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New Measures of Economic Security and Development:

Savings Goals for Short-Term and Long-Term Economic Needs

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Abstract

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. This study takes a broader view, developing precautionary, retirement, homeownership and education savings goals. Together these savings goals constitute a new set of asset-based measures of family financial well-being. Estimated savings needs depend upon family type and other assumptions, and we consider investment gains and differences in dollar values over time in our calculations. This study shows that families should save $155 to $572 every month to address all four savings needs. The number of children in a family affects total monthly savings goals considerably, but the number of adults has limited impact. The study's savings goals can assist families in making financial plans and provide target savings amounts to inform public discussion and policies.

Key words: *American Community Survey, asset measures, Basic Economic Security Tables Index (BEST Index), economic indicator, economic security, homeownership, precautionary savings, retirement savings, savings, Supplemental Poverty Measure, Unemployment Insurance, wealth, well-being*

Measures of economic well-being play critical roles in social research and policy. By demonstrating the levels at which families have sufficient resources to meet their economic needs, well-being measures help us evaluate which and how many families may need additional support, and how these statistics change over time. These measures also inform development of social policies and management of social programs by identifying unmet needs and informing program participant eligibility (Blank, 2008; Wagle, 2008).

Reflecting their importance, there has been lively debate over economic well-being measures. Many researchers have raised questions about the adequacy of the most widely used economic well-being measure, the federal poverty threshold (Blank, 2008; Citro & Michael, 1995) and proposed alternative income-based economic well-being measures that may supplement information provided by the federal poverty threshold (Short, 2011). Other researchers argue that income-based economic well-being measures alone are not comprehensive enough, and call for new indicators that estimate other aspects of economic well-being. One prominent example is discussion around economic hardship measures based on families' own reported experience of economic difficulties (Beverly, 2001; Ouellette et al., 2004). As a result, new economic hardship measures have been created over recent decades, including food insecurity measures developed with the U.S. Department of Agriculture's Food Security Core-Module Questionnaire (Bickel et al., 2000) and multi-item measures on hardship related to food, clothing, housing, and medical care (Beverly, 2001; Ouellette et al., 2004).

Among the various dimensions of economic well-being, assets and savings have received little attention. One exception is asset-poverty measures that estimate how much savings are needed in case of job loss (Haveman & Wolff, 2001; Short & Ruggles 2005). Recent empirical studies show that savings and assets are essential in ensuring economic security and improving future opportunity (Lerman & McKernan, 2008).

The lack of attention to asset and savings measures may be explained by the field's focus on short-term consumption needs. Income-based economic well-being measures (e.g., the federal poverty threshold and Supplemental Poverty Measure) have assessed the level of income needed for current consumption using a budget-based approach. That is to say, these measures identify basic needs (e.g., food and housing), estimate the cost of each essential item, and sum up the total cost of these needs (Orshansky, 1965; see also Blank & Greenberg, 2008; Short, 2011). In comparison, material hardship indexes focus on families' own experience of economic difficulties in meeting these basic needs. Instead of assuming that families would satisfy their current consumption needs if they report income larger than a certain preset income level, material hardship measures directly ask families whether or not they have experienced economic difficulties in meeting these basic needs, such as food and housing (Beverly, 2001; Ouellette et al., 2004). However, material hardship measures do not differ from income-based economic measures in that both focus solely on short-term consumption needs.

Building on existing economic measures, this study proposes a comprehensive set of asset-based economic measures that move beyond short-term consumption needs. The new measures take into account short-term consumption (precautionary savings), long-term economic security (retirement savings), and future economic development (homeownership and college education savings). 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 a specific single purpose.

