Identifying Short Term Outcome Metrics for Evaluating Whether Children's Savings Accounts Programs Are on Track

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Summary

Children's Savings Account (CSA) programs are long-range investments starting at a child's birth or upon entry into kindergarten but not coming fully to fruition until a child reaches college age. Without clear indications of interim progress over such a long time span, maintaining support for CSAs is difficult. Thus, it is imperative that CSA stakeholders have real-time information for decision making. In this brief, we identify theoretically and empirically based interim metrics for evaluating whether a CSA program is on track to improve college attainment among participants long before they reach the age of postsecondary enrollment. Given the newness of CSA programs, there is limited research on the direct relationship between CSA participation and children's educational outcomes, particularly beyond the early childhood years. Therefore, while evidence for some metrics is based on research from a randomized control trial of CSAs, many of the existing studies use bank savings accounts dedicated to educational purposes as a proxy for potential CSA program effects. Given the limitations of studying this still-emerging field, the interim metrics identified in this brief should only be considered as a starting point for determining best practices to evaluate CSA program effectiveness. Only through clearly articulating the intended outcomes, studying the contributors to those factors, and testing of the effects of CSAs, can an exact set of measures be identified. Because the body of CSA evidence is continuing to evolve, this evaluation should be considered not only summative—that is, assessing the extent to which programs are on track to reach their goals—but also formative, given that attending to interim financial and academic measures may facilitate CSA design and modification so as to maximize the likelihood of potential beneficial effects.

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Introduction

Scholars and commentators seeking attribution for the comparatively poor educational attainment of economically disadvantaged children often seek to separate financial constraints and inadequate academic preparation, as though they are distinct phenomena acting independently on children's educational trajectories. Instead, research suggests that insufficient financial and academic preparation for college is partly attributable to the common perception that college is unaffordable and out of reach for many American families, beliefs that subsequently drive behavioral choices (Ellwood & Kane, 2000; Goldrick-Rab, Harris, & Trostel, 2009; Heller, 1997). This suggests that improving the educational outcomes of disadvantaged children may require intervention early enough to alter familial expectations and the preparation of the children, thus positioning children financially and academically for postsecondary success. Instead, most financial aid interventions occur far too late in a child's academic career to counteract the accumulation of disadvantages over a child's lifetime. This is one of the essential distinctions of Children's Savings Accounts (CSAs), unique in the financial aid landscape.

CSAs are savings vehicles that facilitate transformative wealth transfer, most commonly designed to help families with children to begin planning for college at the birth of a child or when the child begins kindergarten. Although they are meant to be universal programs that may be employed by all young people who aspire to postsecondary education, CSAs have specifically designed features that encourage savings among disadvantaged youths and their families. Usually deposits are permitted from children, their parents and other relatives, as well as from third parties, such as employers and scholarship programs. Ideally, these investments are leveraged with an initial "seed" deposit and/or matching funds that add public or philanthropic contributions to families' savings. For low-income savers, this offsets meaningful incentives that are already available to higher-income households through tax benefits and shifts the distribution of institutional resources more favorably toward these children. Significantly, intervening early to initiate savings may afford not only greater financial asset accumulation but also cultivates educational expectations and engagement that can catalyze

superior achievement. More specifically, some researchers have theorized that asset effects occur through a process known as institutional facilitation, whereby individuals' attitudes, expectations, and behaviors are shaped through interactions with supportive institutions such as CSAs (AEDI, 2013). In this case, when children experience a CSA program that reinforces a normative expectation of college attendance, their orientation towards academic achievement is bolstered, and they begin to act in ways congruent with their "college-bound" identity (e.g., Elliott, 2013; Oyserman, 2013). In turn, this leads to more savings, which further bolsters expectations and achievement (AEDI, 2013).

While the dimension of time is not the only characteristic of CSAs distinguishing them from other parts of the U.S. financial aid system, these long-term interventions do stand in sharp contrast to the "just-in-time" approach of student loans and even most merit- and needs-based grant aid. In the arena of educational attainment, there is real value in early initiation. Failure to plan for college enrollment from an early point in K–12 schooling is detrimental because the academic pathways to college, especially four-year colleges, are structured and sequential (e.g., Cabrera & La Nasa, 2000; Hallinan, 1996; Klasik, 2012). For example, the track to college-level math begins in middle school, and fewer students from low-income families are likely to engage in college preparatory activities then because they do not *expect* to attend college even if they *aspire* to doing so (Long, Conger, & Iatarola, 2012; Lucas & Berends, 2002; Rees, Argys, & Brewer, 1996). Thus, to foster a sense that postsecondary education is a viable option for one's future, low-income students and their families may need to have a strategy for paying for college as early as possible.

