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New Measures of Economic Security and Development: Savings Goals for Short- and Long-Term Economic Needs

The long-term economic security and development of a family depend largely upon saving and asset accumulation, yet most measures of economic well-being focus on short-term consumption needs. In this study, we take a broader view by specifying four types of savings goals for US families: precautionary, retirement, homeownership, and education goals. This study develops methods of calculating these savings goals for different types of families under various assumptions, using information from various sources. Our calculations also consider investment gains and differences in dollar values over time. We show that families should save between \$155 and \$572 every month to address all four savings goals. We find that the number of children in a family affects total monthly savings goals considerably but that the number of adults has limited impact. Savings goals can assist families in making financial plans and provide savings targets useful in development of policy.

Measures of economic well-being play critical roles in social research and policy. By identifying the levels of resources sufficient to meet families' economic needs, well-being measures help us to evaluate which and how many families may need additional support, and they enable us to track how these statistics change over time. These measures also inform the development of social policies and the management of social programs by identifying unmet needs and guiding decisions about eligibility for program participation (Blank 2008; Waglé 2008).

There has been lively debate over economic well-being measures in the United States. Many researchers have raised questions about the adequacy of the most widely used of these measures: the federal poverty

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thresholds (Blank 2008; Citro and Michael 1995). Some have proposed alternative income-based measures of economic well-being that may supplement information provided by the federal thresholds (Short 2011). Other researchers argue that income-based economic well-being measures are not sufficiently comprehensive, and they call for the use of new indicators that estimate other aspects of economic well-being. One prominent example from this discussion can be found in proposals to adopt economic-hardship measures that are based on families' own reported experience of economic difficulties (Beverly 2001; Ouellette et al. 2004). These discussions have led to the creation of new economic-hardship measures, including food insecurity measures developed with the US Department of Agriculture's Food Security Core-Module Questionnaire (Bickel et al. 2000) as well as multi-item measures that examine hardship related to food, clothing, housing, and medical care (Beverly 2001; Ouellette et al. 2004).

In the debates on assessing various dimensions of economic well-being, assets and savings have received little attention. One exception is the discussion of asset-poverty measures that estimate how much savings are needed to sustain a household after a job loss (Haveman and Wolff 2001; Short and Ruggles 2005). Recent empirical studies show that savings and assets are essential components of economic security and of opportunity (Lerman and McKernan 2008).

The scarcity of attention to assets and savings may be explained by the tendency among scholars and policymakers to focus on short-term consumption needs. Income-based measures of economic well-being (e.g., the federal poverty thresholds and supplemental poverty measure [SPM]) use household budget information to assess the level of income needed for current consumption. That is to say, these measures identify basic needs (e.g., food and housing), estimate the cost of each essential item, and sum the total cost of those needs (Blank and Greenberg 2008; Orshansky 1965; Short 2011). In contrast, material-hardship indexes gauge families' own experience of economic difficulties in meeting these basic needs. Material hardship measures are not constructed on the assumption that families are able to satisfy their current consumption needs if they report income above a certain preset level; rather, such measures directly assess whether families have experienced economic difficulties in meeting basic needs such as food and housing (Beverly 2001; Ouellette et al. 2004). However, material hardship measures resemble income-based economic measures in that both focus solely on short-term consumption needs.

Building on existing economic instruments, this study proposes a set of asset-based economic measures that broaden the focus beyond short-term

consumption needs. The new measures take into account those short-term consumption priorities (precautionary savings) as well as long-term economic security (retirement savings) and future economic development (savings for homeownership and college education). In addition, the new measures take a dynamic approach by calculating how much a family should save regularly (monthly) as well as the total amount of savings needed for specific purposes.

BACKGROUND

Like income-based measures of economic well-being and material hardship, existing asset-based measures of economic well-being focus mainly on short-term consumption needs. This is not surprising; the most prominent theories of saving and asset accumulation—the life-cycle hypothesis and precautionary saving theory (buffer-stock theory)—define savings and assets as storehouses of resources for future consumption (Nam, Huang, and Sherraden 2008). According to these theories, the main purposes of saving and asset accumulation are to prepare for income fluctuation and to smooth consumption throughout a lifetime (Ando and Modigliani 1963; Carroll 1997; Fisher 1987; Lusardi 1998). In the framework of the life-cycle hypothesis, individuals' earnings differ by their life stage: one's earnings during early adulthood are usually lower than one's permanent income (lifetime income or expected long-term average income). Earnings typically increase as job skills and work experience improve but dramatically decline in the later stages of life, after retirement. Anticipating that their earnings will decline in their later years, forward-looking individuals save for postretirement consumption. Thus, individual saving patterns are typically vaguely bell-shaped. That is, savings patterns parallel earnings patterns: workers save at low levels in the early stages of life, at high levels in the middle stages of life, and again at low levels in the later stages (Ando and Modigliani 1963; Samwick 2009).

Precautionary saving theory is an extension of the life-cycle hypothesis. The theory acknowledges that income can fluctuate because of unforeseeable events such as job loss (Carroll 1997; Lusardi 1998). The life-cycle hypothesis holds that the primary motivation for saving is postretirement consumption, but the precautionary saving theory maintains that the primary motivation is consumption at the time of unemployment: forward-looking individuals save when their current income is higher than their expected permanent income and borrow money when the former is estimated to be lower than the latter (Ando and Modigliani 1963; Carroll 1997; Fisher 1987; Lusardi 1998).

Measures based on these theories enable estimates of savings amounts for consumption needs during retirement and job loss. Based on the life-cycle hypothesis, retirement savings measures assess optimal savings amounts for postretirement consumption. Estimates from these measures account for other income sources (e.g., Social Security benefits and pensions), expected (desirable) consumption level, life expectancy, and other factors (Congressional Budget Office 2003; Scholz, Seshadri, and Khita-trakun 2006).