Background

Like income-based economic well-being measures and material hardship measures, existing asset-based economic well-being measures focus mainly on short-term consumption needs. It is not surprising considering that 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 a storehouse for future consumption (Nam, Huang, & Sherraden, 2008). According to these theories, the main purpose of saving and asset accumulation is to prepare for income fluctuation and 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: Individuals' earnings are usually lower than their lifetime (permanent) income during early adulthood, but they increase over time as job skills and work experience improve; individuals' earnings dramatically decline in their later stages of life, after retirement. With the anticipation of earnings decline at old age, forward-looking individuals save for their postretirement consumption. As a result, individuals' saving patterns are typically "hump shaped," with workers' savings at low levels in early stages of life, at high levels in the middle stages of life, and again at low levels late in their lives, in accordance with their earnings (Ando and Modigliani, 1963; Samwick, 2009).

Precautionary saving theory is an extension of the life-cycle hypothesis. In addition to income variation across life stages, this theory acknowledges the possibility of income fluctuation, even

during the working-age stage: An individuals' income often declines due to unforeseen events such as job loss (Carroll, 1997; Lusardi, 1998). In summary, the major motivation for saving is postretirement consumption in the life-cycle hypothesis and consumption at the time of unemployment in the precautionary saving theory: Forward-looking individuals save when their current income is higher than their expected permanent income (lifetime 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).

Existing measures based on these savings theories estimate 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 in consideration of other income sources (e.g., social security benefits and pensions), expected (desirable) consumption level, life expectancy, and other factors (Congressional Budget Office, 2003; Scholz, 2006).

Another prominent asset-based measure is asset poverty. An asset poverty measure classifies a household as asset-poor if it does not have savings or wealth enough to maintain consumption needs in case of job loss. This type of measure assesses the amount of savings needed to keep a family without income above the federal poverty threshold for three months, based on an expected duration of unemployment of 2.2 to 4.2 months (Caner & Wolff 2004).

Valuable as they are, retirement savings and asset poverty measures share the same limitation as income-based indicators of economic well-being and material hardship measures: exclusive focus on consumption needs. These measures pay little attention to the roles of assets and savings in economic development that may have long-term impacts on economic well-being. For example, savings used for college education likely raises individuals' overall living standards and satisfaction throughout a lifetime. To create a comprehensive picture of overall and long-term economic well-being, economic well-being measures should include tools that assess long-term economic development. Comprehensive asset-based measures are suitable for this task because assets and savings often play pivotal roles in economic development while meeting consumption needs in time of economic hardship.

The perspective of "assets for development" considers assets and savings a key component in promoting individuals' capacity in the current economy (Sherraden, 1991; see also Nam, Huang, & Sherraden, 2008). Assets enable owners to invest for a better future, such as by financing education or new business ventures. For example, although it is often viewed in the literature simply as a form of consumption, homeownership also provides economic and noneconomic gains to its owners. In addition to consumption-related advantages, such as stable housing costs (Dusansky & Koc, 2007; Rohe & Lindblad, 2013) and a potential reservoir of postretirement consumption through reverse mortgage (Kutty, 1996), homeownership promotes long-term economic development. Homeownership is linked to positive economic and noneconomic outcomes such as residential stability, better quality of home and neighborhood environment, and heightened sense of control and social status, which in turn positively influences multiple well-being outcomes and generates a positive return on economic investment in most cases over the long term (Nam, Huang, & Sherraden, 2008; Rohe & Lindblad, 2013; Shapiro, 2001; Sherraden, 1991). Because of savings and assets' roles in long-term development and upward mobility, the U.S. Department of Commerce (2010) includes them as critical components of its definition of a middle class lifestyle.

In addition to focusing exclusively on consumption needs, existing measures have estimated savings amounts for a single purpose: either retirement or unemployment. More comprehensive measures are valuable because individuals and households save for multiple purposes simultaneously. For example, young workers may save both for homeownership and for retirement at the same time. A savings measure for a single purpose is unable to account for competing individual or household savings needs (Samwick, 2009). In addition, comprehensive measures help assess different levels of savings needs by family type more accurately than single-purpose savings measures do. For example, families with many children may have additional savings needs (e.g., savings for children's college education) while having severe savings challenges due to large consumption needs (i.e., more mouths to feed; Scholz & Seshadri, 2007). Savings needs assessed for a single purpose (e.g., retirement savings amount) are unlikely to show differences among different family types.

