Savings beyond six months

Laura Coogan
Nicholls State University

Krisandra Guidry
Nicholls State University

ABSTRACT

For workers whose incomes are lost or reduced during an economic downturn, emergency financial reserves provide for daily expenses. These reserves would also cover moving and/or educational expenses that the worker may need in order to re-enter the job market without requiring the sale of assets. The long-standing "rule of thumb" is that savings of six months of expenses are sufficient as an emergency reserve. However, for workers in their 40s and 50s, this does not appear to provide enough security. Rather, saving should become a permanent habit throughout the work life, and reserves should increase as the worker ages. Our primary suggestion is that after the initial goal of six months of savings is reached, workers should continue to increase their liquid reserves at the rate of one additional month of consumption for each year of their careers.

Keywords: savings, unemployment, income interruption, job loss

INTRODUCTION

The recent Great Recession provided many workers, perhaps for the first time in their careers, the experience of an economic shock. During this downturn, unemployment rose while home values and the stock market declined. For workers whose income was lost or reduced, this period was filled with economic challenges. The goals of this paper are to provide guidance to workers on how to best prepare for similar events in the future and challenge the long-standing "rule of thumb" that savings of six months of expenses are sufficient as an emergency reserve. While six months of reserves are an admirable financial goal for individuals at the start of their work life, it does not appear to provide enough security for workers as they reach their 40s and 50s, and we propose an alternative level of highly-liquid savings. With the life cycle of the average worker in mind, we believe that (1) saving should become a permanent habit throughout the work life, and (2) the period that consumption reserves cover should increase as the worker ages. Our primary suggestion is that after the initial goal of six months of reserves is reached, workers should continue to increase their liquid reserves at the rate of one additional month of consumption for each year of their careers.

When estimating what is the appropriate level of short-term (or non-retirement) savings, there appears to be a great deal of variance between what households believe, financial gurus support, and this paper proposes. According to the 2010 Survey of Consumer Finances ("SCF"), just over 50% of U.S. households save. While the SCF respondents recognize liquidity as an important reason to save, the median ratio of estimated emergency savings to usual annual income was 10.8%, or just over one month of income (Bricker, et al, 2012). This level of reserves is below the six months of expenses rule of thumb and will likely be inadequate for a worker caught in an economic downturn or other period of income interruption.

This paper aims to fill a void in the literature as there is almost no discussion on the need for savings and financial reserves between the basic emergency fund and retirement investments. This discussion includes the details on the reasons to save, how much to save outside of retirement accounts, and where to hold these reserves as the worker achieves our recommendations. This paper concludes by highlighting the advantages of the higher level of personal reserves.

REASONS TO SAVE

The primary reason for greater short-term savings is to minimize the economic shock and personal stress of a mid-career income interruption. Without liquid assets, a worker who loses his job faces both interruption loss of earnings and a loss of borrowing power. If the income shock occurs during an economic downturn, the worker may also face at least two additional problems. First, any assets that are pro-cyclical and have pricing volatility (such as equities and real estate) are likely to be priced below their recent peak. If the worker needs to convert these assets to cash during a downturn, he will be forced to "sell low". Second, during an economic downturn, an unexpected period of unemployment may be longer than an unemployment period at the peak of the business cycle. In addition to these immediate market forces, research has shown that mid-career labor market interruption can materially change the expected pattern of earnings and savings throughout the work life and retirement (Faber 2005, 2010). For all of these reasons, increased financial resources provide added security and flexibility that can assist the worker through the period of income interruption.

Four factors may combine to negatively impact a worker's career and financial well-being. The first three are labor market factors that greatly affect earnings and savings throughout the worker's life: probability of job loss, length of unemployment, and level of earnings the worker can obtain when he/she returns to the labor market. For workers in their mid-30s through their mid-50s, trends over the past few decades in the U.S. labor market (as well as the unemployment statistics from the most recent business cycle) all lend support for the need for greater levels of short-term savings. The fourth factor, how the volatility of asset prices reflects the business cycle, provides another reason why workers should consider greater levels of short-term savings. Each of these factors is discussed below.