Another prominent asset-based approach to measuring well-being can be found in efforts to assess the extent of asset poverty. Such measures classify a household as asset poor if it lacks sufficient savings or wealth to meet consumption needs during a specified period of income loss. This type of measure assesses the amount of savings needed to keep a family above the federal poverty threshold for three months without income. That period is based on the expectation that an unemployment spell will last between 2.2 and 4.2 months (Caner and Wolff 2004).

Valuable as they are, measures of retirement savings and of asset poverty share the same limitation as income-based indicators of economic well-being and material hardship: they focus almost exclusively on consumption needs but pay little attention to the roles of assets and savings in economic development. Those roles may have long-term impacts on economic well-being. For example, savings used for an individual's college education likely affect that person's overall living standards and satisfaction throughout life. A comprehensive picture of overall long-term economic well-being requires an assessment of long-term economic development. Comprehensive asset-based measures are suitable for this task because assets and savings often play pivotal roles in economic development and meet consumption needs in times of economic hardship.

Another perspective is relevant for this discussion: the phrase "assets for development" is used to convey the principle that assets and savings are key components needed to enable the individual to pursue his or her full potential within the current economy (Nam et al. 2008, 11; see also Sherraden 1991). Assets accumulated for education or new business ventures enable owners to invest for a better future. Although the literature often characterizes homeownership as a form of consumption, owning a home imparts economic and noneconomic gains to its owners. Some of the advantages are consumption related: housing costs are relatively stable for homeowners (Ulker 2008), and the home can serve as a potential reservoir of postretirement consumption through reverse mortgage (Kutty 1998). Apart from the consumption-related benefits, homeownership promotes

long-term economic development. Homeownership is positively associated with the quality of one's home and the quality of one's neighborhood environment. It is also linked to residential stability, a heightened sense of control, sense of social belonging, and improved child outcomes (Nam et al. 2008; Rohe and Lindblad 2014; Shapiro 2001; Sherraden 1991). Given their roles in long-term development and upward mobility, savings and assets are critical components in the US Department of Commerce, Economics and Statistics Administration (2010) definition of a middle-class lifestyle.

In addition to focusing exclusively on consumption needs, existing measures are designed to estimate the amount of savings needed for a single purpose such as retirement or a period of unemployment. More comprehensive measures are valuable because people save for multiple purposes simultaneously. For example, young workers may save for homeownership and retirement at the same time. A measure designed to track saving for a single purpose is unable to account for competing individual or household savings needs (Samwick 2009). In addition, comprehensive measures better capture variation by family type in the levels of savings needs. For example, the savings needed to meet the college costs for a family with five children will be greater than the savings needed to meet those costs for a family with one child, and the family with five children will also have higher consumption needs (Scholz and Seshadri 2007). Savings needs assessed for a single purpose (e.g., the amount of savings needed for retirement) are unlikely to show differences among different family types.

Recognizing the need for more comprehensive instruments, some scholars have proposed asset-based measures to estimate the savings required for economic development, short-term consumption, and long-term consumption. One such proposal comes from Shapiro, Oliver, and Meschede (2009). In detailing the Asset Security and Opportunity Index, they propose two new measures: asset security and asset opportunity. Their definition of asset security is similar to that of asset poverty in that the asset security index assesses the net financial assets needed for a family to get through a time of unemployment. However, the threshold for asset security is higher than that for asset poverty: a family is asset secure if the value of its assets is greater than or equal to 75% of median basic expenses (e.g., food and housing) for three months. They define asset opportunity as the level of assets required to make investments "for enabling opportunities" (p. 2). The asset-opportunity measure is used to estimate the level of assets needed to meet the average cost for two years of public-university education, the average down payment for a median-priced home, and the

average cost to start a business. Shapiro et al. (2009) estimate that each of those investments requires about \$12,000.¹

In *Middle Class in America*, the US Department of Commerce, Economics and Statistics Administration (2010) proposes two asset-based measures: savings for college education and savings for retirement. These differ from other asset-based measures in that they are used to estimate the respective amounts that families must save annually to meet the eventual costs of a child's college education and parents' retirement. The report demonstrates how families in three income categories (lower-middle, middle, and upper-middle) can achieve similar lifestyles by consuming the same middle-class staples, which differ by cost and quality. For example, married couples are assumed to drive two cars, regardless of their income, but the value of their cars is assumed to vary by income category: the value of cars owned by couples in the lower-middle income category is assumed to be lower than the value of cars owned by couples in the upper-middle category. The department also calculates separate college and retirement savings amounts based on family income. It is assumed that college choices of children from high-income families differ from those of children from low-income families; the department also assumes that all families need retirement income equivalent to 50% of working-age income to meet their basic consumption needs and maintain their lifestyle in retirement. Across the family income categories, the estimate of annual college savings, reduced by the projected amount of college financial aid, ranges from zero for single-parent families to \$6,800 for high-income two-parent families. The report estimates that single-parent families should be saving 1.2%–2.0% of their annual income for retirement and that two-parent families should be saving 2.0%–3.3% of it for that purpose (US Department of Commerce, Economics and Statistics Administration 2010). Although the report's approach is innovative, it estimates savings goals only for education and retirement; it does not estimate the savings needed for short-term economic security (precautionary savings) or that required for purchase of a home, but precautionary savings can prevent a family from falling out of the middle class during times of financial hardship, and homeownership is a major component of development.