Recognizing the need for more comprehensive measures, some scholars have proposed asset-based measures that account for savings needs for economic development as well as short- and long-term consumption needs. In detailing the Asset Security and Opportunity Index, Thomas Shapiro, Melvin Oliver, and Tatjana Meschede (2009) propose two new measures: asset security and asset opportunity. Their definition of asset security is similar to that of asset poverty in that the 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 3 months. The Asset Security and Opportunity Index is fundamentally different from assessments of asset poverty in that it estimates the amount of economic resources needed for a family's investment for the future: the average cost for 2 years of public university education, the average down payment needed for a median-priced home, or the average cost to start a business. The estimated financial asset accumulation needed for each of these opportunities is about $12,000 (Shapiro, Oliver, & Meschede, 2009).

In *Middle Class in America*, the U.S. Department of Commerce (2010) proposes two asset-based measures: savings for college education and retirement. The Department of Commerce measures differ from other asset-based measures in that they estimate annual savings amounts required to achieve families' end goals. The report demonstrates how families with incomes typically considered lower-middle, middle, and upper-middle incomes can achieve similar lifestyles by consuming the same middle class staples, though of differing cost and quality. For example, married couples at three income levels all drive two cars, though cars of differing values. 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; and 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, college savings amounts, reduced by projected college financial aid, range from zero dollars for single-parent families to $6,800 per year for high-income two-parent families. The report estimates that single-parent families should be saving 1.2% to 2.0% and two-parent families should be saving 2.0% to 3.3% of annual income for retirement (U.S. Department of Commerce, 2010). Although the report's approach is innovative, it estimates savings goals only for education and retirement; it is not comprehensive in that it does not estimate the savings for short-term economic security (precautionary savings) that prevents a family from falling out of the middle class, and one major savings component for development (homeownership savings).

Building on these prior efforts, this study suggests a comprehensive set of measures that consists of four saving components: precautionary, retirement, homeownership, and education savings. This study calculates both monthly and total savings amounts needed to reach each goal. In order to make a sensible financial plan, families need to have proper conceptions of how much they may need to save per month or year, and to understand the opportunity cost 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 an annual limit for tax credits for college savings).

Savings Goals for Economic Security and Development

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

We set savings goals for each component (total amount of savings needed) and then calculate the monthly savings amount required to meet each goal. We establish relatively conservative objectives for families in setting each savings goal: 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 age in one's own home (retirement savings); a 20% down payment and closing costs on a home priced at the (national) lower quartile (homeownership savings); and attendance at a local 2-year college and 4-year state university, financed in part by student earnings.

In calculating savings goals, time is an important factor. Therefore, we first consider the duration of saving, 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 higher than the value of one dollar in the future. Third, we recognize that savings and investment usually result in earnings. Our calculations thus include interest or earning rates. Finally, we use the Consumer Price Index to adjust estimates to 2010 dollars.[1] Table 1 summarizes how we calculate each savings component.

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). It differs from emergency savings for expenditure shocks such as car repair or medical expense (Chase, Gjertson, & Collins, 2011). Other economic well-being measures, such as the Basic Economic Security Tables Index budget standard, include average annual car repair costs and the cost of health insurance and out-of-pocket costs as routine annual living costs (transportation cost; McMahon, Nam, &Lee, 2011).

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[1] See http://www.bls.gov/cpi/.

Table 1. Four Main Savings Components

Component	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 3% real interest rate	10-year treasury bonds	529 College Savings Plan
Additional resources	Unemployment Insurance benefits for those covered	Social Security benefits and employer matches to 401(k) savings (when applicable)	None	Financial aid and earnings of children during postsecondary education

Note: IRA = individual retirement account.