Probability of job loss

Several characteristics are correlated with the probability of job loss (Faber, 2010). Job loss is more common in the private sector (as compared to public sector); furthermore, job loss is inversely related to tenure and education level. However, after controlling for these three factors, job loss frequency increases with age. While it is true that younger workers are more likely to lose or switch jobs, workers in the 55 to 64 age group have a rate of job loss that is about 30 percent higher than workers in the 25 to 34 age group (holding the characteristics of tenure, education, and public/private employer constant) (Faber, 2010).

Additionally, as workers age, the probability of illness and medical complications increase, often leading to unemployment and income interruption. While this may not be classified as job loss or job destruction, the worker still suffers an unplanned break from the labor market. Recent academic research and news articles have reported that medical-related situations (including bills for services, the need to care for a family member, and periods of lost income) are a major reason for personal bankruptcy.[1] While the economic hardship associated with medical complications is outside the scope of this paper, short-term reserves can reduce the financial problems and stress of both income interruption and uninsured losses.

The frequency of job loss is not well studied, nor is it reported in the monthly employment statistics; however, three very different sources support that approximately 5% to 10% of workers are non-voluntarily terminated from their jobs each year. First, a relatively simple measure of job loss is the ratio of new claims for unemployment insurance as compared to the number of workers covered by unemployment insurance. From 1984 through 2013, that ratio has varied between 12% and 22%. This indicates that more than 10% of workers lose their job through no fault of their own.[2] Figure 1 displays this ratio from 1980 through 2013, based on the authors' calculation and data from the U.S. Department of Labor. A second measure is the ratio of jobs destroyed to existing jobs. Research in this area indicates, over the same time period, 5% to 6% of jobs were destroyed each year (Davis, et al, 2008).[3] Finally, it has been reported that between 2% and 4% of workers reported a non-voluntary loss from private-sector

[1] See Himmelstein, et al, (2005), Mangan (2013), Cussen (2010), and Factcheck.org (2008).
[2] For example, in 2008 there were approximately 21.6 million new claims for unemployment insurance throughout the year while the number of workers covered by UI average 133.5 million throughout the year. This results in a ratio of 16.2%. This method include seasonal workers, who may have more than one claim in a calendar year, and include workers who claim unemployment insurance but may not be eligible for the payout. For these reasons, this estimation may overstate the probability of job loss. From 1980 to 1983 period, this ratio was higher.
[3] See Figure 4 in Davis, et al (2008).

employment each year from 1981 through 2007 (Farber, 2010).[4] As expected, the probability of job loss or job destruction is greater during recession years.[5]

Length of unemployment

Once a worker becomes unemployed, the length of the unemployment becomes a contributing factor to the worker's overall financial status, and it appears that the length of the unemployment spell increases with age. According to a 2012 GAO report, since the 2008 recession, the number of workers unemployed for more than 26 weeks (considered as the long-term unemployed) has increased for workers of all ages. However, for unemployed workers over 55 years old, 55% have been looking for work for more than six months, as compared to 47% of unemployed workers under 55 (GAO, 2012). Although the overall unemployment rate is lower for older workers as compared to younger workers, it appears that as a worker ages, the time to find a new job increases

Level of earnings

The GAO report also states that the unemployment event, combined with the length of unemployment, contributes to the level of a worker's earnings when he or she returns to the labor market. During the recent recession (December 2007 to June 2009), a comparison of earnings before and after job displacement shows that the median earnings replacement rate for workers aged 55 to 64 was 85%, while the comparative statistic for 25 to 54 year olds was 95% (GAO, 2012). Other research has found that the average decline in real weekly earnings averages as much as 13% for all workers, with a slight variance across educational levels (Faber, 2005). These reductions in average earnings are in addition to the loss of income experienced during the period of unemployment.

Business cycle and asset value

The fourth factor that impacts the worker's financial well-being, how the business cycle tends to combine job loss with low asset values, is shown through a comparison of annual changes in the U.S. unemployment rate and the S&P 500 Index ("S&P"). In Figure 2, the annual January to January basis-point change in the unemployment rate is shown with percentage changes in the S&P of the same year. Seventy percent of the time, an inverse relationship was observed between the unemployment rate and the S&P (e.g., when the S&P increased, the unemployment rate decreased).[6] As noted above, these trends are associated with the business cycle, which is most likely the underlying cause of both the changes in the unemployment rate and the stock index.