Particularly among low-income families, CSAs are receiving growing interest as a tool for helping families begin to plan for how to pay for college starting when their child is at a young age. As such, CSAs are increasingly discussed as an early-commitment financial aid strategy that may reform college financing in the United States (e.g., Burke, 2015) and lead to altering patterns of educational attainment. By changing the distributional consequences of the savings rules for low-income children and their families (e.g., savings disincentives within means-tested benefit programs or distance between low-income households and tax-advantaged, state-supported 529 college savings plans), CSAs may provide them with the opportunity to achieve

higher savings. Furthermore, initial deposits, incentives, and matches may affect financial decisions such as saving by making the opportunity costs for low-income individuals—who have less money to spend on basic necessities and whose savings incur a greater "cost"—appear worthwhile because of the return they will receive from saving in CSAs.

Because the CSA programs focused on in this brief start at birth or when a child enters kindergarten and aim to increase college attainment as a primary long-term goal (i.e., a long-term outcome metric), it is critical to identify interim outcomes that have been shown to be strong predictors of children's enrollment in college (i.e., short-term outcome metrics), with the understanding that some of these same factors, as well as others related to institutional performance and student characteristics, may influence persistence to achievement of a college degree. Importantly, there must also be theoretical and/or empirical evidence suggesting that CSAs are expected to have a positive effect on the metric that, in turn, is shown to be an important predictor of college enrollment, which is one of the main long-term goals of most CSA programs. This analysis is in addition to CSAs' effects on household asset holdings, connection to the financial mainstream, and savings behavior, all separately associated with measures of well-being beyond the educational arena. Because the primary impetus for initiating and supporting CSAs has been the pursuit of improved higher educational outcomes, this is the most critical area of inquiry at this point.

In this brief, we are not focused on the long-term effects of CSAs; instead, we are focused on their potential for short-term indirect effects, as opposed to the long-term direct effects of increased asset holding. As the field matures and provides additional opportunities to collect data directly from CSA interventions, it may be possible to add layers to this body of knowledge, including greater understanding of the ways in which institutional changes in response to shifting distributional consequences also affect students' outcomes.

Background: the importance of developmental stages for determining interim metrics

Given that most CSA programs have been in existence less than ten years and most children having CSAs are still quite young, we currently rely on closely related research to help

understand the benefits and potential of CSAs, as research and theory develop within the field. As currently conceptualized, CSAs are an early commitment strategy (AEDI, 2013). Although family income investments in children's human capital and long-term asset investments such as CSAs (e.g., Sherraden, 1991) clearly differ in some ways, there are also important similarities. For example, they are both financial investments that occur early in a child's life, and they are both aimed specifically at educational effects. Therefore, we refer to research on family investments—both family income investments, as well as more general investments in building human capital—to begin to gain some understanding of how we might expect CSAs to work at various developmental stages.

Questions remain about whether the mechanisms are the same for liquid assets and/or family income and a family's access to CSAs, which may affect how they are mentally accounted for. Furthermore, questions remain about the developmental stages when effects on children's cognitive and noncognitive development may appear and possibly be attributed to higher expectations for educational attainment. However, given that only a limited set of empirical studies have investigated how CSAs correlate to cognitive and noncognitive development, at least these studies on liquid assets and family income, for example, provide an initial glimpse at how CSAs may also affect behavioral outcomes.

Identifying interim outcome metrics

This brief focuses on interim metrics for studying CSAs. Here, it is important to point out that interim metrics will not tell you whether a program is effective. Rather, they only convey whether the data is trending in a certain direction. As such, interim metrics are generally used as part of a research study or evaluation. A research study may be undertaken by experts to prove or disprove a particular hypothesis, whereas an evaluation aims to improve the performance or efficiency of the program. We anticipate that the interim metrics related to CSAs will be used for both research and evaluative purposes. That is, given the relative novelty of CSA programs, there is need for conducting rigorous research that tests hypotheses. However, confirmation of which metrics would enable CSA holders to project their progress

toward a particular goal is still a task relegated to the future, requiring considerable human and financial resources to achieve.

Appendix Tables 1–5 provide overviews of five interim outcome metrics—socioemotional development, math skills, reading skills, educational expectations and high school graduation along with their predictors, which will be discussed in this brief. Predictors of interim outcome metrics might provide us with some insight into aspects of the mechanism by which, for example, CSAs influence children's educational expectations or their socioemotional development. Such predictors may also serve as potential interim outcome metrics themselves.

Socioemotional development

Socioemotional development is a potential interim metric that can be used by CSA programs to help determine whether children are on track to achieve improved college enrollment outcomes. Children who are socially and emotionally developed are better able to "manage their emotions, calm themselves when angry, establish positive relationships, make responsible and safe decisions, and handle challenging situations constructively and ethically" (cited in Burke, 2015, paragraph 3). These competencies are particularly significant determinants of later success in school and the labor market. This suggests that CSAs' effects on those dimensions of children's development may be particularly instrumental in catalyzing improved life outcomes.