In calculating precautionary savings amounts, we use information on the median unemployment spell and median employment tenure. During the complete business cycle March 2001 to December 2007, the median unemployment spell was 8.9 weeks (Bureau of Labor Statistics, 2008*b*) and the median employee tenure was 4 years (Bureau of Labor Statistics, 2008*a*).[2] Our precautionary savings estimates assume that workers save while employed (4 years) to prepare for 8.9 weeks of unemployment.[3] We also assume that families accumulate precautionary savings in short-term investment accounts at a 2.5% annual rate of return. This rate is based on the annual return to the shortest-term (4-week) treasury bills from 2001 to 2008 (Board of Governors of the Federal Reserve, 2013*a*).[4]

In calculating precautionary savings goals, we need an estimate of the cost of basic needs to be paid for using precautionary savings. We generate three distinct savings goals using three different estimates for basic consumption needs: the federal poverty threshold (U.S. Census Bureau, 2010), the Supplemental Poverty Measure (SPM; Garner & Gudrais, 2011; Meyer & Sullivan, 2012), and the Basic Economic Security Tables Index (BEST Index; McMahon, Nam, & Lee, 2010). These three

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[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.

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

measures produce minimum, intermediate, and maximum precautionary saving goals. The most prominent economic indicator in the United States, the federal poverty threshold, is calculated solely on food costs, varies only by household size, and is applicable to most American households. It is the lowest estimate of living cost and has been considered too low to meet basic needs in the current economy (Blank, 2008; Citro & Michael, 1995; Madland & Bunker, 2012). Developed by the U.S. Census Bureau as a supplemental measure for the federal poverty threshold, the SPM threshold is calculated using expenditures on food, clothing, shelter, and utilities taken from the Consumer Expenditure Interview Survey, at the 33rd percentile of the expenditure distribution. Separate poverty thresholds are calculated for three different housing status groups (i.e., renters, homeowners with a mortgage, and homeowners without a mortgage) and thresholds are also adjusted by family size and composition using a three parameter equivalence scale (Garner & Gudrais, 2011; Meyer & Sullivan, 2012). Garner and Gudrais (2011) estimate the SPM threshold for a family with two adults and two children. Since there are no existing calculations for other family types, the authors of this paper estimate SPM thresholds for families with one adult and no children, one adult and two children, and two adults and no children, following Garner and Gudrais (2011). The SPM generates higher thresholds than the federal poverty threshold for the majority of family types. Among various budget-based estimates of basic living cost, the BEST Index produces the highest estimates: Its estimates are higher than those generated by the 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).

In calculating these three sets of savings goals, we assume a 3% annual inflation rate. We calculate precautionary savings goals and monthly savings amounts for four family types: (1) one adult and no children; (2) one adult and two children, (3) two adults and no children, and (4) two adults and two children. We estimate precautionary savings goals separately for those who receive Unemployment Insurance (UI) benefits and those who do not. Those covered by UI receive benefits equivalent to approximately 34% of their pre-unemployment wages, up to the maximum benefit. The national median for that maximum is $1,688 per month (U.S. Department of Labor, 2010); thus, their monthly precautionary savings are calculated with the additional assumption that 34% of needs during unemployment (or the maximum UI benefit, whichever is less) are financed by UI benefits and that families save for 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, precautionary savings of $55 per month is needed to meet the needs of a two-adult, two-child family covered by UI at the level of the federal poverty threshold, $61is needed at the level of the SPM, and $170 is needed at the level of the BEST Index.

Retirement savings

Retirement savings represent the amount of monthly savings that will allow workers to meet consumption needs after retirement. The retirement savings goal is the amount of total savings at time of retirement. It represents the amount that will enable a family to maintain economic security and to age in place throughout retirement. The goal is calculated with three components: (1) the amount of money needed for basic consumption (postretirement income needs); (2) life expectancy; and (3) available retirement income from Social Security.