[4] See Figure 6.13 in Farber (2010).
[5] Recession periods based on NBER classification: 1980, 1981 - 1982, 1990 - 1991, 2001, 2007 - 2009
[6] The correlation coefficient for this analysis was -.32, and similar results are obtained when the change in unemployment rate is lagged by one year.

HOW MUCH TO SAVE

On average, the U.S. does not appear to have a culture that strongly supports personal savings: just over 50% of U.S. households save. The percentage of families who saves tends to be pro-cyclical, and higher income households have a higher probability of saving. Since 2001, the percentage of families in the lowest income quintile who saved varied from 30.0% to 34.0%, while in the top decile, between 80.6% and 84.8% families saved (Bricker, et al, 2012). The SCF respondents recognize liquidity as an important reason to save and report that the dollar amount of savings a household would need in case of emergency increases with income. However, the average estimate from each income quintile with respect to the percentage of income needed for emergencies was fairly consistent. Estimates for emergency savings varied from 8.9% to 14.1% of usual annual income (or about one to two months of income), but the percentage of income needed for emergencies did not monotonically increase or decrease with income quintile. As mentioned previously, the median ratio of estimated emergency savings to usual annual income was 10.8% (ibid).

Perhaps the low savings to income ratio is more understandable when one examines the mechanics of savings. Let's consider the time and effort required to build a six-month consumption reserve. Assume that a young worker (someone entering the labor market for the first time) agrees that having reserved funds for emergencies is a reasonable and important goal. If this worker saves 10% of after-tax earnings while consuming the remaining 90%, it would take four and one-half years of steady earnings and savings to accumulate assets equivalent to six months of consumption. Thus, reaching a goal of six months of consumption reserves is an endeavor that takes several years.[7] Given this situation, perhaps a worker should strive to make saving a life habit, more so than a goal of a specific dollar amount or consumption ratio.

It should be noted that if this worker has real growth in earnings, he would need to either have a higher savings rate or more time to reach this same goal (as compared to the worker with steady earnings). The reasoning is simple: If a worker continues to save 10% of after-tax earnings and labor market earnings have real growth, the level of consumption increases over time and more reserves are required to ensure the same period of consumption is available from the reserves.

Returning to the assumption that this worker values savings as well as consumption, is this standard of six-months of expenses enough? While there may not be an absolute level of reserves or a saving ratio that is optimal for all workers, we are proposing an alternative rule of thumb. Once the worker has achieved the base savings goal of six months of consumption, the worker should continue to save an additional month of consumption per calendar year throughout his work life. This additional saving should be enough to cover both the increases in consumption (based on the assumption that earnings and consumption increases with age) and the additional savings (as we are recommending that older workers have greater savings as a percentage of annual consumption).

As an example, consider a worker who has completed his education and initial job sorting by age 25 and has zero real earnings growth. At the 10% saving rate noted above, this worker would have achieved the initial reserves by age 30. Developing this example in more detail, a

[7] It is assumed that short-term assets provide 0% real growth. As of this writing (2014), a real return of zero rate may seem unreasonable high as saving accounts and many other near-term assets are providing returns below the CPI inflation rate, but this assumption is for simplification. As expected, with a higher savings rate, this goal could be reached sooner.

30-year old worker who is consuming $30,000 per year needs to increase his six months of consumption reserves from $15,000 as he transition to a 40-year old worker with the same real consumption of $30,000 per year. The older worker would be better prepared with a reserve level equal to 16 months of consumption (or $36,000 saved). While the reserves for the older worker may seem high, average annual savings for this worker throughout his thirties is just over $2,300 per year, which is less than this worker saved during the first few years of his career. More details are provided in Table 1, which shows consumption levels and suggested saving reserves throughout the career of a worker with zero real annual earnings growth.