Evidence of how the interim metric correlates with college enrollment

Rigorous experimental studies conducted by educational researchers have shown a causal link between socioemotional well-being and academic achievement (Durlak, Weissberg, Dymnicki, Taylor & Schellinger, 2011). Durlak et al. (2011) had conducted a meta-analysis of 213 school-based, universal social and emotional learning (SEL) programs involving 270,034 kindergarten through high school students. Employing an experimental randomized design, SEL participants, as compared with controls, demonstrate significantly improved social and

emotional skills, attitudes, behavior, and academic performance that reflects an 11-percentile-point gain in achievement, which positively correlates to future college enrollment.

Evidence that CSAs are related to the interim metric

Rigorous evidence from the CSA field's randomized control trial, SEED for Oklahoma Kids (SEED OK), has provided evidence that suggests CSAs may help to sever the linkage between household economic status and academic preparation, particularly on the dimension of socioemotional competency, thus positioning disadvantaged students for greater achievement.[1] Research from SEED OK has indicated that infants from households having incomes less than 200% of the poverty line and who had been randomly assigned to receive CSAs demonstrated significantly higher social-emotional skills at age four than their counterparts who had not received a CSA (Huang, Sherraden, Kim, & Clancy, 2014). These effects of parental investment were measured at a slightly younger age than had been previously suggested as detectable by Votruba-Drzal (2006) (i.e., at ages 5 to 6).[2] This suggests that the effects of parental investments may be detectable at slightly younger ages than previously thought, and ages 5 to 6 is a rough age range for when parental investments may have a detectable effect on children's noncognitive functioning. Therefore, the findings of Huang et al. (2014) can be interpreted as being consistent with previous findings on parental investment discussed here, extending them firmly into the arena of CSA evidence. Given the experimental data pertinent to how socioemotional well-being correlates with children's academic achievement and how CSAs correlate with socioemotional well-being, we posit that there is strong evidence suggesting that socioemotional well-being is an important interim measure that CSA programs can use to assess whether they are on course for improving college enrollment outcomes.

[1] The SEED OK research experiment tested the effects of CSAs started at birth in a full population. The SEED OK experimental sample was drawn randomly from birth records provided by the Oklahoma State Department of Health for all infants born during certain periods in 2007. For more information, go to http://csd.wustl.edu/OurWork/FinIncl/InclAssetBuild/SEEDOK/Pages/SEEDOK.aspx

[2] Votruba-Drzal (2006) examined family income. As we discussed in our introduction, the influence of CSAs may differ from that of family income.

Predictors of socioemotional development

Better understanding the contributions of other indicators to the identified interim metrics may not only enrich the theoretical and empirical knowledge base but may also facilitate evaluation by enabling collection and analysis of available data in the absence of direct interim evidence. Research shows that one of those predictors[3] is maternal depression. To date, there is strong empirical evidence for CSA effects only on maternal depression. Findings from SEED OK have indicated that mothers whose children have a CSA (i.e., the treatment group) report lower levels of depressive symptoms than mothers whose children do not have a CSA (i.e., the control group) (Huang, Sherraden & Purnell, 2014). Given this, maternal depression may serve as another important interim metric for determining whether CSA programs are on track to improve children's college enrollment chances. In addition, child maltreatment and the quality of the home environment, both of which directly influence maternal depression, could be worthwhile for CSA programs to monitor in order to ascertain whether CSA effects on these measures are evident as well.

Academic achievement (math and reading scores)

Other potential interim measures, for which some evidence exists, are children's math and reading scores. These measures of children's academic achievement may not only reflect children's academic preparation and likelihood of future academic success but also signal to teachers and other school personnel a given child's academic potential in ways that may later affect expectations and interactions between teacher and student (Jussim, Eccles & Madon, 1996; Kukliniski & Weinstein, 2001; Madon, Jussim & Eccles, 1997; Rist, 1977), potentially leading independently to greater achievement.

[3] Research suggests that the following factors are predictors of socioemotional development: family income, wealth, parental education, parental occupation, neighborhood poverty, high-quality early child care and education, parental stress or maternal depression, potential for child abuse, and quality of home environment (Chamberland, Lacharite, Clement & Lessard, 2015; McCoy, Connors, Morris, Yoshikawa & Friedman-Krauss, 2015).

Evidence of how the interim metric correlates to college enrollment

The Elementary and Secondary Education Act (ESEA) and its subsequent reauthorizations through the decades have sought to improve reading proficiency at all levels. More recently, the No Child Left Behind Act, the Obama Administration's ESEA reauthorization proposal, and current congressional proposals support the annual assessment of reading skills for all students beginning in Grade 3.[4] Third grade marks a transition when children should shift from "learning to read" to "reading to learn," making reading proficiency at this age highly determinant of academic success in other subject areas. However, the National Assessment of Educational Progress (NAEP) has reported that, in 2013, only 34% of fourth graders were reading at a "proficient" level.