Table 2. Precautionary Savings Goals (in Dollars)

Family type	Federal poverty threshold				SPM				BEST			
	UI benefits		No UI benefits		UI benefits		No UI benefits		UI benefits		No UI benefits	
	Savings goal	Monthly savings	Savings goal	Monthly savings	Savings goal	Monthly savings	Savings goal	Monthly savings	Savings goal	Monthly savings	Savings goal	Monthly savings
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: SPM = Supplemental Poverty Measure; BEST = Basic Economic Security Tables Index; UI = Unemployment Insurance.

[a]BEST estimates separate costs for children at different developmental stages to reflect different child care costs: infants, preschoolers, school-aged children and teenagers. The federal poverty threshold and SPM do not. Table 2 shows BEST-based estimations for families with one preschooler and one school-aged child.

In estimating postretirement consumption needs, this study uses the Elder Economic Security Standard Index (Elder Index), which measures cost of living for older adults in communities (i.e., noninstitutional settings; Russell, Bruce, & Conahan, 2006). The Elder Index uses 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 threshold 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 threshold underestimates older adults' consumption needs because it relies solely on food cost that is estimated to be lower for older adults than for working-age adults, and because it does not take into account medical costs for which older adults spend much more than other age groups (Russell, Bruce, & Conahan, 2006).

We use two distinct family types (one-adult and two-adult families) in combination with two housing conditions (homeowner without a mortgage and renter), which creates four retirement scenarios. The 2006 Elder Index was $1,261 per month for one adult homeowner without mortgage payments, $1,628 per month for one adult renter, $1,805 per month for a home-owning couple without mortgage payments, and $2,172 per month for a couple paying rent (Russell, Bruce, & Conahan, 2006). As mentioned above, we adjusted the postretirement cost of living for inflation and present amounts in 2010 dollars.

Two assumptions guide our calculations for the number of retirement years: Individuals retire at age 65 and live as long as the Social Security Administration's Actuarial Life Table predicts (Bell & 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 households have income from Social Security but not from an additional pension. In 2010, only 20% of private industry workers had access to employment-based pension plans (Bureau of Labor Statistics, 2010, Table 1, pp. 5–6). 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 benefit for retired-worker families consisting of a worker and a spouse. For worker-only families, we use average monthly family benefits, which are 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 & Soares, 2002).

Monthly 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 age 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 trust fund real interest rate is 2.9% per year. Since the monthly savings amount needed by workers whose employers offer retirement benefits (e.g., matches into a

Table 3. Retirement Savings Goals (in 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

401(k)) will differ from the amount needed by those whose employers offer no such benefits, we produce two sets of savings amounts. Keenan 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 (IRA) in order to receive income tax benefits.

Table 3 summarizes 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 type, 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). 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. This is in part because the ratio of Social Security benefit to living expenses is higher among two-adult families. Savings goals among those with employment-based retirement benefits are about 60% of 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 one additional bedroom is needed for every two children in the family. For data on U.S. 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, another for two-bedroom homes). For each category, we use the lower quartile as the home price in the calculation of the savings goal. We use the lower quartile home price because first-time home buyers are unlikely to purchase a more expensive home (Nam, Huang, & Sherraden, 2008). We assume that a buyer saves over a 10-year period (between the ages of 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. According to the

Table 4. Homeownership Savings Goals (in 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

National Housing Price Index (Federal Housing Finance Agency, n.d.), the average house price increased 3.4% annually between 2001 and 2010. We assume that savings earn a 5.4% annual rate of return. This rate is equal to the return on 10-year treasury bonds averaged for the period 1991–2009 (Board of Governors of the Federal Reserve, 2013*b*).

Table 4 presents lower 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).

Education savings

Education savings represent the amount that parents need to set aside in order 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 & 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 2 years and then transferring to and living at a public (state or state-subsidized) university to earn a bachelor's degree.[5] The student attends community college in the city or county of his or her 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 child attends educational institutions as a full-time student and finishes college with a bachelor's degree in 4 years. We assume full-time enrollment because part-time attendance is a risk factor for dropping out of college (Kazis, 2002; Wei & Horn, 2002).