For workers with positive real earnings growth, the savings rate needs to be higher than the one used by the worker with zero real annual growth in earnings and consumption. The higher savings rate is necessary so that the previously saved reserves increase and maintain their relative level (or months of consumption) with the worker's contemporary level of earnings and consumption. If workers with 1% average real earnings growth (which is close to the historical growth rate for white-collar workers) maintain the 10% annual saving rate, the reserves will be slightly higher than the "one month per year" saver with zero earnings growth. This worker will accumulate just over 39 months of reserves by age 60. Alternatively, following the "one month per year" rule provides the worker with real earnings growth which will accumulate slightly lower reserves than the zero earnings growth worker (or approximately 30 months of consumption at age 60). Tables 2 and 3 provide the estimates of the annual savings and reserves for a worker with 1% real annual earnings growth: Table 2 presents these estimates for the 10% saver, and Table 3 presents these estimates for the "one month per year" saver.

If the reserves can earn a real rate of return, the annual amount of additional saving could decrease without diminishing the level of consumption reserves. However, current economic conditions are limiting the return to assets held in accounts where the risk to principal saved is restricted. In the next section, options on where to save and suggestions on how to maximize the return on assets held are discussed.

WHERE TO SAVE

Generally, the worker holding assets in order to “save for a rainy day” is seeking to preserve principal, maintain liquidity, and earn a modest return. Stability of these consumption reserves is important because, by their very nature, unexpected unemployment or unplanned expenses cannot be timed to take advantage of market cycles. Sufficient liquid savings reduce the probability that job interruption would force the worker to sell other assets at lower than average values. However, even with many options, the worker faces challenges when balancing principal preservation and liquidity while seeking the highest available return on these assets. A secure asset (such as a federally insured savings account) guarantees the principal will not nominally decrease, but very low interest rates on these accounts may erode the principal as a result of inflation. Assets with availability restrictions (such as certificates of deposit or savings bonds) may offer higher rates, but they also carry a liquidity penalty.

The following presents a brief review of low volatility assets for reserves that may be needed in the short term (less than three years). These assets are organized based on the level of savings (months of consumption) the worker has in reserves. The number of options increases as the amount of savings increases. Unfortunately, given the relatively short time horizon (and the suggestion that these reserves stay outside the equity markets), these options may provide, at

best, protection from inflation and illiquidity, but they do not offer a significant real return.[8] With the primary goal of consumption security and labor market flexibility, the worker must accept a lower return from these short-term reserves.[9]

For reserve levels representing less than one year of consumption, the worker is probably best served by using accounts that are offered by federally insured banks, thrifts, and credit unions[10]:

- Savings & Checking Accounts: Assets held in savings and checking accounts offer high liquidity and principal protection through insured coverage up to $250,000 per depositor. These accounts generally offer a very low level of return.[11] Interest earned is subject to taxation at the depositor's marginal tax rate.
- Money Market Accounts: Money market accounts may offer higher returns coupled with immediate access to funds via debit cards and checks. Interest earned on these investments is fully taxable. The saver needs to confirm whether these accounts are insured, as Money Market Accounts are offered by both insured and uninsured financial institutions.
- Certificates of Deposit (CDs): This form of time deposit offers interest rates that increase with increasing term to maturity. The worker with at least three months of reserves in a saving account may want to consider using short-term CDs to increase the return on these assets. Early withdrawal usually subjects the depositor to a penalty of a few months of interest. Earned interest is taxable, and these assets may also be insured (based on the financial institution issuing the CD).

For consumption reserves greater than one year, the worker can trade some liquidity for higher return. The worker may also start "laddering" these assets in order to earn a higher return. Assuming a CD has a higher return than a saving account, laddering means that after the saver has reserves of one year, the next amount saved would go into a 12-month CD. As time passes, and assuming the reserves remain in place, the additional and re-investment of reserves goes into the CD at the limit of the reserve level. Over time, this method allows all reserves to earn the return of the CD at the longest period covered by the reserves. "Laddered" savings allows for higher returns while the staggered timing of the redemption dates provide emergency funds over time without any early-withdrawal penalty.

The same laddering method can also apply to U.S. Savings Bonds. These government-backed bonds may be purchased with lower minimums than are required by most institutions for CDs. Thus, savings bonds are more flexible for the savers who are increasing their assets in small increments. When CD rates are lower than the expected rate of inflation, the worker may want to consider the U.S. Savings Bonds and some other accounts:

- U.S. Treasury I Savings Bonds: U.S. Treasury "I-bonds" are a unique financial instrument specifically designed to protect savers from inflation. The principal value

[8] While longer term investments, such as stocks, bonds, and derivatives offer a higher rate of return, the risk associated with such investments may reduce or even eliminate the invested principal in the near term, making these investments unsuitable for the objective at hand. Withdrawals from a worker's retirement plan are problematic due to the extra tax penalty incurred (which is in addition but unrelated to any income tax due on the withdrawals), even though prices are low. There is less downside risk from market swings with short-term assets.