Children who cannot read well in third grade cannot use reading as a tool to engage with school, to do their homework, or to study for exams (Lloyd, 1978). These deficiencies can compromise later educational attainment, including preparation for college enrollment. For example, in a longitudinal study of nearly 4,000 students, Hernandez (2011) has found that those who do not read proficiently by third grade are four times more likely to not graduate from high school than proficient readers. The odds are even worse for the least proficient readers; children who have not mastered even the basic skills by third grade are nearly six times less likely to graduate high school than proficient readers (Hernandez, 2011). Effects are particularly strong for low-income and minority students. Other research indicates that third grade reading is a positive predictor of college attendance (Lesnick, Goerge, Smithgall & Gwynne, 2010). As school districts put increasing weight on these standardized achievement measures, these performance effects may become more pronounced. Schools that use such assessments to make decisions about academic tracking, in particular, may send children powerful messages about their academic potential, thereby further decreasing the likelihood of their academic success.

Similarly, standardized math scores may be an important interim metric for assessing whether CSA programs are on course. Triangulating across national data sets, Lee (2012) demonstrates the effects of early math performance on eighth grade math achievement and on

[4] Third grade is used here; however, the intent is to use the first state assessment given for reading and math, whether third or fourth grade, depending upon the state.

the likelihood of entering and completing two- and four-year colleges. Lack of math proficiency may also preclude students' consideration of certain career paths, including those in the highly compensated science and technology fields (Nicholls, Wolfe, Besterfield-Sacre, Shuman & Larpkiattaworn, 2007), thereby influencing students' perceptions of the potential return on investment of a college degree.

The strong correlations of Grade 3 reading and math proficiency to enrollment in college may make these skills ideal outcomes to measure for CSA programs that explicitly focus on college access and completion and are initiated in early school years, particularly if the CSA programs are located within educational institutions that have relatively easier access to these academic measures. This approach to assessing interim CSA metrics may also be strategically useful to CSA programs operating in an educational context, where the potential to improve elementary academic achievement is of considerable value, even independent of its effects on children's postsecondary prospects.

Evidence that CSAs are related to the interim metric

Using bank savings as a proxy for having a CSA, Elliott (2009) has examined the association that children's savings have with math scores of children, ages 12 to 18. Findings have indicated that children with savings designated for school have significantly higher math scores than their peers who lack education-designated savings. This study helped establish that savings designated for school-related purposes may be associated with improved children's math scores, even among children from households of similar income level. Moreover, findings have suggested that this relationship can partly be explained by the effects of children's savings on children's college expectations. These greater expectations subsequently encourage behavior that may be associated with greater achievement.

Family asset holdings may also influence how the presence of any type of children's savings account correlates to their academic achievement. For example, Elliott, Jung, and Friedline (2010) have examined how a child having any type of savings correlates with higher math scores. Findings from this study have revealed that the presence of savings for children, family net worth, and academic achievement are related in rather complicated ways. First,

savings set aside for a child are positively associated with higher children's math scores. Moreover, such savings are positively related to higher achievement for children who live in low-wealth, middle-wealth, and high-wealth families. However, the presence of savings for a child is a stronger predictor of better math scores for children living in middle-wealth families than for children from low-wealth families and the association with improved math scores is stronger yet for children living in high-wealth families than for children living in middle-wealth families.[5] Overall, findings seem to indicate that children's savings may make an important independent contribution to children's math scores that is not explained solely by overall family wealth.

Unlike the previously cited study that only looked at the effect of the presence of any type of children's savings on math scores, the same authors have also examined the effect on math scores of a child having savings designated specifically for college (Elliott et al., 2011). They found that having savings designated for school is associated with higher children's math scores and, further, that the effect does not vary according to level of family wealth like it does when children have savings not specifically designated for college. On this basis, having savings designated for college—similar to most CSA programs—may be a better policy solution to promote improved academic achievement than just having savings if increasing equity is a goal. This is because, in terms of math scores, low-wealth children appear to benefit from having savings designated for school as much as high-wealth children do.

To further explore the effects of assets on academic achievement, Elliott, Kim, Jung, and Zhan (2010) have examined separately the relationship of savings with black and white children's math and reading scores. Children's savings designated for school are significantly related to white children's math scores but not significantly related to their reading scores. Conversely, savings are not directly related to black children's math scores but are directly related to their reading scores. In regards to children's preparation for college, one implication of this study is that outcomes associated with children's savings may vary by race, likely reflecting the extent to which educational experiences in the United States are influenced by

[5] Family net worth findings seem to contradict family income findings. Findings with regard to family income suggest that there may be a threshold where, once a child's family income goes above a certain level, the relationship of college-designated savings and children's educational outcomes disappear (e.g.,. Elliott, Constance-Huggins & Song, 2013). This may underscore the importance of designing CSAs so that low-income children—who may be particularly susceptible to CSAs' effects—are able to equitably benefit from the intervention.

race. While this does not suggest that CSAs cannot be valuable interventions to improve the educational outcomes of children of color, it does underscore a critical lesson that no single intervention—CSAs included—can completely close the educational gaps plaguing disadvantaged students, such as children of color, today.