Building on these efforts, we suggest a comprehensive set of savings goals that serve as components of a measure of economic well-being. They include goals for precautionary, retirement, homeownership, and education savings. We calculate both monthly and total savings amounts required to reach each goal. To reach savings goals, families need to know how

1. Throughout this study, estimates are presented in US dollars.

much they must save each month and year. They also need to understand opportunity costs inherent within each of their savings goals. So too, policymakers who would encourage asset building need to understand savings goals to develop appropriate policy tools (e.g., by adjusting annual limits in tax credits for college savings).

SAVINGS GOALS FOR ECONOMIC SECURITY AND DEVELOPMENT

In constructing savings goals for economic security and development, we focus on precautionary, retirement, homeownership, and education savings because results from the Survey of Consumer Finances indicate that respondents identify these as the four most common motives for saving. Liquidity (precautionary savings, 35%) is most frequently mentioned as the main motivation for saving, followed by retirement (30%) and education (8%). Saving for the purchase of a home (3%) is mentioned less frequently than are the other reasons, but a majority of the respondents were homeowners at the time of the survey (67%) (Bricker et al. 2012).

We set a savings goal for each component (total amount of savings needed) and then calculate the monthly savings amount required to meet each goal. We identify relatively conservative savings objectives for families: meeting basic consumption needs during a period of unemployment (precautionary savings); retiring with the minimum amount of savings required to pay for basic needs and to age in one's own home (retirement savings); making a 20% down payment and paying closing costs for a home priced at the (national) lowest quartile (homeownership savings); and meeting the cost of attending a local two-year college and (after transferring) a four-year state university, with attendance financed in part by student earnings.

In calculating savings goals, time is an important factor. Therefore, we first consider the duration of saving—i.e., the number of years over which families will save for each goal. Second, we adjust estimates by discounting the future value of money because the value of one dollar today is likely to be higher than the value of one dollar in the future. Third, we recognize that savings and investments usually result in earnings. Our calculations thus account for interest or earning rates. Finally, we use the Consumer Price Index to adjust estimates to 2010 US dollars (<http://www.bls.gov/cpi/>). Table 1 summarizes how we calculate each savings component.

TABLE 1
Four Main Savings Components

Feature	Precautionary	Retirement	Homeownership	College Education
Savings goal	Savings amount needed to meet basic needs during a typical time of job loss	Savings amount at time of retirement for a family to meet postretirement consumption needs throughout retirement	Savings amount needed to buy a first home (down payment and closing costs)	Savings amount required to finance children's college education without incurring debt
Saving length	4 years (median employee tenure)	40 years (ages 25–64)	10 years	17 years (birth to age 17)
Saving mechanism	Shortest-term (4-week) treasury bills	401(k) for workers with retirement benefit IRA for workers without retirement benefit	10-year treasury bonds	529 college savings plan
Additional resources	Unemployment Insurance benefits for those covered	Social Security benefits and (if applicable) employer matches to 401(k) savings	None	Financial aid and earnings of children during postsecondary education

IRA, individual retirement account.

Precautionary Savings

Precautionary savings represent the amount of savings needed to meet basic needs during a typical time of job loss (i.e., income shock). They differ from emergency savings for expenditure shocks such as car repair or medical expense (Chase, Gjertson, and Collins 2011). Other economic well-being measures, such as the budget standard the Basic Economic Security Tables (BEST) Index, include average annual car repair costs, and out-of-pocket health care costs as routine annual living expenses (McMahon, Nam, and Lee 2010).

In calculating precautionary savings amounts, we use information on the median unemployment spell and median employment tenure. During the complete business cycle from March 2001 through December 2007, the median unemployment spell lasted for 8.9 weeks (Bureau of Labor Statistics 2008b) and the median employee tenure was four years (Bureau of Labor Statistics 2008a).² Our precautionary savings estimates assume that workers save while employed (four years) to prepare for 8.9 weeks of

2. The most recent complete business cycle includes a contraction from March 2001 to November 2001 and an expansion from November 2001 to December 2007. We use the average duration of unemployment spells and employee tenure during the most recent complete business cycle to account for fluctuation across different phases of a single business cycle.

unemployment.³ We also assume that families accumulate precautionary savings in short-term investment accounts and that those savings earn a 2.5% annual rate of return. This rate is based on the average annual return (2001–2008) to the shortest-term (four-week) treasury bills (Board of Governors of the Federal Reserve 2015a).⁴

Calculating precautionary savings goals requires an estimate of the cost of basic consumption needs during a period of unemployment. We generate three distinct savings goals using three different estimates for basic consumption needs: the federal poverty thresholds (US Census Bureau 2010), the SPM (Garner and Gudrais 2012; Meyer and Sullivan 2012), and the BEST Index (McMahon et al. 2010). These three measures produce estimates of the consumption needs for minimum, intermediate, and maximum precautionary savings goals.

The most prominent economic indicator in the United States, the federal poverty thresholds, is calculated solely on food costs, varies only by household size, and is applicable to most American households. It is the lowest of the three living-cost estimates discussed in this study and has been considered too low to meet basic needs in the current economy (Blank 2008; Citro and Michael 1995; Madland and Bunker 2012). Developed by the US Census Bureau to supplement the federal poverty thresholds the SPM threshold is calculated using the cost of expenditures on food, clothing, shelter, and utilities. These costs are taken from the Consumer Expenditure Interview Survey. Garner and Gudrais (2012) estimate the SPM threshold for a family consisting of two adults and two children. Because no study has produced calculations for other family types, we follow the approach by Garner and Gudrais (2012) to estimate SPM thresholds for three other family types: one adult with no child, one adult with two children, and two adults with no children. For most family types, the SPM generates higher thresholds than the federal poverty thresholds, but the BEST Index produces the highest budget-based estimates of basic living cost. Its estimates are higher than those generated by Wider Opportunities for Women's Self-Sufficiency Standard, the Economic Policy Institute's Basic Family Budget, and the National Center for Children in Poverty's Basic Needs Budget (Insight Center for Community Economic Development 2013).