College costs consist of four items: (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 college cost for public 2-year college and 4-year universities. These averages come from the National Center for Education Statistics (Snyder & Dillow, 2009). 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 U.S. treasury bond: Between the 1998 and 2008–2009 academic years, the average annual increase rate for college costs is 5.92% for 4-year public universities and 4.96% for 2-year community colleges (authors' own calculation using Snyder & Dillow, 2009). The average yield for a 10-year treasury bond was 5.03% between

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[5] More than 60% of community college students live with their parents (Choy, Berker, & Carroll, 2003).

Table 5. College Education Savings Goals for Each Child (in 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

1997 and 2006 and 4.75% between 1998 and 2007 (authors' own calculation based on Board of Governors of the Federal Reserve System, 2013b). 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 supplement parents' savings. On average, 22.6% of college cost is financed with financial aid grants that are not to be repaid (Choy, Berker, & Carroll, 2003). Using the average ratio of financial aid to college costs, we assume that 22.6% of college cost will be paid with financial aid grants. This assumption may overestimate savings needs for low-income and low-wealth families: Because the level of financial aid to a student is determined largely based on families' economic resources (i.e., expected family contribution), children from these families are likely to receive larger amounts of grants than average. It should be noted, however, that even generous financial aid is rarely sufficient in financing college education: At a university that provides full financial aid (grants) for the college costs beyond expected family contribution, low-income students' average education borrowing during college is $5,000 (Rothstein & Rouse, 2011).

In addition, college students have substantial earnings, as many work long hours even during the school year (Choy, Berker, & Carroll, 2003). To calculate the economic resources available for college education, we use the average earnings of undergraduate students reported in Susan Choy and colleagues (2003). Because excessive work may decrease academic achievement and increase the risk of dropping out of college (Bradburn, 2002; Wei & Horn, 2002), we also generate a second set of savings goals under the assumption that youth work only 20 hours per week for 48 weeks per year. We assume that they earn the minimum wage ($7.25 per hour).

In estimating the monthly savings amount for college education, we assume that a family saves for 17 years (from birth to age 17) and uses 529 college savings plan accounts (Clancy, Cramer, and Parrish, 2005). Because we assume that college costs increase at a rate equal to the saver's return on investment, 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 savings amounts for one child's college education 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 for the minimum wage. The monthly savings amount for a child is $41 under the first assumption and $54 under the second.