Previous research has indicated that several factors are predictors of early math achievement.[6] Among these factors are several for which empirical evidence exists to suggest that CSAs may have a positive effect and thus may best be understood as potential interim metrics: motivational and self-regulatory behaviors, parental educational expectations, and children's commitment to academic effort. There may also be CSA effects on early education-oriented parental practices in kindergarten through the lever of parental expectations and/or reduced maternal depression. The evidence for these factors as potential interim metrics will be discussed in the section on parents' and children's educational expectations. In addition, when CSAs happen to be administered in the context of an educational institution, this may shape teachers' evaluations of children's effort, prompting teacher intervention that may also positively affect math achievement.

As with math achievement, there is evidence to suggest that CSAs may influence children's reading achievement through their effects on child socioemotional development[7] (Huang, et al., 2014) and family stress (specifically, there is evidence that CSAs reduce maternal depression, see Huang et al., 2014). In addition, through the provision of financial incentives and other mechanisms, certain CSAs are designed to explicitly encourage behaviors associated with reading achievement, such as regular school attendance and participation in early childhood education. These CSAs may show promise in affecting these indicators.

Existing research-based findings on how CSAs effect math and/or reading achievement can be interpreted as suggesting that CSA effects are more likely to have a positive influence on

[6] End-of-year math achievement during first grade, motivational and self-regulatory behaviors, teachers' approach to learning, frequent presentation of challenging content, socioeconomic status, gender (i.e., male), parental educational expectations, race/ethnicity (i.e., white and Asian) (Byrnes & Wasik, 2009), children's effort investments, teachers' evaluation of children's effort, teachers' expectations of students' math competencies (mediated by students' self-concept in math) (Friedrich, Flunger, Nagengast, Jonkmann & Trautwein, 2015), changing schools multiple times between preschool Head Start and third grade (Friedman-Krauss & Raven, 2015), early education-oriented parental practices in kindergarten, and neighborhood disadvantage (Greenman, Bodovski & Reed, 2011

[7] Factors found to be predictive of third grade reading achievement include the following: health problems, linguistic development (i.e., verbal interaction with parents, being read to and having access to books in the home), socioemotional development, participation in high-quality early childhood and pre-kindergarten programs, high-quality schools, chronic absence (e.g., chronic absence in kindergarten is associated with poorer first grade performance), economic constraints (i.e., childhood hunger, food insecurity, housing insecurity, and family mobility), and family stress.

math achievement. Follow-up testing of the effects of CSAs on children's math and reading achievement will help in determining if such effects are valid indicators of the potential to improve the odds of children attending and ultimately graduating from college. However, whether CSAs can be said to influence children's college outcomes is unlikely to hinge on any single interim metric. Furthermore, we should not infer because a particular approach to CSA design and delivery does not seem to have an effect on a specific metric that a CSA, per se, could not have an effect if it were to be designed and/or implemented differently

This report ultimately suggests the existence of evidence that CSAs may influence children's college outcomes as reflected in a variety of different metrics. Further investigation is needed to better determine which of the metrics, if any, are most predictive and thus the best interim metrics for programs to use as guide posts. However, each program's goals and emphases must be kept in mind. If the school district or state were to prioritize third grade reading scores or eligibility for a scholarship in middle school (e.g., on the basis of GPA and attendance), these would likely be what the local CSA program would incentivize, promote, or build educational materials around. CSAs are not necessarily a generic tool that can only do one set of things; they can also be used strategically.[8]

In conclusion, although sufficient evidence exists to suggest that math and reading outcomes may serve as potential interim CSA measures, this evidence is weaker than for socioemotional well-being, which does, in turn, influence academic achievement. As yet, no data have been captured from actual CSA programs to test this relationship. Instead studies have employed national secondary data sets and a proxy (i.e., children who have savings in a bank account) for participation in a CSA program. For the most part, these studies use cross-sectional data rather than more advanced methods, such as propensity score matching or instrumental variables, to assess whether children who save tend to be higher achievers than children who do not save. Other factors to consider are that the secondary data sets are populated largely by children who are older than the ages at which most CSA programs in the United States are initiated and little is known about the age when the educational assets were acquired, introducing questions about the differential effects of account ownership initiation at

[8] We thank Trina Shanks, associate professor of social work, School of Social Work, University of Michigan, for reminding us to emphasize the role that local context is likely to play in determining the full set of metrics that programs are apt to use.

different points in child development. These children are not necessarily part of a college-saving culture, such as those that CSAs seek to cultivate, the absence of which could blunt some of the effects on educational outcomes. Moreover, effects on cognition might not show up until much later in life, even adulthood, leading to potential understatement of these dynamics. Finally, fidelity regarding how different CSA programs are implemented might also weaken potential effects not only with regard to math/reading but on a variety of different measures. Despite this, the burgeoning use of CSAs in many parts of the country provides a vital opportunity for research that could corroborate whether CSAs can be linked to higher math/reading scores.