3. Since the recession that started with the global financial crisis in 2007, unemployment spells have been much longer than 8.9 weeks. For example, the median unemployment spell was 18.2 weeks as of August 2012 (Federal Reserve Bank of St. Louis 2014). We decided not to use unemployment duration information from the recent economic crisis because few families have enough savings to meet consumption needs for such an atypically long period of unemployment.

4. We use the annual return averaged for the 2001–2008 period because the rates of return have been unusually low since the onset of the 2008–2009 recession.

In calculating precautionary savings goals, we assume a 3% annual inflation rate for four family types as listed above. Because the amount of precautionary savings needed to weather a spell of income loss will depend upon whether Unemployment Insurance (UI) benefits are available, we estimate precautionary savings goals separately for those who receive UI benefits and those who do not. Those covered by UI receive benefits equivalent to approximately 34% of their preunemployment wages, up to the maximum benefit. The national median for that maximum is \$1,688 per month (US Department of Labor 2010); thus, the monthly precautionary savings goals for recipients are calculated with the additional assumption that 34% of needs during unemployment are financed by UI benefits and that families draw upon precautionary savings to meet the remaining expenses.

Table 2 presents precautionary savings goals and monthly savings amounts for selected family types. The lowest estimated savings goals are derived from the federal poverty thresholds and the highest are derived from the BEST Index. For example, a two-adult, two-child family covered by UI must set aside precautionary savings of \$55 per month to meet its needs at the level of the federal poverty thresholds \$61 to meet its needs at the level of the SPM, and \$170 to meet its needs at the level of the BEST Index.⁵

Retirement Savings

Retirement savings represent the amount of monthly savings that will enable workers to meet basic postretirement consumption needs while aging in their own home. The savings goal is calculated with three estimated components: the amount of money needed for basic consumption (postretirement income needs), life expectancy, and available retirement income from Social Security.

In estimating postretirement consumption needs, this study uses the Elder Economic Security Standard Index (Elder Index), which measures the cost of living for older adults residing in communities (i.e., noninstitutional settings) (Russell, Bruce, and Conahan 2006). The Elder Index uses

5. Because the annual return rate may be higher or lower than the rate (2.5%) used in the main estimate, we conduct sensitivity tests with different rates. If a 1.0% return rate is employed, monthly amounts for precautionary savings are estimated to range from \$29 (at the level of the federal poverty rate for one adult with Unemployment Insurance) to \$288 (at the level of the BEST Index for a two-adult, two-child family without Unemployment Insurance). Under the assumption of a 4.7% return rate, estimated monthly savings amounts range from \$27 to \$267. Estimates under different return rates do not differ dramatically from those in the main analyses because of the short period of saving (4 years).

TABLE 2
Precautionary Savings Goals (in 2010 Dollars)

Family Type	Federal Poverty Thresholds						SPM						BEST					
	UI Benefits			No UI Benefits			UI Benefits			No UI Benefits			UI Benefits			No UI Benefits		
	Savings Goal	Monthly Savings	Goal	Savings Goal	Monthly Savings	Goal	Savings Goal	Monthly Savings	Goal	Savings Goal	Monthly Savings	Goal	Savings Goal	Monthly Savings	Goal	Savings Goal	Monthly Savings	Goal
One adult	1,435	28		2,181	43		1,429	28		2,171	43		3,797	75		6,677	132	
One adult and two children ^a	2,223	44		3,378	67		2,557	51		3,886	77		7,690	152		12,116	240	
Two adults	1,847	37		2,808	56		2,014	40		3,061	61		5,377	107		9,446	187	
Two adults and two children ^a	2,798	55		4,252	84		3,086	61		4,690	93		8,593	170		14,093	279	

Note: Savings goals are estimated under the assumption that a family has saved the same amount for four years.

^aBEST estimates separate costs for children at different developmental stages to reflect different child care costs: infants, preschoolers, school-aged children and teenagers, while the federal poverty thresholds and SPM do not. This table shows BEST-based estimates for families with one preschooler and one school-aged child.

actual costs of basic needs to calculate an adequate level of income for retired older-adult families. As a measure of older adults' economic needs, it is more accurate than the federal poverty thresholds because the index includes the costs of housing, food, transportation, health care, and miscellaneous items (clothing, household products, personal care products, and a landline telephone). The federal poverty thresholds underestimate older adults' consumption needs because they rely solely on food costs, assume that food costs are lower for older adults than for working-age adults, and do not take into account medical costs, for which older adults spend much more than do adults in other age groups (Russell et al. 2006).

To generate retirement savings goals, we use two distinct family types (one-adult and two-adult families, both types without children) in combination with two housing conditions (homeowner without a mortgage and renter). This combination creates four retirement scenarios. The 2006 Elder Index for the United States was \$1,261 per month for one adult homeowner without a mortgage, \$1,628 per month for one adult renter, \$1,805 per month for a home-owning couple without a mortgage, and \$2,172 per month for a couple paying rent (Russell et al. 2006). As mentioned above, we adjusted the postretirement cost of living for inflation and present amounts in 2010 US dollars.

We have the following two assumptions in calculating the number of years for postretirement consumption: individuals retire at age 65 and live as long as the Social Security Administration's Actuarial Life Table predicts (Bell and Miller 2005). Life expectancy at age 65 is estimated as 16.73 years for a man and 19.49 years for a woman. Accordingly, our estimates of the retirement savings goals are based on the assumption that working-age families headed by two adults need to save enough money to meet the needs of a two-elder family for the first 16.73 years of retirement and those of a one-elder (female-only) family for an additional 2.76 years. To estimate the retirement savings goal for a family with one older adult, we use a simple average of the life expectancies of men and women (18.11 years after age 65).

