclusion of youth's academic achievement or cognitive ability. Studies that control for achievement or ability have consistently found that net worth is not related to attendance. Most of the research on college completion finds that assets are positively related to completion. However, the one study that controls for ability finds that net worth is not significant.

Theory and Research Questions

The different types of capital—economic, cultural, social, and human—are believed to augment young people's use of effort and ability, allowing them to accomplish more than they would be able to otherwise. From this perspective, if there are two young people with similar capacities for effort and ability but one of them has capital at their disposal, the young person with capital will be able to achieve a higher level of functioning (i.e., success) in school than the young person without capital. Accordingly, we hypothesize that having assets reduces the college progress gap between HI young adults and LMI young adults

Further, as stated in the introduction, studies examining the role of economic capital have largely ignored assets and savings as a type of economic capital in regards to college attendance and completion. One reason why assets have been largely ignored may be because income and assets have traditionally been viewed by economists as one concept (Sherraden, 1991). However, according to Sherraden (1991), assets represent an accumulated stock of resources kept through time, whereas income is a flow of resources used for current consumption. There is a growing body of evidence that supports the contention that assets and income are distinct concepts (e.g., Lerman & Mikesell, 1988; McKernan & Sherraden, 2008; Oliver & Shapiro, 2006; Schreiner & Sherraden, 2007; Sherraden, 1991;). For example, Lerman and Mikesell (1988) find that when income stemming from net worth (i.e., total household assets minus debts) is removed from total income, the correlation between income and net worth is 0.26. In addition, researchers find that asset inequality is more skewed than income inequality in America (Mishel, Bernstein, & Allegretto, 2007; Oliver & Shapiro, 2006; Sherraden, 1991). For example, according to Mischel, Bernstein, and Allegretto (2007), the top ten percent of Americans received less than half (42.5%) of all reported income in 2004. In contrast, the top ten percent of Americans in 2004 held 71.2% of assets (Mishel et al., 2007). The recognition in recent years of income and assets as separate concepts, combined with evidence that asset accumulation is highly skewed, has led to increased interest by researchers and policymakers in examining the role that assets may play in assisting youth—in particular, LMI young adults—to progress toward college graduation. Further, while evidence thus far is mixed, there is reason to believe that assets are positively related to young adults' college attendance and progress toward

completion. Therefore, we hypothesize that net worth, parents' savings, and adolescents' savings are associated with young adults being on course among HI and LMI young adults.

We also hypothesize that adolescents' savings is more closely associated with young adults' college progress than either net worth or parents' savings for adolescents among HI and LMI young adults. This hypothesis is based on evidence from behavioral economics, which suggests people use mental and physical accounting techniques to think about different pots of money in ways that affect when and how they use money (Kahneman & Tversky, 1979; Lea, Tarpy, & Webley, 1987; Thaler, 1985; Winnett & Lewis, 1995; Xiao & Anderson, 1997). In other words, money is not entirely fungible, with different accounts holding different purposes and meanings. These meanings may affect how people deposit money into accounts and how they use the money (Winnett & Lewis, 1995). Families, especially those with children, may have numerous household accounts that are designated for certain purposes and are subject to negotiation within the family (Winnett & Lewis, 1995). Some examples of these different accounts are Christmas accounts, vacation accounts, home repair accounts, school expense accounts for such things as clothing and books, college tuition accounts, new home purchase accounts, and so on. Further, parents are typically designated as the primary decision makers over these family accounts and thus maintain primary power over how they are used. However, not all money is held in household accounts. Some evidence suggests that young people are given latitude over their *own* money to spend and save as they see fit (Meeks, 1998). This latitude may result in an increased sense of perceived control, which is one of the most robust predictors of student resilience and academic success (Skinner, Wellborn, & Connell, 1990).

In sum, we propose the following three hypotheses: (1) having assets reduces the college progress gap between HI young adults and LMI young adults; (2) net worth, parents' savings, and adolescents' savings are associated with young adults being on course among HI and LMI young adults; and (3) adolescents' savings is more closely associated with young adults college progress than either net worth or parental savings among HI and LMI young adults.

Methods

Data

This study uses longitudinal data from the Panel Study of Income Dynamics (PSID) and its supplements, the Child Development Supplement (CDS) and the Transition into Adulthood supplement (TA). The PSID is a nationally representative longitudinal survey of U.S. individuals and families that began in 1968. The PSID collects data on such things as employment, income, and assets. Our independent variables related to households and parents are taken from 1999, 2001, and 2002 PSID data.

The CDS was administered to 3,563 PSID respondents in 1997 to collect a wide range of data on parents and their children, aged birth to 12 years. Specifically, it focused on a broad range of developmental outcomes across the domains of health, psychological well-being, social relationships, cognitive development, achievement motivation, and education. Follow-up surveys were administered in 2002 and 2007. Our independent variables for young adults are taken from the 2002 CDS because this is the first year data were collected on parents' savings for adolescents and youth savings. The TA supplement, administered in 2005 and 2007, measured outcomes for young adults

who participated in earlier waves of the CDS and were no longer in high school. Our outcome variables are taken from the 2007 TA.

The three data sets are linked using PSID, CDS, and TA map files containing family and personal ID numbers. The linked data sets provide a rich opportunity for analyses in which data collected at an earlier point in time (2002 or earlier) can be used to predict outcomes at a later point in time (2007), and stable background characteristics can be used as covariates. Because the PSID initially oversampled low-income families, both the descriptive and multivariate analyses are weighted using the last observed weight variable as recommended by the PSID manual (Gouskova, 2001).

Variables

Assets. Three different types of assets are examined: net worth, parents' savings for adolescents, and youth savings.