[9] This information is generalized and individual financial institution policies may vary.

[10] Banks are insured by the Federal Deposit Insurance Corporation (FDIC)) while credit unions are insured by the National Credit Union Administration (NCUA).

[11] Online financial institutions can offer higher rates on these accounts due to their lack of overhead, while maintaining the benefit associated with deposit insurance.

of these bonds is based on the amount purchased and accrued interest, and it provides a return based on the rate of inflation, as measured by the change in the Consumer Price Index ("CPI"). Interest is compounded semi-annually and is comprised of two components: one is fixed for 30 years (and this rate is set when the bond is purchased) and the second component is based on the change in the CPI. If the country has a period of deflation, the interest may be lowered to zero, but the principal and previously earned interest never decreases. I-bonds can be bought directly from the Treasury in any amount between $25 and $10,000; total purchases are limited to $10,000 per year via Treasury Direct and up to $5,000 per year with federal income tax refunds.[12] An additional benefit of owning these bonds is that the interest is taxable at the federal level, but not at the state level. These bonds offer some flexibility on when, or if, the tax on interest is due. However, there is a strict liquidity clause: I-bonds may not be redeemed for one year, and if they are redeemed between one and five years after purchase, the penalty is three months of interest.

- Other Accounts: In addition to the accounts noted above, a saver with significant reserves may want to consider short-term municipal bonds, municipal bond mutual funds (which may offer relatively stability for the principal and some tax advantages) or Roth IRA contributions (which offers complete exemption from income tax). However, detailing these options is beyond the scope of this paper.

Summarizing, savings allocation should follow a path of accounts from the simple to the more complex. First, a separate saving account should be used to hold the first few months of reserves. Beyond the three- or six-month level of saving, the laddering of short-term CDs could be considered. Finally, as the saver moves beyond the one-year point, new contributions and re-investment could go into I-bonds that will naturally become laddered as savings are regularly added. Over time, the focused saver will have significant emergency reserves in place that earn a return of at least the rate of inflation.

CONCLUSION

The primary purpose for increased personal savings is to prevent the havoc that the business cycle can impose on a worker's day-to-day well-being. We believe that the financial shock of an unplanned employment interruption can be reduced by holding adequate reserves that were accumulated by following a few simple rules. First, saving should be a habit, and a worker should value non-retirement savings as part of their financial planning. Second, while consumption reserves of six months are a reasonable initial savings goal, workers should strive to continue to add to short-term savings throughout their work life. We propose that after a worker saves initial reserves that are enough to cover six months of expenses, short-term reserves should be increased by one month per year throughout the worker's career. While offering no proof that this is the optimal level, workers who have the six-month reserve in place by their early thirties and continue to save at this rate will have over two years of consumption in reserves during their fifties. Should a worker suffer a labor market interruption for any reason, these greater reserves would provide for daily expenses. Additionally, these resources would also provide for moving and/or educational expenses that the worker may need in order to re-enter the job market without requiring the worker to sell other assets quickly. We believe that the consumption security and labor market flexibility provided by increased short-term reserves

[12] More details about I-Bonds see http://www.treasurydirect.gov/

compensates the worker for the lower return earned on these assets. Finally, the stress reduction from a secure reserve fund pays a significant, non-monetary, return in that it provides peace of mind to workers throughout their careers.