In assessing postretirement income, we assume that elder families have income from Social Security but not from an additional pension.⁶ In 2010, only 20% of private industry workers had access to employment-based pension plans (Bureau of Labor Statistics 2010). In contrast, the Social Security benefit is the most common source of income among older adults: 91% of older adults have income from Social Security (He et al. 2005). For two-adult families, we use the average value of the full monthly family

6. We discuss potential income from other retirement plans below.

benefit for retired-worker families consisting of a worker and a spouse. For worker-only families, we use the average for monthly family benefits. That average is drawn from the *Annual Statistical Supplement to the Social Security Bulletin, 2009* (Social Security Administration 2010). We estimate the present value of the retirement savings goal using the discount rate of 3%, which the Social Security Administration believes to be the most reasonable rate (Duggan and Soares 2002).

Monthly retirement savings amounts are calculated under the following assumptions: (1) an individual saves the same monthly amount of money throughout his or her career (40 years, from age 25 to 64) and (2) savings grow at a real interest rate of 3% per year. In its 2009 annual report, the Board of Trustees of the Federal Old-Age and Survivors Insurance and Federal Disability Insurance Trust Funds (2009) assumes that the real interest rate earned by the trust fund is 2.9% per year. As the monthly savings amount needed by workers whose employers offer retirement benefits (e.g., matches into a 401(k)) will differ from the amount needed by those whose employers offer no such benefits, we produce two sets of savings amounts. Dworak-Fisher (2007) estimates employers' average matches to retirement savings in 401(k) accounts, and those averages lead us to assume that employers provide a 66.06 cent match to every dollar that workers contribute into their retirement accounts. To calculate the monthly savings goal for workers whose employers provide no retirement benefits, we assume that the workers save into an individual retirement account to receive the associated income tax benefits.

Table 3 summarizes retirement savings goals and monthly savings amounts by family type and by retirement benefit availability. The table shows that, as in the case of precautionary savings, the amount of savings needed for retirement varies greatly across family types, access to retirement benefit, and housing status. The monthly savings amount ranges from \$6 (two-adult homeowner families with retirement benefits) to \$106 per month (one-adult renter families without retirement benefits).⁷ The most prominent difference is observed between homeowners and renters, as rent consumes a considerable portion of postretirement living expenses. The difference between one-adult and two-adult families is also not negligible.

7. As in the case of precautionary savings, we estimate monthly retirement savings amounts with different annual return rates: the return on retirement savings may fall short of or exceed the 3% return assumed in the main analyses. Under the assumption of a 1% return rate, estimated retirement savings amounts range from \$9 (two-adult homeowner families with retirement benefits from employment) to \$167 (one-adult renter families without such benefits). A 5% annual return rate generates monthly savings-amount estimates ranging from \$3 to \$64. If a family saves for the full 40-year period from age 25 to 65, the return rate has a sizable effect on the savings amount.

TABLE 3
Retirement Savings Goals (in 2010 Dollars)

Family Type	Savings Goal (Present Value)	Monthly Savings Amount	
		Retirement Benefits	No Retirement Benefits
Two-adult homeowner	8,667	6	9
Two-adult renter	83,674	54	89
One-adult homeowner	24,015	16	26
One-adult renter	98,090	64	106

Note: Savings goals are estimated under the assumption that a family has saved the same amount for 40 years (ages 25–64).

In part, this is because the ratio of Social Security benefits to living expenses is higher among two-adult families. Savings goals among those with employment-based retirement benefits are about 60% of the goals among those without these benefits.

Homeownership Savings

Homeownership savings are defined as the amount of monthly savings needed for a family to buy a home. The homeownership savings goal is set as the sum of down payment and closing costs. That is, we calculate the amount required for a down payment (20% of the home price) and the amount needed for closing costs (the national average is 1.9% of the home price [Bankrate 2010]). The sum of these two amounts is the homeownership savings goal.

Home prices are calculated by family size under the assumption that one or two adults need a one-bedroom home and that one additional bedroom is needed for every two children in the family. For data on US home values, we draw upon the American Community Survey and create home-value categories by number of bedrooms (e.g., a category for one-bedroom homes and another for two-bedroom homes). For each category, we use the lowest quartile (25th percentile) home price to calculate the savings goal. We use the lowest quartile home price because first-time home buyers are unlikely to purchase a more expensive home (Nam et al. 2008). We assume that a buyer saves over a 10-year period (between ages 25 and 34) because the average age of first-time home buyers is 33, and approximately two-thirds of first-time home buyers are under age 35 (Eisenberg 2008). We also assume that home prices increase by 3.4% annually. The National Housing Price Index (Federal Housing Finance Agency 2015) reports that the average house price increased 3.4% annually between 2001 and 2010.

TABLE 4
Homeownership Savings Goals (in 2010 Dollars)

Family Type	Home Price	Savings Goal	Monthly Savings
One-bedroom house (one- or two-adult families without children)	58,216	17,768	112
Two-bedroom house (one- or two-adult families with two children)	67,919	20,730	131

Note: Savings goals are estimated under the assumption that a family has saved the same amount for 10 years.

We assume that savings set aside for a home purchase earn a 5.4% annual return. This rate is equal to the return on 10-year treasury bonds averaged for the period from 1991 through 2009 (Board of Governors of the Federal Reserve 2015b).