Parents' and children's educational expectations

To date, evidence has suggested that CSA programs might significantly impact children's noncognitive functioning (e.g., children's socioemotional well-being and identity formation). This is not inconsequential because little evidence has been accumulated to suggest that cognitive skills promote the development of noncognitive skills, whereas noncognitive skills do promote the development of cognitive skills (Cunha & Heckman, 2008). Furthermore, noncognitive skills directly affect children's self-regulatory behaviors (i.e., the self's capacity to control behavior), a critical predictor of children's academic performance (e.g., Bandura, 1997).

In this section, both parents' and children's educational expectations, noncognitive skills (such as motivation, grit, self-regulation, or socioemotional skills), have been reviewed as potential interim measures. Educational expectations, a type of outcome signal, are posited to influence behavior directly and through the development and use of self-regulatory behaviors (i.e., the ability to control actions, emotions and thoughts) (Bandura, 1997). Stemming from analysis of financial asset effects on individuals' attitudes and beliefs, one of the driving forces behind interest in CSAs is their potential for changing the way people think about their future and, subsequently, the actions they take in pursuit of those visions of their future selves. Educational expectations are one important way of measuring how CSAs may change the way children and parents think about children's academic futures.

Evidence of how the interim measure correlates to college enrollment

Research has suggested that as early as age four or five children can understand that their future selves might have different desires than their current selves (Atance & Metzhoff, 2005). Further, there is evidence that elementary age children can describe both their current and future selves (for reviews, see Oyserman, 2001; Oyserman, Elmore & Smith, 2012; Oyserman & James, 2008). In the realm of educational expectations, this means that children can, at relatively young ages, project a future image of themselves that may or may not include college.

Here we draw a distinction between parents' and children's aspirations and expectations. Aspirations are expressions of peoples' desires or hopes (Mickelson, 1990; Reynolds & Pemberton, 2001). According to Mickelson (1990), aspirations are relatively stable beliefs that are often maintained even in the face of contradictory evidence. Conversely, research has shown that college *expectations*—what one actually anticipates—are more likely to change depending on children's social and economic circumstances and are more predictive of actual behavior (Cook et al., 1996; Mickelson, 1990; Reynolds & Pemberton, 2001). This matters because research consistently shows that higher college expectations lead to increased academic efforts and achievement (e.g., Beal & Crockett, 2010; Cook et al., 1996; Marjoribanks, 1984; Mickelson, 1990; Ou & Reynolds, 2008; Uno, Mortimer, Kim & Vuolo, 2010); in other words, what children expect for their future selves may influence what they do as their current selves. Researchers have suggested that college expectations are a proxy for children's visions of themselves in a future state, what may be called their possible future self or "college-bound identity" (Destin & Oyserman, 2010; Oyserman & Destin, 2010; Oyserman, 2013). This will be discussed more in the section describing the theory of CSA effects.

Evidence that CSAs are related to the interim metric

To date, only research using secondary data has been conducted to try to determine how savings accounts might correlate to children's expectations. As a result, it has been hard to say definitively that having a savings account leads to children having higher educational

expectations or whether having higher educational expectations leads to children having a savings account. However, some studies have tried to disentangle this complex relationship with, at best, marginal success. For example, Elliott, Choi, Destin, and Kim (2011) have conducted a simultaneous test of whether children's savings predict children's college expectations or whether college expectations predict children's savings. They find that children's savings have a slightly stronger relationship with children's expectations than children's expectations have with savings. One reason positive student expectations might have a stronger relationship with children's savings is that higher children's expectations may influence whether parents invest in the child's education (Elliott & Friedline, 2013; Flint, 1997; Powell & Steelman, 1995). According to Elliott and Friedline (2013), "positive student expectations may provide parents with much needed confidence that the student will graduate" (p. 146). The findings of Elliot et al. (2011), like those of Yadama & Sherraden (1996), have suggested the possibility that two-way causation exists. In the end, research using secondary data to examine how having a savings account correlates to children's expectations has suggested that the relationship is complex and simultaneous, and researchers are still working to sort it out. Without experimental data, it will likely be impossible to definitively tell whether having an account leads to children having higher expectations.

But, regarding how CSAs correlate to parental expectations, we have greater clarity. In an early study of asset effects among adults, Yadama and Sherraden (1996), using secondary data, simultaneously had tested whether assets (i.e., household savings and home equity) had increased the chance of having more positive attitudes and behaviors (i.e., prudence, efficacy, horizons, connectedness, and effort) or, conversely, whether attitudes and behaviors had increased the chance of having assets (Yadama & Sherraden, 1996). They found evidence of what they called a "virtuous circle," where assets had increased the chance of having more positive attitudes and behavior, and, in turn, attitudes and behavior had increased the chance of having assets (Yadama & Sherraden, 1996, p. 11). Similarly, Zhan and Sherraden (2003) have found evidence that assets may affect expectations and that expectations may also affect the accumulation of assets. In a more recent study, Zhan and Sherraden (2011) have found that financial assets are positively related to parents' and children's educational expectations (i.e.,

financial assets are associated with college expectations). Moreover, they found that financial assets and expectations are independently associated with whether children graduate from college. They also reported the existence of financial assets reinforced educational expectations, as described above.