Total savings amount by family type

In order to estimate the total amount of savings needed 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
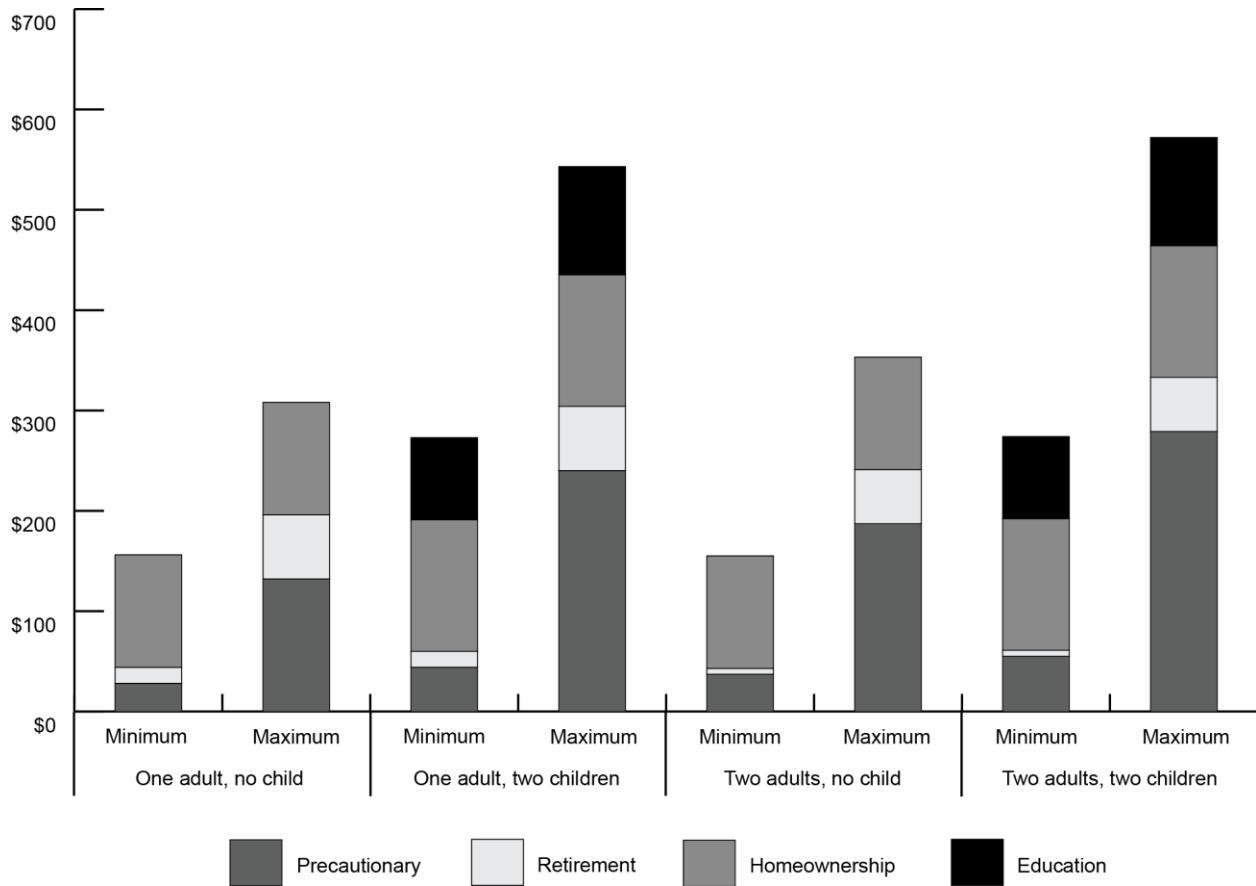
Figure 1. Total monthly savings amounts by family type

four savings components, summing the savings goals also provides insight into challenges, trade-offs and consumption constraints families may face as they save. In an educational or financial counseling context, summing savings goals for the four savings components will help families realize the cost of savings and asset development and the importance of priority setting, how much they need to save regularly and whether they are meeting their savings goals. The savings goal sums may also suggest the nature of policy responses that can successfully promote the several savings leading to 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 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 threshold 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, while 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.

All families face the same assumptions and requirements about saving for a home purchase. We 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 demonstrates that the number of children in a family has a large impact on total amounts of needed savings; the savings needed for postsecondary education, homeownership (due to larger home size), and precautionary savings (due to larger 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 (due to larger Social Security benefits). 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 number of adults can have a large impact on a household'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 assure economic well-being because doing so does not protect families from sudden income loss and does not promote economic development. Accordingly, it is imperative to develop new economic well-being measures that detail families' needs for savings—the amounts of total savings and regular savings needed to protect against income loss, to prepare for retirement, and promote development.

To meet the need for asset-based measures of economic well-being, this study developed precautionary, retirement, homeownership, and college education savings goals. No other existing asset-based economic measure or set of measures includes all four types of savings.

Furthermore, this study calculates monthly requirements for each type of savings. Lack of concrete information on monthly savings amounts needed for future consumption and long-term economic development may partially explain the high percentage of families that have failed to save: Only 52% of families reported in 2010 that they had saved in the previous year (Bricker et al., 2012). Behavioral economists and psychologists have suggested that even families with sufficient economic resources often fail to save enough because of forecasting errors (Chase, Gjertson, & Collins, 2011). The dynamic approach to establishing savings goals proposed here enables families to perform the planning critical to savings and asset accumulation. Estimates of savings needs are also useful in developing social policies in that such estimates indicate savings amounts governments should

encourage, if not help, families to save (e.g., recommended savings amounts might be used to inform the amount of savings eligible for income-tax deductions within state 529 college savings plans).