Net worth. Net worth in the PSID is a continuous variable that sums separate household values for a business, checking or savings accounts, real estate, stocks, and other assets, and subtracts out credit card and other debt. In this analysis, net worth does not include home equity. Shapiro, Oliver, and Meschede (2009) suggest that homes cannot be easily turned into cash, and when refinanced to pay for school, create debt. They go on to say that "homes have use value, and thus including home equity gives a false sense of security" (p. 2). Therefore, they suggest that home equity should not be included when measuring net worth. Net worth is averaged for 1994, 1999, and 2001, and inflated to 2002 price levels. Because net worth is skewed, the log form of net worth is used for regression analyses. Since some individuals had a negative value on the net worth variable, it is necessary to make adjustments to these numbers so that the natural log of net worth could be calculated. All net worth values that are less than or equal to zero are re-coded as one so that the natural log could be ascertained (e.g., Henretta & Campbell, 1978; Orr, 2003). Approximately 11% of the HI sample is affected and 28% of the LMI sample. In addition, data are top-coded at $1,000,000, affecting about 1% of both samples. A categorical net worth variable is used in descriptive analyses. The trichotomous variable has the following categories: negative net worth (< $0), modest net worth ($0~$10,000), and high net worth (>$10,000).[1]

Parents' savings for adolescents. Heads of households are asked in 2002 whether they (or another caregiver) have any money put aside for their youth in a bank account that is separate from other types of savings. They are also asked whether they (or another caregiver) have any money put aside specifically for their youth's college or future schooling, separate from other types of savings they may have for him or her. Responses to these two questions are combined to create a dichotomous variable indicating whether parents have any money put aside separately for their child.

Adolescents' school savings. Adolescents are asked in 2002 whether they have a savings or bank account in their name. If they have an account, they are also asked whether they have designated a portion of this savings for future school, like college. The school savings variable divides adolescents into two categories: (1) those who in 2002 have an account and designate a portion of the savings in the

[1] These categories are based on work done by Nam and Huang (2009).

account for school, and (2) both those who have an account but do not designate a portion of the savings in the account for school, and those with no account.

Outcome Variable. The outcome variable used in this study is college progress. College progress indicates whether youth are "on course" for achieving the American Dream via the education path in 2007. Youth who are currently enrolled in or have graduated from a two-year or four-year college are described as on course. Those who are not currently enrolled and do not have college degrees are described as off course.

Control Variables. Controls are broken down into five categories: demographic, social, cultural, economic, and human capital. Adolescents' race (Black/White), age in 2002 (continuous), and household size (continuous) are used as demographic variables.

Economic Capital. As proxies for the level of economic capital available to young adults, we use family income and parents' perceptions of cost of college. PSID family income data collected in 2007 for the 2006 tax year is used to disaggregate the data into a low-to-moderate-income sample (below $50,000), and a HI sample ($50,000 or above).[2] Further, in 2002, parents are asked if adolescents will pick a college based on cost (yes/no). Other types of economic capital examined in this study—net worth, parents' savings for their adolescent, and adolescents' savings—are discussed in the variables of interest section.

Cultural Capital. Two variables are used to capture an adolescents' language skill, class status, cultural knowledge, and the value he or she places on higher education. The first measure is the highest educational level of the head of the household. Heads' education is a continuous variable (1 to 16) collected in 2003, with each number representing a year of completed schooling. A categorical variable is also used, dividing heads into three groups: those who have a high school degree or less, those who have some college, and those who have a four-year degree or more.

The second is the amount of schooling the parent expects the child to have. Parents' expectations are considered an important variable that is associated with young adults' college progress (Kerckhoff, 1989; Smith, 1991). Parents' college expectations are measured by asking heads of household in 2002 how much schooling they expected their child to complete. Response categories included: (1) eleventh grade or less (2) graduate from high school (3) post-high school vocational training, (4) some college (5) graduate from a two-year college, (6) graduate from a four-year college, (7) master's degree, or (8) MD, JD, PhD, or other doctoral degree. Parents' expectations are recoded into a dichotomous variable. The reference group consists of parents who responded by selecting options 4, 5, 6, 7, or 8 (i.e., expect child to attend or graduate from college).

Social Capital. Two measures are included to capture the level of social capital available to the student. The first one is parent involvement expressed as the level of involvement parents have with their children (McNeal, 1999). We expect that higher parent involvement will be related to young adults being more likely to be on course (Sandefur et al., 2006). Parents' school involvement is measured by creating an index summing four responses in 2002: (1) how often parents encourage their child to read on his or her own, (2) whether the parent would contact child's teacher or

[2] LMI categories are determined based on the categories used by ACSFA (2002).

principal if the child's report card is worse than expected, (3) whether the parent would spend more time working with the child on his or her schoolwork if the child's report card is worse than expected, and (4) number of times during the last month the parent worked on homework with the child. High scores indicate higher levels of parent engagement.

The second variable used to measure social capital is peer expectations from 2002. Adolescents were asked how many of their friends planned to attend college: (1) none, (2) a few, (3) some, (4) many, and (5) almost all or all. Peer expectations are recoded into a dichotomous variable. The reference group consists of youth who responded by selecting options 4 or 5.

Human Capital. The study also uses two variables to measure human capital. One variable is the academic achievement of the student. Academic achievement is a combined math and reading score from 2002. The Woodcock Johnson (WJ-R), a well-respected measure, is used in the CDS to assess youth math and reading ability (Mainieri, 2006).

The second variable is adolescents' college expectations. Adolescents' college expectations were measured by asking them in 2002 how much schooling they expected to complete. Response categories included: (1) leave high school prior to graduation, (2) graduate from high school, (3) graduate from a two-year college, (4) graduate from a vocational school (5) attend a four-year college, (6) graduate from a four-year college, and (7) get more than four years of college. Adolescents' expectations are recoded into a dichotomous variable. The reference group consists of adolescents who responded by selecting options 3, 5, 6, or 7 (i.e., expect to attend or graduate from college).

Study Sample

The 2007 TA sample consists of 1,118 participants. The sample in this study is restricted to Black and White youth because only small numbers of other racial groups exist in the TA. The final weighted LMI sample consists of 495 young adults. In the LMI sample, young adults' ages ranged from 12 to 19 (mean =16; SD 1.6) in 2002, and young adults' ages ranged from 17 to 23 (mean = 20, SD = 1.6) by 2007. Household size ranged from 2 to 11 (mean = 3.99, SD = 1.3). The HI sample is similar to the LMI sample in mean age and household size. Other sample characteristics are summarized in Table 1.

