Effects of Expected Future Income and Other Factors on Adequacy of Household Emergency Fund Savings

The 1983-86 Survey of Consumer Finance panels were used to test the relationship between expected income growth and emergency fund levels. The guideline that liquid assets should be 3 months income was met by 37% of households. A logit on meeting the guideline showed that expected income growth did not have a significant effect. Age, education, homeownership, and income had positive and household size and being Black had negative effects on meeting the guideline.

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The rational expectation-permanent income hypothesis implies that people save if they expect their income to decline. Hanna, Chang, Fan, and Bae (1993) showed that optimal holdings of emergency fund savings should be negatively related to expected income growth and positively related to the probability that income will drop. Results of empirical tests on the effect of expected future income on savings/consumption are mixed. No empirical test has been done to examine the relationship between expected future income and emergency fund savings. Using the 1983 and 1986 Survey of Consumer Finances, it is the purpose of this paper to determine the effects of expected future income and household demographic characteristics on adequacy of emergency fund savings.

Data and Methods

Data used for this study are the 1983 and 1986 Survey of Consumer Finances (SCF) -- the most recent and usable panel data available for investigating saving behavior at micro level. A total of 2,450 households were used in the analysis with non-probability high income sample excluded.

To determine effects of households' demographic characteristics and their expected future income on adequacy of emergency fund savings, a logistic regression analysis was used. Emergency fund savings was defined as household liquid assets holdings which include values in savings and checking accounts, money market funds, certificates of deposit, stocks, and bonds. Mean levels of households' emergency fund savings were $22,499 (in 1986 constant dollar) in 1983 and $24,589 in 1986 respectively. Households' emergency fund savings were further defined as adequate (meeting recommended guidelines as discussed in Hanna, et al., 1993) if the value of emergency fund savings exceeded

three months of the household's gross income. With this criterion, only 37% of the households had adequate emergency fund reserves in 1983 and 37% of the households did in 1986. The dependent variable used in the logistic regression was dichotomous; and set equal to 1.0 if the household's emergency fund savings in 1983 exceeded three months of the household's gross income in 1983, and equal to zero otherwise.

Expected future income was estimated using four years (1982-1985) income information from the survey data and was equal to the difference between predicted 1984-1985 income and actual 1982-1983 income(Chang & Hanna, 1994). Other variables included in the model were age (four dummies indicating age<35, 35≤age<55, 55≤age<65, and age≥65 (omitted)), education (five dummies indicating years of schooling <9 years, between 9 and 12 years, =12 years, between 13 and 16 years, and ≥16 years (omitted)), family composition (three dummies indicating single male headed HH, single female headed HH, and married couple HH (omitted)), employment status (three dummies indicating worked part time, not working, and worked full time (omitted)), race (four dummies indicating Black, Hispanic, other races, and white (omitted)), income and income squared (continuous), household size (continuous), and home ownership (dummy, 1=owned home, 0=otherwise).

Results and Discussion

The logistic estimates of the probability of having adequate emergency fund savings in 1983 are shown in Table 1. Expected income growth did not have a significant effect on the probability of meeting the guideline. (A bivariate multiple comparisons test showed that there were significant differences in percent meeting the guidelines by levels of expected income growth.) At

the mean values of other variables, homeowners had a predicted probability of 39% of meeting the guideline, compared to 22% for renters. The predicted probability for Black households was 15%, compared to 38% for otherwise similar white households and 29% for Hispanic households. All age and education variables had significant, positive effects on the probability of having adequate emergency fund savings. At the mean values of other variables, the predicted probability of meeting the guideline was 16% for household heads under 35 and 74% for those age 65 or older. At the mean values of other variables, the predicted probability of meeting the guideline was 17% for those with less than 9 years of education, 34% for those with 12 years, and 52% for those with more than a bachelor's degree. The predicted probability of meeting the guideline was 38% for 2 person households, 34% for 3 person, 30% for 4 person and 27% for 5 person households. The predicted probability of meeting the guideline increased with income over the sample range of income. At the mean values of other variables, the predicted probability of meeting the guideline decreased as household size increased.

Table 1.
Logistic Regression Results, n=2450

Variables	Coef.	P-value
Expected Income Growth	-7.97e-7	0.7543
Age<35	-2.64	0.0001
35≤ Age <55	-1.80	0.0001
55≤ Age < 65	-0.80	0.0001
Edu < 9 years	-1.63	0.0001
9≤Edu<12 years	-1.26	0.0001
Edu = 12 years	-0.72	0.0001
13≤ Edu<16 years	-0.50	0.0008
Single male HH	0.05	0.7966
Single female HH	-0.02	0.8850
Not working	0.10	0.4914
Worked part time	0.28	0.2467
Black	-1.27	0.0001
Hispanic	-0.40	0.3523
Other races	-0.79	0.1835
Homeowner	0.61	0.0001
Household size	-0.16	0.0004
Income	6.94e-6	0.0421
Income squared	-2.92e-11	0.0318
Intercept	1.61	0.0001
Pseudo R squared = 0.30		

Implications

The empirical multivariate results of this study do not confirm the theoretical predictions on relationship between optimal emergency fund savings and expected income growth. Future analyses should have a more rigorous specification of expected income growth and take into account the benefit structure of social insurance programs. The strong effects of the education variables may imply that consumer education could increase household holdings of emergency funds.

References

Hanna, S., Chang, Y.R., Fan, X.J., and Bae, M.K. (1993). Emergency fund levels of households: is household behavior rational? In T. Mauldin (Ed.) Proceedings of the American Council on Consumer Interests 39th Annual Conference, (pp. 215-222). Columbia, MO: ACCI.

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Endnotes
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