Table 4 presents lowest quartile home prices, savings goals, and monthly savings amounts by family type. The monthly savings amount ranges from \$112 for families without a child (one-bedroom homes) to \$131 for families with two children (two-bedroom homes), and these amounts are calculated under the assumption that families save for 10 years before purchasing a home.⁸

Education Savings

Education savings represent the amount that parents need to set aside to finance children’s postsecondary education without incurring debt. Although education loans are extremely helpful for many low- and middle-income youth seeking college education, graduates are in a better position to pursue their careers and other long-term development goals if they are able to pay for college education with savings and earnings (Rothstein and Rouse 2011; Shapiro 2004).

We calculate the education savings amount that will finance a bachelor’s degree in the most economical way: living at home and attending community college for the first two years and then transferring to and living at a public (state or state-subsidized) university to earn a bachelor’s degree.⁹ The student attends community college in the city or county of his or her

8. We conducted sensitivity tests with different return rates. If the rate of return is 2.9%, adult-only families need to save \$128 every month for 10 years and families with two children need to save \$149. If the rate of return is 7.9%, the respective monthly savings amounts for those family types are \$98 and \$114.

9. More than 60% of community college students live with their parents (Choy et al. 2003).

residence, or in the nearest county, and attends a state public university where he or she pays in-state tuition. In addition, we assume that the student attends educational institutions as a full-time student and finishes college with a bachelor's degree in four years. We assume full-time enrollment because part-time attendance is a risk factor for dropping out of college (Kazis 2002; Wei and Horn 2002).

Our estimates of college costs account for four types of expenses: (1) tuition and required fees, (2) books and supplies, (3) transportation, and (4) room and board while attending a public university. For these costs, we use the national average for public two-year colleges and four-year universities. These averages come from the National Center for Education Statistics (Snyder and Dillow 2010). We assume that college expenses in all four categories increase at the same rate as the investment return rate. Although college tuition has recently increased almost twice as fast as the general inflation rate, its rate of increase approximates the average interest rate of the 10-year US treasury bond: between the 1998 and 2008–2009 academic years, the average annual rate of the increase in college costs is 5.92% for four-year public universities and 4.96% for two-year community colleges (authors' own calculation using Snyder and Dillow 2010). The average yield for a 10-year treasury bond was 5.03% between 1997 and 2006 and 4.75% between 1998 and 2007 (authors' own calculation based on Board of Governors of the Federal Reserve System 2015b). The yield rates were much higher before 1997 and much lower after 2007.

Financial aid and student earnings are important economic resources for college education. Our calculations assume that these resources reduce the amount parents need to save for their children's postsecondary education. On average, financial aid grants reduce a student's cost of attending college by 22.6% (Choy, Berker, and Carroll 2003). The assumption that families receive financial aid may result in overestimates of the savings needs for low-income and low-wealth families because the level of financial aid offered to a student is largely based on the economic resources of his or her family (i.e., expected family contribution). Children from low-income and low-wealth families are likely to receive larger than average grants. It should be noted, however, that even generous financial aid is rarely sufficient in financing college education: at universities that provide full financial aid (grants) to cover college costs beyond expected family contributions, low-income students borrow an average of \$5,000 during their college studies (Rothstein and Rouse 2011).

In addition, college students have substantial earnings, as many work long hours even during the school year (Choy et al. 2003). To calculate the economic resources available for college education, we use the

TABLE 5
College Education Savings Goals for Each Child (in 2010 Dollars)

Assumptions on Children's Earnings	Savings Goal	Monthly Savings Amount
Average earnings of college students	8,428	41
Working 20 hours/week for 48 weeks/year	10,986	54

Note: Savings goals are estimated under the assumption that a family has saved the same amount for 17 years (birth to age 17).

average of earnings reported by undergraduate students (Choy et al. 2003). Because working many hours while attending college may impede academic achievement and increase the risk of dropping out (Bradburn 2002; Wei and Horn 2002), we calculate a second savings goal, which is based on the assumption that students work only 20 hours per week for 48 weeks per year and earn the current federal minimum wage (\$7.25 per hour).

In estimating the monthly savings amount needed for a college education, we assume that a family saves for 17 years (from birth to age 17) in a 529 college savings plan account (Clancy, Cramer, and Parrish 2005). We assume that college costs increase at a rate equal to the saver's return on investment, and we estimate the monthly education savings amount by dividing the savings goal by 204 months (12 months per year for 17 years).

Table 5 displays monthly savings amounts for one child's college education for 17 years under two different assumptions about students' earnings: (1) that the student's earnings are equivalent to the average earnings of college students and (2) that the student works 20 hours per week at the minimum wage for 48 weeks per year. The monthly savings amount for a child is \$41 under the first assumption and \$54 under the second.¹⁰

Total Savings Amount by Family Type

To estimate the total amount of savings required for a family's economic security and development, we sum the savings goals from the four components: precautionary, retirement, homeownership, and education savings. Although not every family will simultaneously pursue all four savings

10. To assess the effect of assumptions about rate of return, we estimate monthly college-savings amounts under two other assumptions. If the annual return rate were 2% lower than the rate of college-cost increase, families would need to save \$58 (with average student's earnings used) and \$75 (with earnings from 20 hours a week for 48 weeks per year) a month for 17 years. If the return rate were 2% higher than the college-cost increase rate, the required monthly savings amount would be \$35 and \$45, respectively.

components, summing the goals provides insight into the challenges, trade-offs, and consumption constraints that families may face as they save. Savings goal sums may also suggest the nature of policy responses that can successfully lead to economic security and development.

Because families with different compositions have different needs, we generate values for four family types, which vary by number of adults and children. We then estimate two sets of total savings amounts—a minimum and a maximum—for each type of family.