Table 1: Descriptive statistics for low-to-moderate-income (LMI, N=495) and high-income (HI, N=508) samples

Categorical Variables	%HI	%HI On Course	%LMI	%LMI On Course
White	88	76	34	35
Black	12	54	66	29
Household size four and above	79	71	66	33
Household size below four	21	63	34	27
Young adults' age in 2002 16 or above	41	68	40	33
Young adults' age in 2002 below 16	59	70	60	28
Economic capital				
Parents perceive college as expensive	67	67	71	26
Parents perceive college as not being expensive	32	77	29	41
Cultural capital				
Head has four-year degree or more	39	89	11	49
Head has some college	26	62	18	40
Head has high school degree or less	35	59	70	26
Parents expect adolescent to attend or graduate college	85	77	56	46
Parents do not expect adolescent to attend or graduate college	15	31	44	12
Social capital				
Adolescents expect most peers to attend college	83	77	67	36
Adolescents do not expect most peers to attend college	17	45	33	15
Parents' school involvement is average or above	59	29	55	29
Parents' school involvement is below average	41	34	45	34
Human capital				
Adolescents' academic achievement is average or above	39	88	39	46
Adolescents' academic achievement is below average	61	60	61	24
Adolescents expect to attend or graduate college	92	75	76	37
Adolescents do not expect to attend or graduate college	08	33	24	12
Assets[a]				
Parents have savings for youth	65	77	42	39
Parents do not have savings for youth	35	60	58	25
High net worth (>$10,000)	76	75	53	38
Modest net worth ($0 - $10,000)	13	49	19	24
Negative net worth (<0)	11	57	28	26
Adolescents have savings for school[a]	55	83	32	46
Adolescents do not have savings for school	45	59	68	24
College progress				
On course	72	---	35	---
Not on course	28	---	65	---

	LMI			HI		
Continuous Variables	Mean	SD	Median	Mean	SD	Median
Young adults' age (2002)	16	1.56	16	16	1.80	16
Young adults' age (2007)	20	1.68	20	20	1.57	20
Parents' education level	12.14	2.49	12.00	14.09	2.08	14.00
Parents' school involvement	10.73	6.54	12.00	11.46	5.54	13.00
Household size	3.99	1.26	4.00	4.27	1.05	4.00
Academic achievement	200	28.76	195	221	32.82	216
2006 Family income ($)	26,057	13,485	26,330	137,799	159,729	101,110
Net worth[b] ($)	76,061	189,022	14,110	141,575	219,539	56,684
Log	7.38	4.81	9.43	9.70	3.79	10.88

Notes. College progress identifies young people who are "on course", i.e., those who are currently enrolled in, or who have a degree from, a two-year college, a four-year college, or a graduate program. LMI= below $50,000; HI = $50,000 or more.

[a]Savings rates among adolescents below age 16 (HI = 29%; LMI = 14) and adolescents age 16 or older (HI = 26%; LMI = 17) are roughly equal for both samples.

[b]Net worth dollar amount is top coded at $1,000,000 (affects 1% of the sample). The log of net worth is also bottom coded at $1(affects about 10%).

Analysis Plan

Stage one. In the case of survey data, common SAS syntax for analyzing descriptive data may not be appropriate (SAS Institute Inc., 2008). To account for the survey design of the PSID, SURVEYFREQ is used to determine the percentage of youth who ever attended college and the percentage of youth on track (SAS Institute Inc., 2008). In addition to analyzing basic descriptive statistics for the samples, we also analyze the percentage of young adults on course for each of the factors included in the study. Next we use two sample t-tests for proportions to determine if the proportion of HI young adults on course is significantly different from the proportion of LMI young adults on course.

Stage two. Multivariate analyses are used to examine the effects of savings and assets on college progress using PROC SURVEYLOGISTIC (SAS Institute Inc., 2008). Because a small portion of households have more than one young adult living in them, standard errors are adjusted by clustering them into the same family unit with the CLUSTER statement (SAS Institute Inc., 2008). More specifically, three logistic regressions are estimated in this study. Model 1 estimates the effect of assets on college progress among a separate sample of LMI young adults (N=495). LMI young adults in this study are defined as living in households with incomes below $50,000.[3] Model 2 estimates the effects of assets on college progress among a separate sample of HI young adults (N=508). HI young adults in this study are defined as living in households earning $50,000 or more. Moreover, we provide measures of predictive accuracy through the maximum rescaled R^2 (not equivalent to the variance explained in multiple regression model, but closer to 1 is also positive) and classification tables. The cutoff for the classification tables is 0.5.

Missing Variables

Prior to running logistic regressions, school savings are analyzed to determine if missing data are missing completely at random (MCAR). According to Little and Rubin (1987), data are MCAR when, given the observed data, the missingness mechanism does not depend on the unobserved data. To test for differences between included and excluded cases, all missing variables are transformed to a miss variable, and chi-square and t-tests are run. In regards to the LMI sample, there are no statistically significant differences on college progress between the cases excluded (approximately 32% excluded) and the remaining sample of cases. In regards to the HI sample, there are no statistically significant differences on college progress between the cases excluded (approximately 31% excluded) and the remaining sample of cases. Listwise deletion is used to eliminate cases with missing data.

Results

Stage One: Descriptive Analyses and Percentage Increase in College Progress

Descriptive Results

Columns one and three of Table 1 provide descriptive statistics for demographic, economic, cultural, social, human capital, and asset characteristics using the LMI and HI samples. Overall, young adults

[3] Low-to-moderate-income categories are determined based on the categories used by ACSFA (2002).

who live in LMI households are more likely to be Black (66%) and to live in households as adolescents with heads who have a high school degree or less (70%). In contrast, 88% of HI young adults are White, and 65% of HI heads have at least some college. Moreover, only 56% of LMI parents expect their child to graduate from college compared to 85% of HI parents. Similarly, while a high percentage of LMI young adults expect to attend or graduate college (76%), almost all HI young adults expect to graduate college (92%).

Turning to economic capital and assets, the median HI household earns nearly four times more income in 2006 ($101,110) than the median LMI household ($26,330). Similarly, the median HI household holds just over four times more in net worth ($56,684) than the median low-income household.[4] Further, HI parents (65%) are far more likely to have savings for their child than LMI parents (42%), and HI adolescents are far more likely to have savings of their own than LMI adolescents (32% versus 55%, respectively). In regards to college progress, young adults who live in HI households are more likely to be on course. Specifically, they are about two times as likely to be on course as LMI young adults.