Importantly, however, Kim, Sherraden, Huang, and Clancy (2015), using experimental data from SEED OK, have examined the impact of CSAs on the durability of parents' educational expectations from birth to age four. They found that parents who were in the treatment group (received the CSA) have higher expectations for their children and that their expectations are more likely to remain constant or increase during this time period than parents in the control group (did not receive CSA). These findings are particularly significant because the educational expectations of many disadvantaged parents tend to erode as children age and parents confront the obstacles to their children's educational success. These eroding expectations can be transmitted from the parent to the child (Sandefur, Meier & Campbell, 2006; Singh, Bickley, Keith, Keith, Trivette & Anderson, 1995). And while research suggests most parents (seven out of eight) expect their child to complete a four-year degree, when the data are disaggregated, only half of parents with annual incomes of less than $25,000 expect their child to complete a four-year degree (Child Trends Data Bank, 2012). These low expectations among low-income families may translate into a reduced chance of low-income children completing college (Entwisle, Alexander & Olson, 2005). Far more than just a vague hope for the future, parental expectations of future attainment may influence interactions that later affect achievement. Notably, Hess, Holloway, Dickson, and Price (1984) found that mothers' expectations of their preschool child are positively linked to their child's proficiency in sixth grade math and vocabulary.

In conclusion, research has linked parents' and children's educational expectations with children's college enrollment, likely through multiple channels, including parental engagement in children's schooling (Singh, 1995). Furthermore, there is strong evidence that CSAs are related to parents' educational expectations and moderate evidence that they are related to children's educational expectations. Critically, early findings from CSA programs in the field

have suggested some effect on children's educational expectations, raising the possibility that further research will reveal similar findings.

Tradeoffs that CSA programs must consider

While it is generally understood that evaluation is needed for the innovation and sustainability of CSA programs, programs must consider the tradeoffs involved. For example, due to the cost of evaluations, programs have to decide whether to invest their limited resources into extensive evaluation or to provide larger initial deposits, matches, or incentives for participants. Moreover, many programs start as the result of building political momentum and feel as though they must strike while the iron is hot, so to speak. The tradeoff becomes whether to consider evaluation from the outset of the program or to tag it on later. This timing factor is critical, as it helps to determine the rigor of the evaluation.

Evaluations that are factored into the design of the program have the potential of being much more rigorous than those that are started afterward. From the outset, programs would have a better sense of which data points to collect and what partnerships to initiate to efficiently collect that data. This would allow for baseline data to be collected and comparison groups to be established. When programs adopt a staggered approach enrolling one group of schools first and later others, selection of the initial schools can be randomized. This would allow for a much more rigorous causal design in contrast to the correlational design that flows from purposefully selecting schools. Also, the development of consent forms to permit sharing of data can be planned in advance, which facilitates getting participants in the program to sign at enrollment time. This contributes to higher participation rates in the research program. Furthermore, when evaluation is integral to the program from the outset, it may be possible to stave off the potential political concerns of, for example, the school districts, elected officials, and public administrators related to turning up negative findings that could jeopardize the program. In addition, a fear of potentially insignificant findings may discourage program administrators from conducting an evaluation altogether or limit the metrics they choose to evaluate.

What should be clear after reading this brief is that CSA programs are in the early stages of identifying meaningful interim metrics. Some metrics, such as socioemotional development and parental expectations, are supported by strong empirical evidence, but many of the other proposed metrics are still exploratory. Given current knowledge, interim measures that have only weak correlative evidence are not evidence of a failed CSA program but rather merit further investigation. If CSAs only exerted a positive effect on children's socioemotional development and parental expectations, these in themselves would signify the relevance of further work in this area. The unanswered question is how far the potential impact of CSAs goes with regard to children's early educational outcomes. Beyond this, research spanning various programs will facilitate the aggregation of findings, which will enable greater understanding about the influence of context, the necessary conditions for success, and the limitations of current designs.

Most existing CSA programs had been started without consulting an evaluation team in advance and thus are only considering evaluation years after implementation. In part, this reflects the growing recognition of the need to assess interim outcomes in order to sustain CSA interventions during the long period that precedes realization of an ultimate objective, such as increased college enrollment among participants. Unless interim measures are identified, many years pass when only outlays of money occur with scant knowledge of how the program is progressing toward its goals. Lacking evidence of success during these years can make CSAs vulnerable to attack whenever budgets are tight and/or can lead to assessment on the basis of indicators—such as family savings—that do not fully capture the effects of CSAs. Even administrators of nascent CSA programs, who may be convinced of the benefits of incorporating evaluations from the outset, must accept that evaluations will increase the CSAs' cost and also may delay implementation while evaluators devise a defensible research design. To balance research objectives and practical constraints, most program administrators have viewed evaluation separately from the CSA itself. Therefore, in general, evaluators have been tasked with seeking funding to conduct the evaluations, which limits the number of groups able and willing to conduct them and leads to the evaluation occurring sometime after the program has started.