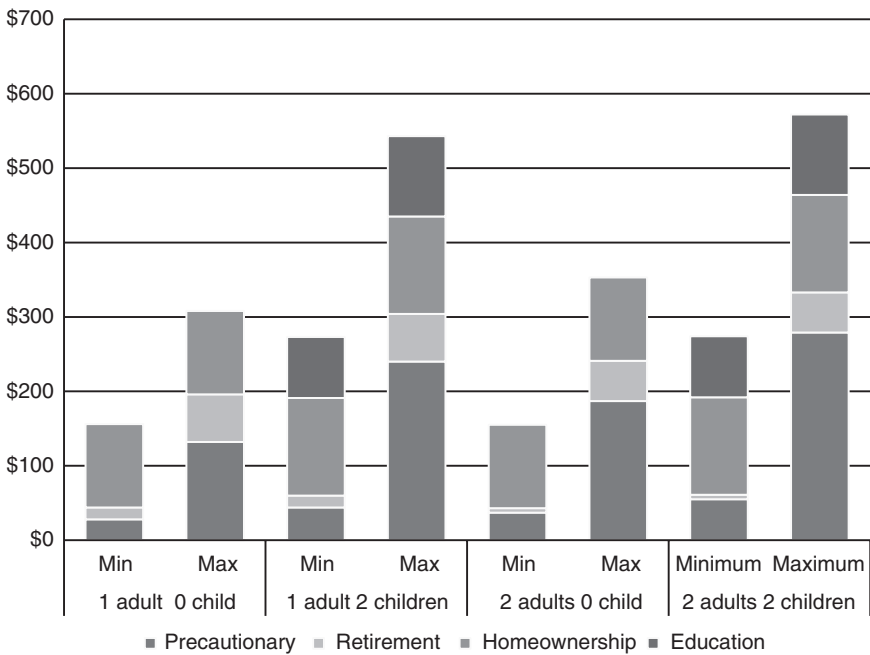
In calculating minimum amounts, we assume minimal savings goals and maximum access to resources. A family's precautionary savings allow it to consume only at the level of the federal poverty thresholds during an unemployment spell, but access to UI increases the family's resources and decreases savings needs. The retirement savings amount is equivalent to that for homeowners without a mortgage payment. The education savings amount is calculated with the assumption that college students have average earnings.

In calculating maximum amounts for total savings, we assume that the families have ambitious savings goals as well as limited access to resources for precautionary, retirement, and education savings. A family's precautionary savings allow the members to consume at the relatively high BEST Index threshold during an unemployment spell, although the family lacks access to UI. The retirement savings amount is calculated for renters. Education savings are supplemented with student earnings from 20 hours of work per week for 48 weeks per year at the minimum wage.

In our estimate of the savings needed for a home purchase, all families face the same assumptions and requirements. We thus developed only one homeownership savings amount, rather than a minimum and maximum amount, for each family type.

Figure 1 presents the total monthly minimum and maximum savings amounts by family type. For each total amount, the figure shows the share devoted to each savings goal. The monthly total savings range from \$155 (the minimum for two-adult families with no child) to \$572 (the maximum amount for families with two adults and two children). The figure illustrates that the number of children in a family has a large impact on the amounts of needed savings; the savings needed for postsecondary education, homeownership (via home size), and precautionary savings (via consumption needs) all increase with the number of children in a family. In contrast, the number of adults makes little difference to *total* savings amounts because of the trade-off between precautionary savings and retirement savings: compared with one-adult families, two-adult families need to save more for precautionary purposes but less for retirement (two-adult families receive

FIGURE 1
Total Monthly Savings Amounts by Family Type



more Social Security benefits than do single-adult families). The number of adults does not affect the savings needed for a home purchase or for a child’s postsecondary education. It should be noted, though, that the number of adults in a family can have a large impact on the family’s earnings and ability to meet savings goals.

DISCUSSION

Economic well-being measures in the United States focus mainly on short-term consumption needs. However, meeting basic short-term living expenses does not amass protection from sudden income disruptions, promote economic development, or ensure economic well-being. Thus, creating new economic well-being measures is a desirable next step. Such measures define and quantify families’ savings needs: the amounts of total savings and regular savings required to protect against income loss, promote development, and prepare for retirement.

In this study, we specify precautionary, retirement, homeownership, and education savings goals. No previous asset-based economic measure

or set of measures includes all four types of savings. Furthermore, we calculate monthly savings requirements for each type of priority. Lack of concrete information on the monthly savings amounts needed for future consumption and long-term economic development may partially explain the high percentage of families that fail to save: only 52% of families reported in 2010 that they saved in the previous year (Bricker et al. 2012). Psychologists and behavioral economists have suggested that even families with sufficient economic resources often fail to save enough because of forecasting errors (Chase et al. 2011). This study proposes a dynamic approach to establishing savings goals. The proposal enables families to plan and save for their needs. Estimates of savings needs can also be useful in the development of social policies that encourage and perhaps directly assist saving and asset accumulation. For example, policymakers might consider savings recommendations when specifying the amount of savings within state 529 college savings plans that is eligible for income-tax deductions. Savings goals may also assist policymakers in determining the amount of public funds to be allocated for initial deposits into Child Development Accounts. Several states have recently adopted programs that create those accounts and provide funds for initial deposits (Clancy, Sherraden, and Beverly 2015).

Estimates in this study show that families should save between \$155 and \$572 every month to meet all four savings goals. Across the four savings goals, monthly savings amounts range from \$6 per month (retirement savings for two adults) to \$279 per month (precautionary savings for two adults and two children). We show that savings goals differ by family type as well as by assumptions about consumption needs and access to resources. The number of children in a family greatly affects the monthly amount needed for precautionary, retirement, homeownership, and education savings. However, the number of adults in a family (whether one or two) has little impact on savings goals.