Percent "On Course"

Columns two and four of Table 1 provide the percentage of young adults on course by demographic, economic, cultural, social, and human capital, and by assets for LMI and HI samples. Taken as a whole, young adults from HI households (72%) are more likely to be on course than LMI young adults (35%) whether or not they possess capital (see Table 1). Among HI White young adults, 76% are on course compared to 35% of LMI White young adults. In the case of young adults from households where the head has a four-year degree or more, 89% of HI young adults compared to 49% of LMI young adults are on track. In the case of parent school involvement, an equal percentage of LMI and HI young adults are on course whether parents have average or above average involvement (29%) or whether they have below average involvement (34%).

With respect to assets and savings, among young adults with parents who have savings for them, 77% of HI young adults are on course in comparison to 39% of LMI young adults. Among young adults whose parents have high net worth, 75% of HI young adults and 39% of LMI young adults are on course. Among young adults with school savings as adolescents, 83% of HI young adults are on course compared to 46% of LMI young adults.

The College Progress Gap between HI and LMI Young Adults

By and large, when HI and LMI young adults do not have a type of capital (e.g., economic or cultural capital), HI young adults are more likely to be on course than LMI young adults (see Table 2). All gaps (i.e., the difference in the percent of HI and LMI young adults on course) in college progress are statistically significant with the exception of parents' school involvement, which is the same for HI and LMI families (see Table 2). The largest gap in college progress is a 41% gap between HI and LMI young adults who have heads who perceive that college is expensive. The smallest gap (21%) is between HI and LMI young adults who do not expect to attend or graduate college. In the case of school savings, the gap is 35%.

[4] Unlike income, net worth is top coded at $1,000,000, reducing the level of net worth inequality.

Generally, when HI young adults do not have capital and LMI do have capital, the gap in college progress between HI and LMI young adults is reduced (see Table 2). The largest remaining gap in college progress is between HI and LMI young adults who have heads who perceive that college is expensive as adolescents (41% down to 26%). In the case of head's education, peer expectations, and academic achievement, however, the gap between HI and LMI is no longer significant, although a gap remains. Moreover, in the case of parents' expectations and adolescent's expectations, LMI young adults are actually more likely to be on course than HI young adults. When LMI young adults have parents who expect them attend or graduate college they are 15% more likely to be on course than HI young adults who have parents who do not expect them to attend or graduation college. In regards to adolescent's expectations, the gap went from 21% to -4%. However, the gap is not statistically significant (see Table 2).

When we account for the influence of assets and savings, the college progress gap is reduced. Accounting for net worth reduces the gap from 31% to 21%, accounting for parents' savings reduces the gap from 35% to 21%, and accounting for adolescents' school savings reduces the gap from 35% to 13%. With respect to net worth and parental savings, the gap between LMI and HI young adults approaches significance at $p < .1$. In contrast, the gap between the percent of LMI and HI on course is not significant.

In sum, the overall pattern suggests that HI young adults are more likely to have economic, cultural, social, and human capital as adolescents. Moreover, young adults who have high amounts of individual and household assets are more likely to have grown up in a HI household. When both HI young adults and LMI young adults do not have capital, HI income young adults are on course at rates much higher than LMI young adults. However, when HI young adults do not have capital and LMI young adults do, the gap in college progress is generally reduced. In the case of parents' and adolescents' college expectations, the gap is actually reversed with a higher percent of LMI young adults on course than HI young adults. With respect to our first hypothesis, having assets reduces the college progress gap between HI young adults and LMI young adults; that is, the gap in college progress is reduced when net worth, parents' savings, and adolescents' school savings are considered. However, the gap remains significant for net worth and parents' savings, while the gap is no longer significant for adolescents' school savings.

Table 2: The college progress gap between high-income (HI, N=508) and low-to-moderate-income (LMI, N=495) young adults[a]

Type of Capital	Gap in College Progress When Neither HI or LMI Have a Type of Capital		Gap in College Progress When HI Does not Have a Type of Capital and LMI Does	
	%	*t(df)*	%	*t(df)*
Economic capital				
Parents' perception of cost of college	41***	3.10(828)	26****	5.04 (762)
Cultural capital				
Heads have four-year degree or more	---	---	10	1.09 (930)
Heads have some college	---	---	---	---
Heads have high school degree or less	33****	3.58(859)	---	---
Parents' college expectations	31***	2.75(781)	-15**	-2.17 (789)
Social capital				
Adolescents' peer expectations	30****	3.73(699)	9	.558 (774)
Parents' school involvement	0	---	0	---
Human capital				
Adolescents' academic achievement	36****	4.02(881)	14	1.28 (987)
Adolescents' college expectations	21***	2.91(702)	-4	-1.02 (725)
Assets				
Parents' savings for adolescents	35****	3.64(809)	21*	1.77 (857)
High net worth (>$10,000)	---	---	19*	1.92(980)
Modest net worth ($0 – $10,000)	---	---	---	---
Negative net worth (<0)	31****	3.47(913)	---	---
Adolescents' school savings	35****	3.71(717)	13	.851 (763)

Source: Weighted data from the Panel Study of Income Dynamics and its supplements.
Notes. College progress identifies young people who are "on course," that is, those who are currently enrolled in, or who have a degree from, a two-year college, a four-year college, or a graduate program. LMI= below $50,000; HI = $50,000 or more. t = t-test. df = degrees of freedom.
[a]Percentage on course for HI and LMI used to calculate differences are provided in Table 1.
* p <.10; ** p < .05; *** p < .01; **** p < .001

Stage Two: Multivariate Analysis

Multivariate Results for the Low- to Moderate-Income (LMI) Sample (Below $50, 000)

Appendix A and B contain correlation matrices for all independent variables for the LMI and HI samples.

Model 1 estimates the independent effects of assets on college progress for LMI young adults after controlling for demographic, economic, cultural, social, and human capital (see Table 3). Approximately 43% of the variance in college progress is explained. With a cutoff of 0.5, the classification table indicates that the model correctly predicts 68% of the cases. The accuracy of the prediction for young adults being on course (sensitivity = 42.3%) is not as accurate as young adults being off course (specificity = 78.7%).