Estimates in this study show that monthly savings amounts among the four savings goals range from $6 per month (retirement savings for two adults) to $279 per month (precautionary savings for two adults and two children), and that families should save $155 to $572 every month to meet all four saving goals. This study also shows that savings goals differ by family type and assumptions about consumption and access to resources (e.g., UI and a 401(k) plan). Study estimates also indicate that the number of children in a family greatly affects the monthly amount needed for precautionary, retirement, homeownership, and education savings. However, whether a family has one or two adults has little impact.

The new measures developed in this study are not free from limitations. First, savings goals in this study are estimates for typical families, and may not provide good guidance for all families. For example, we use median unemployment duration in calculating precautionary savings. The risk of unemployment or income loss, however, is not identical among families (Hurst et al., 2010; Lusardi, 1998). Similarly, this study uses the average grant-to-cost ratio in calculating education savings. Not every family, however, has the same level of financial burden because financial aids (grants and scholarship) depend largely on families' economic resources (income and assets). Accordingly, this study likely overestimates education savings goals and amounts for low-income and low-wealth families whose expected family contributions within financial aid calculations are lower than average. Second, this study has developed asset-based economic measures without considering geographic variations. Considering substantial differences in living costs, housing prices, and college tuition across geographic areas, the national-level measures in this study are limited in assessing individual families' financial conditions.

While emphasizing the roles of savings and 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), especially when current income is lower than permanent income and when families do not have savings. If parents do not have any savings to support their education, a financial goal for young adults may be keeping education loans and credit card debt to a minimum level while investing in their human capital, rather than maximizing savings in the sacrifice of their college education (Samwick, 2009). In this case, access to credit plays a more critical role in meeting consumption needs and promoting economic development than savings opportunities play. Future study may develop economic well-being measures which include access to credit and loan availability and the degree of financial burden credit and loans impose on consumption and development.

Asset-based measures of economic well-being developed in this study can guide families in allocating available resources for current consumption and savings. Measures also may help families make realistic assessments concerning priorities and trade-offs involved in saving and spending, although they are not perfectly accurate guides for families with differing economic conditions, preferences, and risk tolerances. Further investigation of estimations under different assumptions are recommended to address families whose needs or access to retirement funds, financial aid or capital are greatly different from the mean. For example, savings goals for families which finance a portion

of college education for four years spent entirely at state public universities would be informative, considering that a substantial proportion of families plan and finance their children's higher education this way.

Savings goals should be updated regularly. We estimate savings goals with assumptions based on empirical evidence. When political or macroeconomic situations shift, savings goals should be recalculated under new assumptions. For example, retirement savings goals should be reestimated if Social Security policy changes. Similarly, college education savings goals should be reassessed if college costs increase at a higher rate than the investment return to 10-year treasury bonds. If future research develops additional savings goals under various assumptions, financial counselors and financial educators may use these measures in guiding families' financial plan development. An online or desktop calculator tool would be extremely helpful for calculating personal savings goals for each saving purpose based on financial and other information provided by individual families.

New savings goals may assist researchers in assessing the financial condition of the nation's families by enabling them to investigate what percentage of families save enough for economic security and development and how the trends on these statistics change over time. These measures will 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 can then inform policymakers about types and amounts of savings that should be most actively promoted, and may help policymakers tailor programs and policies in helping families build assets for their economic security and development. Researchers may also be able to identify, as data allows, saving tendencies and needs by geographic location, and empirical research using these measures will guide development of targeted, more inclusive and progressive asset-building programs at the federal, state, and local levels. The savings targets advanced by this study can also help policymakers understand the strengths and weaknesses of existing asset-related policies by identifying who has participated in and benefited from existing programs and who has not. In addition, the new measures can help policymakers create new policies and programs, or reform policies, such as state and federal public assistance programs, that have restrictive asset-based eligibility tests which discourage low-income families from accumulating assets.

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