The new measures in this study are not free from limitations. First, the proposed savings goals represent conservative estimates of the amounts that families should save consistently over a long period to achieve fundamental savings and asset-building goals. Most assumptions used in calculating the four savings goals reflect common (or the most common) experiences of work, retirement, and asset development in the United States. Most of these assumptions and calculations are based on medians or averages. Therefore, the presented savings goals do not provide specific guidance for all families and do not represent the unique savings goals of any one specific family. For example, we use the median duration of US unemployment spells in calculating precautionary savings goals, but the

risks of unemployment are not identical across families (Hurst et al. 2010; Lusardi 1998). In addition, our proposed retirement savings goals account for variation in life expectancy by sex but fail to account for variation by earnings level (Waldron 2007). Similarly, we use the average grant-to-cost ratio in calculating the education savings goals, but the financial burden of college varies from family to family, and each student's financial aid package (grants and scholarship) depends largely on his or her family's economic resources (income and assets). Accordingly, this study likely overestimates education savings goals and needed savings amounts for low-income and low-wealth families whose expected family contributions (as calculated in preparing financial aid packages) are lower than average. These examples suggest that the prescriptive accuracy of savings goals and amounts will decrease further when savings goals are summed to create comprehensive, monthly, total savings values.

A second limitation of this study is that our asset-based economic measures do not account for geographic variations. Given substantial geographical differences in living costs, housing prices, and college tuition, the nation-level measures in this study are limited in that they assess individual families' savings needs.

Third, this study develops new economic well-being measures solely in the context of United States. Accordingly, the savings goals estimated in this study may not be relevant in other countries. For example, college savings goals in this study may not provide a useful guide for financial planning in Nordic countries, where students and their families pay no or very little college tuition and generous financial-support systems underwrite higher education (Organization for Economic Cooperation and Development [OECD] 2013).

Another potential limitation of this study is the complexity of the methods used to calculate the savings goals. The new savings measures require more calculation time and effort than simpler economic measures require (e.g., the federal poverty thresholds based on a single budget item, food). However, the new measures are calculated with easily accessible and regularly collected information that is published and updated by the federal government as well as other research institutions. In this case, additional investment of time and effort will pay off in that the new economic measures will broaden research into long-term economic security and development, moving saving measures beyond a narrow focus on short-term consumption needs.

Although we emphasize the roles of asset accumulation in long-term economic security and development, we recognize that it is not always possible or desirable for a family to save, especially at an early stage

of life. It is sometimes beneficial to obtain loans for economic security (e.g., car repair or purchase) and long-term economic development (e.g., education loans and mortgages). They may be especially preferable when current income is lower than permanent income and when families do not have significant savings. For example, youth whose parents have not saved for college expenses may pay for college by taking out education loans and amassing credit card debt (Samwick 2009). In such cases, the role played by access to credit is more critical in meeting consumption needs and promoting economic development than is the role played by savings opportunities. Future study may develop economic well-being measures that account for access to credit, loan availability, and the financial burden imposed by credit debt and loans on consumption and development.

The asset-based measures of economic well-being developed in this study can guide families in allocating available resources for current consumption and savings. The measures also may help families make realistic assessments concerning priorities as well as the trade-offs involved in saving and spending, although the measures are not perfectly accurate guides for families with differing economic conditions, preferences, and risk tolerances. We recommend further investigation of the measures and assumptions used to estimate needs for and access to retirement funds, financial aid, and capital. There is much variation across families. For example, it would be informative to estimate savings goals for families that finance a portion of the cost of college at a four-year state university.

Savings goals should be updated regularly. The assumptions we use to estimate savings goals are based on empirical evidence, and we conduct sensitivity tests under different assumptions. The goals should be recalculated with updated assumptions if political or macroeconomic situations shift. For example, retirement savings goals should be re-estimated if Social Security policy changes or life expectancy increases substantially. Similarly, savings goals for college education should be reassessed if college costs increase at a rates much higher than the investment return to 10-year treasury bonds. It is desirable to estimate different savings goals by different family conditions (e.g., family income and earnings).

If future research develops additional savings goals under various assumptions, financial counselors and financial educators may use these measures to guide families in developing financial plans. It would be exceptionally helpful to have an online or desktop tool that uses information from an individual or family to calculate personal savings goals for each saving purpose.

Although this study has developed savings measures solely in the US context, the study's guiding principles have implications for other

countries. As we indicated previously, this study aims at generating economic well-being measures that can be used to identify goals for long-term economic security and development. Families in other countries may have different savings goals because of different social, economic, cultural, and policy contexts. However, they also need to save to protect themselves from expected and unexpected income loss (economic security) and to improve their economic future (economic development). Social researchers might identify savings goals and estimate savings amounts in consideration of each country's unique socioeconomic structure and policy infrastructure.

New savings goals could assist researchers in assessing the financial condition of the nation's families by enabling them to investigate the percentage of families that save enough for economic security and development and to track changes in these statistics over time. New measures could enable researchers to identify geographic variation in saving patterns, and empirical research using these measures could guide development of targeted, inclusive, and progressive asset-building programs at the federal, state, and local levels. These measures could also help researchers identify who is financially vulnerable by detecting financial and demographic characteristics associated with insufficient savings. Empirical evidence based on new asset-based measures could then inform policymakers about types and amounts of savings that should be actively promoted. Such evidence could also help policymakers tailor programs and policies in ways that enable families to build assets for economic security and development. The savings targets identified by this study can also help policymakers understand the strengths and weaknesses of existing asset-related policies, making it relatively easy to identify who has benefited from existing programs and who has not.

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