Household size, parents' college expectations, and academic achievement have a statistically significant association with whether young adults are on course. For each one-person increase in household size, the odds of being on course increase by 48% *(odds ratio = 1.48, p = .009)*. Young adults whose parents expected them to graduate from college as adolescents are approximately three times as likely to be on course than young adults whose parents did not expect them to graduate from college (*odds ratio =3.14, p = .01*). For each one-point increase in academic achievement, the odds of being on course increase by 2% *(odds ratio = 1.02, p = .009)*.

Peer expectations and adolescents' college expectations both approached significance at $p < 1$. Young adults who expected many, almost all, or all of their peers to attend college as adolescents are approximately two times as likely to be on course than young adults who did not expect many, almost all, or all of their peers to attend college (*odds ratio =2.35, p = .08*). Young adults who expected to graduate from college as adolescents are approximately five times as likely to be on course than young adults who did not expect to graduate from college (*odds ratio =5.05, p = .051*).

In the sample of LMI young adults, adolescents' school savings remains statistically significant. Young adults who had school savings are nearly two and half times as likely to be on course than those who did not have accounts or who had accounts but did not designate some savings for school as adolescents (*odds ratio = 2.56, p = .02*).

Multivariate Results for the High-Income (HI) Sample ($50,000 or more)

Model 2 estimates the independent effects of assets on college progress for HI young adults after controlling for demographic, economic, cultural, social, and human capital (Table 3). Approximately 40% of the variance in college progress is explained. Head's education has a statistically significant association with whether young adults from HI households are on course. With a cutoff of 0.5, the classification table indicates that the model correctly predicts 77% of the cases. The accuracy of the prediction for young adults being on course is more accurate (sensitivity = 87.5%) than the prediction of young adults being off course (specificity = 52.0%).

Young adults' age in 2002 and parents' education level have a statistically significant association with whether young adults are on course. For each one-year increase in young adults' age in 2002, the odds of being on course decrease by 21% (*odds ratio =.79, p =.04*). For each one-year increase in head's education level, the odds of being on course increase by 31% (*odds ratio =1.31, p =.006*). In addition, young adult's peer expectations approach significance at $p < .1$. Young adults who expected many, almost all, or all of their peers to attend college as adolescents are approximately two times as likely to be on course than young adults who did not expect many, almost all, or all of their peers to attend college (*odds ratio =2.29, p = .050*).

Among the variables of interest, log of net worth is statistically significant. For each one-point increase in log of net worth, the odds of being on course increase by 14% (*odds ratio = 1.14, p = .004*).[5]

[5] Minimum log net worth is 0 and the maximum is 13.82.

Table 3: Predictors of being on course among the low-to-moderate-income (LMI) and high-income (HI) samples

Items	Model 1: LMI (N=495)			Model 2: HI (N=508)		
	B	*S.E.*	*O.R.*	*B*	*S.E.*	*O.R.*
Demographics						
Black	0.518	0.539	---	-0.367	0.374	---
Household size	0.393***	0.149	1.48	0.133	0.224	---
Young adults' age in 2002	-0.171	0.140	---	-0.235**	0.115	0.79
Economic capital						
Parents' perception of college as expensive	-0.162	0.471	---	-0.241	0.498	---
Cultural capital						
Heads' education	0.034	0.093	---	0.267***	0.097	1.31
Parents expect youth to graduate college	1.146**	0.461	3.14	0.557	0.480	---
Social capital						
Adolescents expect most peers to attend college	0.854*	0.496	2.35	0.827*	0.423	2.29
Parents' involvement in school	-0.043	0.059	---	-0.019	0.054	---
Human capital						
Adolescents' academic achievement	0.022***	0.008	1.02	0.015	0.010	---
Adolescents expect to attend or graduate college	1.619*	0.831	5.05	0.965	0.653	---
Assets						
Parents' savings for adolescents	-0.230	0.387	---	0.397	0.321	---
Log of net worth	-0.002	0.044	---	0.127***	0.044	1.14
Adolescents' school savings	0.41**	0.418	2.56	0.317	0.334	---
Max-Rescaled Pseudo R^2	.43			.40		
N	335			351		

Source: Weighted data from the Panel Study of Income Dynamics and its supplements.
Notes: College progress identifies young people who are "on course," that is, those who are currently enrolled in, or who have a degree from, a two-year college, a four-year college, or a graduate program. S.E. = robust standard error. O.R. = odds ratio. LMI= below $50,000; HI = $50,000 or more.
*$p < .10$; **$p < .05$; ***$p < .01$; ****$p<.001$.

Summary

With respect to the second research question, controlling for other factors, both net worth and adolescents' school savings are positive, strong, and significant predictors of college *progress* soon after high school in the sample. However, we did not expect findings to vary by income level. Net worth is significant in the HI sample, and adolescents' savings is significant in the LMI sample. Further, parents' savings is not a significant predictor of college progress in either the HI or LMI samples.

In response to our third research question, which states that adolescents' school savings is more closely related to young adults' college progress than household assets, results are mixed. In the case of young adults in the LMI sample, adolescents' school savings appears to be more important than household assets. However, in the case of young adults in HI households, household assets appear to matter more than adolescents' school savings.

It should also be noted that—controlling for many other variables—among LMI young adults, household size, parents' college expectations, and academic achievement are significantly related to college progress, while adolescents' peer expectations and adolescents' college expectations approach significance at $p < .1$. Moreover, among HI young adults, age in 2002 and head's education is significantly related to college progress, while peer expectations approach significance at $p < .1$.

Discussion and Conclusion

The belief that an ordinary citizen can turn the American Dream into reality through the use of effort and ability is embedded in the history and culture of the United States. Education, which increasingly means a college degree, has long been seen as a path for achieving the Dream. The growing importance of receiving a college degree has heightened the need to understand the factors that promote college progress. Social, cultural, economic, and human capital have been identified by researchers as being key predictors of college attendance and graduation. However, little is known about the relative impact of these factors on young adults from low-to-moderate-income (LMI) households. Moreover, assets are often not included as a form of economic capital in research on college progress. In this study we examine the relationship between the different types of capital, assets, and whether LMI young adults are on course (i.e., currently enrolled in or have a degree from a two-year college, a four-year college, or a graduate program).