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APPENDIX

Table 1, Worker Without Real Earnings Growth

Age	Annual Consumption	Annual Real Consumption Growth	Average Monthly Consumption (Net of Savings)	Approximate Reserves	Reserves in Months of Consumption	Average Annual Saving	Average Saving Rate
25	$30,000	0.0%	$2,250	$0	0.0	$3,000	10.0%
30	$30,000	0.0%	$2,308	$15,000	6.5	$2,308	7.7%
40	$30,000	0.0%	$2,308	$38,077	16.5	$2,308	7.7%
50	$30,000	0.0%	$2,308	$61,154	26.5	$2,308	7.7%
60	$30,000	0.0%	$2,308	$84,231	36.5	$2,308	7.7%

Table 2, Worker With Real Earnings Growth, Saves 10% Annually

Age	Annual Consumption	Annual Real Consumption Growth	Average Monthly Consumption (Net of Savings)	Approximate Reserves	Reserves in Months of Consumption	Average Annual Saving	Average Saving Rate
25	$30,000	1.0%	$2,250	$0	0.0	$3,000	10.0%
30	$31,530	1.0%	$2,365	$15,383	6.5	$3,153	10.0%
40	$34,829	1.0%	$2,612	$48,562	18.6	$3,483	10.0%
50	$38,473	1.0%	$2,885	$85,213	29.5	$3,847	10.0%
60	$42,498	1.0%	$3,187	$125,699	39.4	$4,250	10.0%

Table 3, Worker With Real Earnings Growth, Saves One Month per Year

Age	Annual Consumption	Annual Real Consumption Growth	Average Monthly Consumption (Net of Savings)	Approximate Reserves	Reserves in Months of Consumption	Average Annual Saving	Average Saving Rate
25	$30,000	1.0%	$2,250	$0	0.0	$3,000	10.0%
30	$31,530	1.0%	$2,425	$13,564	5.6	$2,425	7.7%
40	$34,829	1.0%	$2,679	$39,086	14.6	$2,679	7.7%
50	$38,473	1.0%	$2,959	$67,279	22.7	$2,959	7.7%
60	$42,498	1.0%	$3,269	$98,422	30.1	$3,269	7.7%

Figure 1: Job Loss Rate, 1980 through 2013:
Ratio of Initial Unemployment Claims to Covered Employment

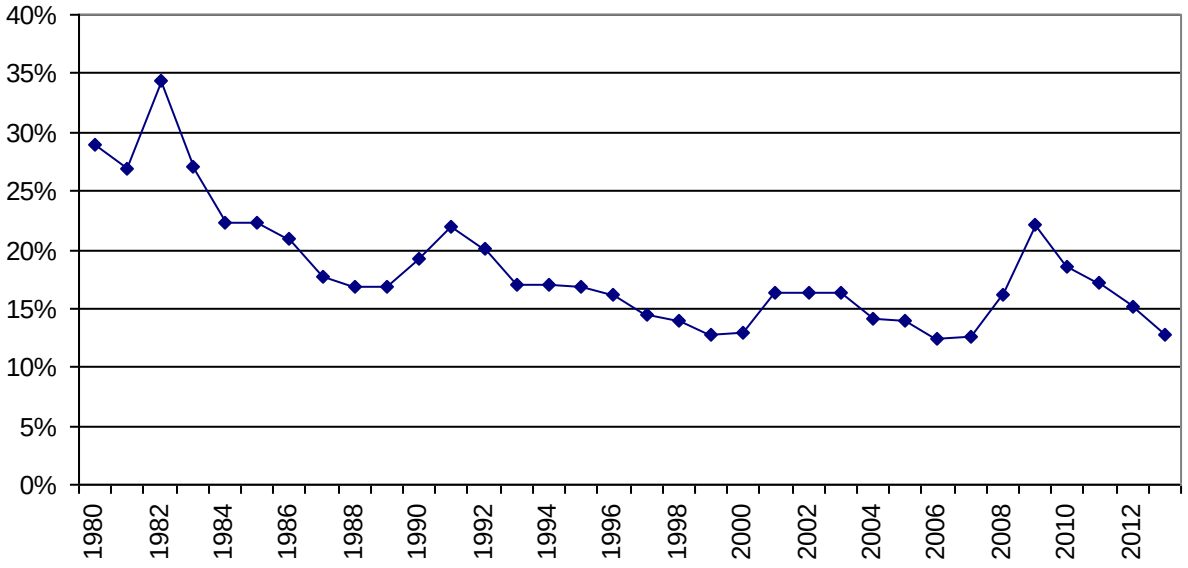

Figure 2: Changes in S&P Index & Unemployment Rate
1980 through 2013