Tradeoffs also arise when program administrators try to determine which interim measures to evaluate. For example, in the CSA field, there is a lot of interest in savings outcomes. But to create a comparison group of children who do not receive a CSA account can be difficult, particularly if all children are automatically enrolled in them. Even for CSAs that are not universal, studying the savings behaviors of comparison groups is not straightforward because programs seldom have records on those who are not in the program. Yet another confounding consideration is the ethical and societal cost of intentionally depriving a comparison group of children of the benefits assumed to arise from CSAs. Many school districts have employed an approach involving staggered methods for the enrollment of children — first with a quarter of district schools initiating CSAs, sometime later enrolling half of the schools, and finally three quarters so that all kids are enrolled. In these instances, organizing a substantive evaluation by using a comparison group is fraught with the potential to alienate one group or another.

At times, CSA programs have been championed by, for example, the state treasurer's office, particularly when schools or other organizations have not yet agreed to the initiation of CSA programs. Developing pragmatic working relationships and collaborative institutional structures among communities, school districts and such governmental entities is increasingly being viewed as a necessity to facilitate the collection of data about children's educational outcomes. The added complexity involved in establishing these relationships can introduce delays in implementation and/or require allocation of additional dollars to support setting up mechanisms for fluid data exchange among the coordinating organizations and with third-party researchers purposefully engaged in identifying and validating the reliability of interim metrics.

The repeal by local elected officials in mid-2015 of a CSA program in operation for about two years in Cuyahoga County, Ohio, underscores that CSA programs are under continual scrutiny. Substantiating the existence of interim metrics that chart progress toward educational achievement is critical to the cost-versus-benefit balancing act regional decision makers juggle.

Conclusion

This brief should be seen as the beginning of a conversation about appropriate metrics for evaluating Children's Savings Account programs. While this brief focuses narrowly on metrics related to the goal of increasing college enrollment, other dimensions of CSAs' effects could be interpreted as measures of a program's success—including the direct implications on a child's financial well-being and the currents that reshape critical institutions in children's lives. Given that higher educational attainment and/or vocational training is a primary goal of CSA programs and given the strong evidence of the relationship between postsecondary education and better financial and life outcomes in young adulthood, assessing interim measures on the path to higher education is a sound starting point for a discussion of metrics. It is worth restating here that only metrics for which evidence already exists have been discussed in this brief. Ongoing research means this is a changing landscape that requires revisiting as more is revealed.

Despite its limited focus, this brief illuminates the fact that by rigorously tracking interim metrics, CSA programs may not have to wait until newborn babies or kindergarteners have actually enrolled in college in order to have an understanding about the extent to which a CSA is achieving some of its key goals. Instead, they can get close to real-time insight into whether the CSA is on course, an outcome that subsequently can be used to bolster support among key stakeholders, to make the case for continued investments, and/or to attract the partners needed to sustain a CSA. Perhaps even more critically, such evidence can inform possible modifications to family engagement, financial education, account structure, incentives or transfers, and children's academic support interventions. In turn, these programs can use the considerable data at their disposal to continually refine and advance CSA policy in pursuit of the outcomes that inspired and today continue to animate the CSA field's hopes for the next generation.

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Appendix

Children's savings accounts potential interim outcome metrics, predictors, and measures

Potential Interim Outcome Metric	Predictor	Measure
Socioemotional Development	Parental Stress	Parenting Stress Index
	Child Abuse Potential	Child Abuse Potential Inventory
	Quality of Home Environment	Home Observation
	Maternal Depression and/or Anxiety	Center for Epidemiological Studies Depression Scale
Math Achievement	Academic Records	State Assessments
	Academic Records	Grade Level Test Scores
	Academic Records	End of School Year Grades
	Teacher's Expectations	Teacher Questionnaire/Survey
	Achievement Goal Orientation of Children	Achievement Goal Orientation Scale
	Teacher's Evaluations of Children's Effort	Teacher Questionnaire/Survey
Reading Achievement	Academic Records	State Assessments
	Academic Records	Grade Level Test Scores
	Academic Records	End of School Year Grades
	Teacher's Expectations	Teacher Questionnaire/Survey
	Achievement Goal Orientation of Children	Achievement Goal Orientation Scale
	Teacher's Evaluations of Children's Effort	Teacher Questionnaire/Survey
Educational Expectations	Attendance	Attendance Records
	Help Seeking Behaviors	High School Planning
	Parental Involvement	Survey
	Child Post-Secondary Expectations	Survey
	Teacher's Post-Secondary	Teacher Questionnaire/Survey

	Expectations	
Savings Activity	Take Rate	Program Savings Data
	Percentage of Accounts With at Least One Contribution	Program Savings Data
	Direct Deposit into CSA	Program/Family Savings Data
	Net Savings As a Percentage of Family Income	Program/Family Savings Data
	Savings Frequency	Program/Family Savings Data