In line with previous findings, basic descriptive data reveal that LMI young adults have less economic, cultural, social, and human capital than HI young adults. More specifically, while almost all HI young adults expect to attend college (92%), only 76% of LMI young adults expect to attend college. The finding that HI young adults have higher expectations than LMI young adults is consistent with previous literature (Mau, 1995). The gap is even wider when parent expectations are considered. Only 59% of LMI parents expect their adolescent to graduate from college compared to 85% of HI parents. These findings are similar to those of Lippman et al. (2008). They find that 83% of adolescents with parents earning more than $75,000 and 70% of adolescents with parents earning between $50,001 and $75,000 expected to attain a four-year degree or more, compared to 51% of those earning $25,000 or less and 56% of those earning $25,001 to $50,000 (Lippman et al., 2008). Moreover, the mismatch between adolescents' expectations (76%) and parents' expectations for adolescents (59%) is consistent with previous research as well (Mau, 1995). In the bivariate and multivariate analyses, low expectations by parents and their adolescents prove to be important factors for understanding LMI young adults' college progress.

Regarding income, we find that in 2007, only 35% of LMI young adults are on course compared to 72% of HI young adults, a gap of 37%. Using 2005 PSID data, Haskins (2008) finds that 11% of youth with parents in the bottom income quintile attain a college degree, compared to 53% of children with parents in the top income quintile, a gap of 42%. The higher percent of LMI and HI young adults on course in this study may be because Haskins (2008) does not measure college progress, which not only includes young adults who have graduated but also those currently enrolled in college; he only includes youth who have graduated. Another important difference is how we measure income levels. We use $50,000 or more (HI) and below $50,000 (LMI), but Haskins (2008) uses quintiles. Lastly, Haskins (2008) uses graduation data from 2005, while we use data from 2007. Despite these differences, the gap is similar. Moreover, the general finding that income is associated with being on course is in line with previous research (see e.g., Haskins, 2008; Sandefur et al., 2006).

In the case of assets, we find that LMI young adults are more likely to live in negative net worth households, their parents are less likely to have savings for them, and they are less likely to have school savings of their own as adolescents. This is also consistent with previous research (Lippman et al., 2008; Mishel et al., 2007; Oliver & Shapiro, 2006).

In regards to the first research question, which asks if having capital reduces the college progress gap between HI young adults and LMI young adults, our findings generally suggest that it does. With respect to economic capital, while the percentage of parents who perceive that college is expensive is similar for both HI (67%) and LMI (71%) young adults, high college costs appear to affect the college progress of LMI youth (26% on course) more than HI youth (67% on course)—a gap of 41%. This gap is statistically significant. The finding that LMI students' college progress appears to be even more sensitive to college prices than HI is consistent with college choice literature. For example, McPherson and Schapiro (1998) estimate that a $150 net cost increase (in 1993-1994 dollars) will result in a 1.6% reduction in enrollment among low-income students.

In this study we use two measures of cultural capital—head's education and parents' expectations. Consistent with previous research, descriptive findings generally suggest that young adults who have parents with a four-year degree or more are far more likely to be on course than young adults whose parents have a high school degree or less. Moreover, bivariate analyses suggest that head's education level reduces the college progress gap between LMI and HI young adults. Similarly, consistent with previous literature, parent's college expectations appear to be a key factor for reducing the college progress gap and even reversing it (Kerckhoff, 1989; Smith, 1991). When parent expectations are considered, HI young adults are nearly three times as likely to be on course as LMI young adults. However, when HI young adults do not have parents who expect them to graduate college and LMI young adults do, LMI young adults are more likely to be on course than HI young adults.

In regards to social capital, findings are inconsistent with previous research with respect to parents' school involvement. Parent's school involvement did not reduce the college progress gap. There is no difference in parents' school involvement between LMI and HI parents. It may be that parents' school involvement is not directly related to college progress. McNeal (1999) finds that parents' involvement has a stronger relationship with behavioral problems (such as truancy and dropping out) than it does with cognitive outcomes. Alternatively, it may be how parents' school involvement is measured in this study. Whereas Sandefur et al. (2006) focus on whether parents talk to children about their homework, activities in school, and their studies, we focus on whether parents assist children with reading, doing homework, or whether parents talk with teachers or principals. It may be that parents are more hands on when adolescents are having problems in school already. For example, the child does poorly in reading so the parent spends more time with them reading or talking with teachers about their performance. Further, Sandefur et al. (2006) suggest that, "discussions about school between parents and children give life to parental expectations for educational attainment" (p. 535). The finding that adolescents' peer expectations reduce the college progress gap is consistent with previous research.

We use academic achievement (combined math and reading scores) and adolescents' expectations as proxies for human capital. Consistent with previous research on academic achievement, bivariate techniques suggest that academic achievement reduces the college progress gap when LMI young adults have average or above average achievement and HI young adults have below average achievement. According to Stratton, O'Toole, and Wetzel (2007), when deciding whether to attend

college, one of the most effective pieces of information young adults have is their academic performance. However, similar to ACSFA's (2002) findings, the lowest-achieving HI young adults (60%) are on course at a higher rate than the highest-achieving LMI young adults (46%). Adolescents' expectations also appear to be an important factor for reducing the college progress gap in this study. This is consistent with previous research (see e.g., Mau, 1995). We find that when LMI young adults expect to attend or graduate from college and HI young adults do not, a slightly higher percent of LMI young adults are on course than HI young adults.

In regards to assets and savings, all three asset variables are associated with a reduction in the college progress gap between HI and LMI young adults when LMI young adults possess assets and HI young adults do not. However, in both the case of net worth and parents' savings for adolescents, while the gap is reduced, it remains statistically significant. In contrast, when LMI young adults have school savings as adolescents and HI young adults do not, the gap is no longer statistically significant.

In the sample of LMI young adults, multivariate analyses indicate that household size, parent expectations, peer expectations, adolescent's expectations, and academic achievement are important factors for understanding college progress while controlling for other factors. Following the model set forth by Coleman (1988), the more children in a household, the fewer resources for each child in the household. However, contrary to this model, in this study we find the more people in a household the more likely young adults are to be on course. Since we measure number of people in the household and not the number of children per se, the positive relationship may be because additional members mean additional bread winners. That is, it may reflect differences between living in a single parent households or a household with two parents. Alternatively, McDonough (1997) in a qualitative study of adolescents' decision to attend college finds that some adolescents use older siblings as an important source of information in making their decision. From this perspective, larger family sizes can be a positive depending on the types of experiences older siblings have in college.

In multivariate analysis, parents' and adolescents' expectations remain two of the strongest factors for explaining college progress among LMI young adults. Equally important is the fact that head's education does not have a significant association with LMI young adults' college progress. The insignificant finding may be because, as Ogbu (1983) suggests in the case of Black adolescents, LMI young adults (who are overwhelmingly Black – 66%) may form negative perceptions about the possible return on education due to the job ceiling their parents face in the labor market. Having parents with a high level of education and living in a LMI household may reinforce these negative perceptions.

With respect to assets, findings suggest that adolescents' school savings is an important factor for understanding LMI young adults' college progress when controlling for economic, cultural, social, and human capital. This is consistent with previous research (see e.g., Elliott & Beverly, in press).

In the sample of HI young adults, age in 2002, head's education, and peer expectations are associated with college progress. Both age and head's education are not significant in the LMI sample. It is unclear why older HI young adults are less likely to be on course than younger HI young adults. In regards to head's education, unlike LMI young adults who experience a mismatch between their parents' education level and their income level, HI young adults experience a match reinforcing positive beliefs about education and their ability to achieve the American Dream. It is

also worth noting that both parents' and adolescents' expectations are not significant in the HI sample. A reason for this may be because most HI parents (85%) and adolescents (92%) have positive expectations. Therefore, there may be too little variation to be detected statistically. This does not mean expectations are not important. For example, when HI young adults who have parents who do not expect them to graduate from college are compared at the bivariate level to LMI young adults who have parent that do, LMI young adults are more likely to be on course.

With respect to assets, findings suggest that adolescents' school saving is not significant but net worth is. It may be that a threshold exists where income is sufficiently high that having savings of one's own no longer is perceived by the adolescent as important to financing college. That is, there may be a point when it is no longer reasonable for adolescents to doubt the ability of their families to finance college. Once this point is reached, having school savings may have little additional benefit.

Limitations

A limitation of this study is the uncertainty of omitted variable bias. Young adults who have savings as adolescents may have differed from other young adults in other ways that affect college progress (e.g., motivation or self-discipline). Thus, it could be that the significant effect of assets is spurious. This is dealt with, in part, by controlling for various factors that are commonly associated with college attendance and completion, including economic, cultural, social, and human capital, but alternative explanations cannot be fully ruled out. It is also impossible in this study to measure whether young adults *grow up* with knowledge that they have financial resources to help pay for current and future schooling. In this study, savings is only measured at a single point in time.

Another limitation is the mean age of young adults of 20. Although age 20 is old enough for young adults to attend college, some will take longer. Moreover, some may start college at a young age but stop and then start again later. The percentage of young adults "on course," therefore, may increase over time. However, more young adults aged 18-21 are enrolled in college—approximately 50%—than any other age group. In comparison, only about 30% of young adults aged 22-24 are enrolled, and just over 10% of young adults aged 25-29 are enrolled (Baum & Ma, 2009). In addition, research consistently shows that older students are less likely than younger students to graduate from college (Choy, 2002). Overall, if youth do not attend college shortly after high school, the likelihood of ever attending or completing college is greatly reduced.

Moreover, there is also a potential measurement error in the school savings variable. Since there is a fairly large difference in age of youth in 2002 (12 to 19), it could be that younger youth do not report designating their savings for school at similar rates as older youth. If this is true, findings related to youth school savings may be driven by older youth. Younger youth may not be able to grasp the relationship between savings and future opportunities such as college. Age 12 is the first year that the CDS asks youth if they have savings of their own. Evidence from behavioral economics suggests that youth may benefit from saving as early as age 12, and that somewhere between the ages of six and twelve, they begin to grasp the relationship between saving and future opportunity (see e.g., Elliott, Sherraden, Johnson & Guo, 2010; Sonuga-Barke & Webley, 1993). Moreover, we find that savings rates among youth below age 16 (HI = 29%; LMI = 14) and youth age 16 or older (HI = 26%; LMI = 17) are roughly equal for both samples. Therefore, it is unlikely that findings are being driven by differences in youth's age in 2002, the year youth school savings is measured.

Implications

Overall, findings from this study provide additional evidence for the potential of programs that help build economic, cultural, social, and human capital among LMI young adults that they are likely to reduce the college progress gap between LMI and HI young adults. Among the traditional variables used in this study to measure capital, parents' expectations and adolescents' expectations appear to hold the most promise. While there has been some attention given to the fact that college expectations are on the rise (see e.g., Reynolds & Pemberton, 2001), it appears that many LMI young adults and their parents continue to have low expectations in comparison to HI young adults. For many LMI young adults, more schooling may appear less rewarding because of fears about paying for college and about how much can be earned upon graduating from college. Assisting these young adults with ways to pay for school is critical so that attending and graduating from college becomes realistic for them and their parents.

Additionally, findings suggest that while nearly the same percent of LMI and HI parents perceive of college as expensive, far fewer LMI young adults who live with parents who perceive that college is expensive are on course than HI young adults. It may be that perceptions of college as expensive are more damaging to the college progress of LMI young adults than HI young adults. McPherson and Schapiro (1998) find evidence that high college costs do lead to a reduction in college enrollment among low-income young adults. This suggests that in addition to programs that improve parents' and adolescents' expectations, there is a need for programs that help build positive perceptions among LMI young adults and their parents about their ability to pay for college.

Child Development Accounts (CDAs) have been proposed as a way to help students finance college (Boshara, 2003; Goldberg & Cohen, 2000; Sherraden, 1991). In their simplest form, CDAs are incentivized savings accounts that can be used for long-term investments, such as education, home and business ownership, and retirement. An example of a CDA policy is the America Saving for Personal Investment, Retirement, and Education (ASPIRE) Act. ASPIRE would create "KIDS Accounts," or a savings account for every newborn, with an initial $500 deposit, along with opportunities for financial education.[6] Youth living in households with incomes below the national median would be eligible for an additional contribution of up to $500 at birth and a savings incentive of $500 per year in matching funds for amounts saved in accounts. When accountholders turn 18, they would be permitted to make tax-free withdrawals for costs associated with post-secondary education, first-time home purchase, and retirement security. Other examples of youth asset-building policies are the Young Saver's Accounts, 401Kids, Baby Bonds, and Plus Accounts.[7] At the state level, College Savings (529) Plans are becoming more inclusive and are a promising platform for CDAs (Lassar, Clancy, & McClure, 2010).

Research on assets and savings suggests that CDAs may be an effective way to increase expectations of parents (see e.g., Zhan & Sherraden, 2003; Zhan, 2006; Williams Shanks & Destin, 2009) and adolescents (Elliott, 2009; Elliott & Beverly, in press) in addition to helping pay for college. For example, Williams Shanks and Destin (2009), in a sample of all Black parents from the PSID/CDS,

[6] At this writing, the ASPIRE Act remains on the Congressional agenda (http://www.assetbuilding.org/resources/the_aspire_act_of_2004_kids_accounts_s_2751_hr_4939).
[7] For more information on these policies, see Loke and Sherraden (2009).

find that net worth is significantly related to their college expectations for their children. Elliott and Beverly (in press), using a sample of adolescents and their parents from the PSID/CDS/TA, find that adolescents' school savings is significantly related to their college expectations. The potential for direct and indirect effects makes CDAs a particularly alluring policy strategy for reducing the gap in college progress between LMI and HI young adults.

In regards to HI young adults, findings suggest that a threshold may exist where family income is sufficiently high that having savings of one's own no longer is perceived by the adolescent as important to financing college. That is, there may be an income point where it is no longer reasonable for adolescents to doubt the ability of their families to finance college. Once this point is reached, having school savings may have little additional benefit. This suggests that providing CDAs to HI young adults may not be the best use of funds. Existing policies that help build family net worth may benefit HI young adults more than a CDA policy would. Examples of these policies are the home mortgage tax deduction, 401(k) plans, and IRAs. These policies often do not benefit low-income families (Sherraden, 1991). This suggests that progressive CDAs (where everyone is given an account but only LMI children receive initial deposits or matches, for example) or CDAs for LMI children only may be most effective.

Future research may want to examine whether the effects of high college costs work through parents' and adolescents' expectations. Researchers may also want to examine whether there actually is an income threshold where adolescents' school savings no longer benefit young adults' college progress and what the threshold is. Research designs are needed that allow the researcher to test for causation; that is, does having adolescents' school savings cause LMI young adults to be on course? A large experiment in Oklahoma called SEED for Oklahoma Kids (SEED OK) is testing CDAs that are in the state's name with the youth as the beneficiary.[8] However, because the accounts are issued at birth in 2004, it will be a number of years before researchers will be able to test this design as it relates to college progress. Until then, finding other data sets and ways of testing causal relationship is an important next step.

Finding innovative ways for LMI young adults to attend and graduate college is important to the long-term vitality of America in the high-tech global economy of the 21st century. Policies such as universal CDAs that can help parents and youth accumulate savings—especially savings for college—may be a simple and effective strategy for helping to keep LMI young adults on course in their college education.

[8] For more information on SEED OK, see http://csd.wustl.edu/AssetBuilding/SEEDOK/ .

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Appendix A: Pearson correlation matrix of the independent variables used in model 1 – low-to-moderate-income (below $50,000)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Black	1.00												
Household size	.10*	1.00											
Young adults' age in 2002	.01*	.00	1.00										
Parents' perception of college as expensive	.04	-.01	-.13**	1.00									
Head's education level	-.20***	-.04	.10*	-.09	1.00								
Parent expects youth to graduate college	-.09	-.05	.08	-.06	.29***	1.00							
Adolescent expects most peers to attend college	-.16**	-.11*	.08	-.09	.26***	.30***	1.00						
Parent involvement in school	-.01	.03	-.43***	.01	.04	.03	.03	1.00					
Academic achievement	-.25***	-.15**	.11*	-.16**	.22***	.30***	.16**	-.11*	1.00				
Adolescent expects to attend or graduate from college	.02**	-.01	-.06	.02	.l7**	.40***	.20***	.02	.29***	1.00			
Parents' savings for adolescents	-.10*	-.03	.00	-.16***	.15**	.19***	.13*	.08	.12*	.10*	1.00		
Net worth (log)	-.28***	-.04	.22***	-.19***	.37***	.14**	.21***	.03	.08	.10*	.17***	1.00	
Adolescents' school savings	-.14**	-.01	.01	-.11*	.07**	.14**	.29***	.05	.15**	.26***	.17***	.24***	1.00

Source: Weighted data from the Panel Study of Income Dynamics and its supplements.
* $p < .05$; ** $p < .01$; *** $p < .001$

Appendix B: Pearson correlation matrix of the independent variables used in model 2 – high-income (HI) ($50,000 or more)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
Black	1.00												
Household size	.10*	1.00											
Young adults' age in 2002	.00	.00	1.00										
Parents' perception of college as expensive	.04	-.01	-.13**	1.00									
Heads' education level	-.20***	-.04	.10*	-.09	1.00								
Parents expect youth to graduate college	-.09	-.05	.08	-.06	.29***	1.00							
Adolescents expect most peers to attend college	-.16**	-.11*	.08	-.09	.26***	.30***	1.00						
Parents' involvement in school	-.01	.03	-.43***	.01	.04	.03	.03	1.00					
Academic achievement	-.24***	-.15**	-.11*	-.16**	.22***	.30***	.16**	-.11*	1.00				
Adolescents expect to attend or graduate from college	-.16**	-.01	-.06	.02	.17**	.40***	.20***	.02	.29***	1.00			
Parents' savings for adolescents	-.10*	0.03	.002	-.16***	.15**	.19***	.13*	.08	.12*	.10*	1.00		
Net worth (log)	-.28***	-.03	.22***	-.19***	.37***	.14**	.21***	.03	.08	.10*	.17***	1.00	
Adolescents' school savings	-.14**	-.01	.01	-.11*	.07	.14**	.29***	.05	.15**	.26***	.17***	.24***	1.00

Source: Weighted data from the Panel Study of Income Dynamics and its supplements.
* $p < .05$; ** $p < .01$; *** $p < .001$