Patterns of Adequate Household Emergency Fund Holdings: A Comparison of Households in 1983 and 1986

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The 1983 and 1986 Surveys of Consumer Finance were used to analyze patterns of meeting a guideline of holding enough liquid assets to cover three months of income (emergency fund adequacy). In both years, only 32% of households met the guideline. Only 21% of households met the guideline in both years. Logistic regression analyses show a consistent pattern. The probability of having adequate emergency funds increased with education, home equity, and age and decreased with household size. Households with a Black head had significantly lower probabilities of having adequate emergency fund holdings than similar households headed by a White.
KEY WORDS: *emergency funds, liquidity, financial ratios, Survey of Consumer Finance*

What if you get laid off from your job tomorrow? Would your family have enough financial resources to maintain your current level of living over the next few months? What if it is the middle of winter and the furnace stops working, or you are driving to work and the car breaks down, or your spouse becomes ill and cannot work? Does your family have enough funds set aside for such emergency situations? Many families can, and do, find themselves faced with similar circumstances. Which families are financially prepared with an adequate level of emergency funds and which families are not?

This paper compares household levels of emergency fund holdings at two different times--1983 and 1986--to determine what factors influence the probability that families will meet adequate levels of emergency fund holdings. The factors affecting the probability of having adequate emergency funds have implications for financial planners and counselors, consumer educators and for subsequent research in the area of household emergency fund holdings. In 1983, the economy was just beginning to recover from the 1981-82 recession and the 1989 economy marked the peak of recovery (Economic Report of the President, 1993, pp. 82-83). Marked differences in emergency fund holding behavior, by individual households, between the two periods may suggest that the economic conditions may be influential; while no difference in emergency fund holding patterns could suggest that household tastes and preferences dominate such financial behavior.

Background Information

U.S. Economic Trends in the 1980s

The U.S. Economy suffered a brief but steep recession from January to July of 1980, during which the unemployment rate rose to 7.1%. After a brief period of growth, the economy entered another recession in July, 1981 that lasted until November, 1982. This recession was very severe, with unemployment rates climbing about 10%. After the difficult period, from 1980 to 1982, the longest peacetime expansion in modern U.S. history began. The 1989 economy marked the peak of economic growth for the decade (Economic Report of the President, 1993, pp. 82-83). Figure 1 presents unemployment rates for the years 1980-1990 to illustrate the change in the U.S. economy during this period.

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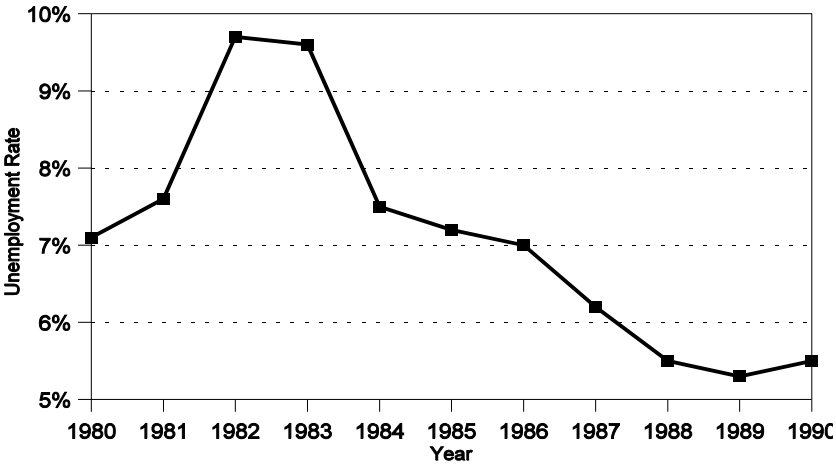
Figure 1
Civilian Unemployment Rate, 1980-1990
(Graph constructed by authors using data from Economic Report of the President, 1993)



Importance of Emergency Fund Holdings

Emergency funds, those liquid assets set aside to cushion the unexpected, are important for several reasons. The labor market has experienced a growth in earnings instability, many people are faced with employment disruption, and there is always the possibility that the household will experience financial crisis through some unforseen event. Emergency fund reserve may serve as a means of employment insurance against chances of income drops.

Chang and Lindamood (1993) showed that between 1982 and 1985, when the economy was expanding and the unemployment rate was decreasing, about 25% of U.S. households had a real decrease in income across all demographic, occupational, and income groups with exception of younger and higher educated households. More recent U.S. newspapers and magazines have been littered with announcements of job layoffs and cutbacks. According to the Washington Post (1993), middle class Americans are afraid of losing their jobs and/or health insurance. Even white-collar, professional and management level occupations are not being spared. Corporations are cutting professional and management positions (The Wall Street Journal, 1991a). Thousands of teachers, at all levels of education, are losing their jobs (Los Angeles Times, 1991; Boston Globe, 1991). Medical workers, for example nurses, are losing their jobs even those with many years of professional security (Washington Post, 1995). Even high-ranking executives are worried about job security (Los Angeles Times, 1994). Displaced professionals compete for positions which represent salary cuts of 50% or more, and make job opportunities even more difficult for those just starting out (USA Today, 1991a; New York Times, 1992a). Such economic conditions lead to the growing concern regarding wage variation and income instability in the U.S. labor market and the subsequent effects on household financial management (Business Week, 1995).

Because the trauma of unemployment can be as stressful as a death in the family, households should do what they can to prepare for the financial blow so that families can heal emotional wounds without having the added financial anxiety (USA Today, 1991b). The jump from middle class to joblessness is not unrealistic in today's economy (New York Times, 1992b). Many financial planners warn households to prepare for hard times by "fluffing up the financial cushion" (The Wall Street Journal, 1991b), and by cutting unnecessary spending (Atlanta Constitution, 1991). Planning, we are told, is the key to easing the pain of family financial crises (Chicago Tribune, 1993). In order to assess emergency fund holdings of the household it is necessary to understand both the definition of emergency funds and the criteria used to determine adequate levels of such holdings.

Definition of Emergency Fund Holdings

While there is no universal definition of an emergency fund, Johnson and Widdows (1985) argue that emergency funds are financial holdings which are made available to cover spending, without drastically altering the current household standard of living, in the event of an income disruption. The Johnson and Widdows (1985) study uses three measures of emergency fund

holdings--quick, intermediate and comprehensive--which vary in their degree of liquidity of assets.

The quick emergency fund refers to assets held in savings, checking and money market funds and accounts. A similar type of measure was used in studies by Hefferan (1979) and Lindqvist (1981). In addition to the assets mentioned above, the intermediate emergency fund includes certificates of deposit and savings certificates. Finally, the comprehensive emergency fund includes the intermediate fund measure and the value of stocks and bonds. This comprehensive measure was initially introduced by Fitzsimmons and Williams (1973) and a version of the comprehensive measure was used in the Smythe (1968) study examining family credit commitments.

In the present study, a version of the intermediate emergency fund is used to analyze household emergency fund behavior over time. The emergency fund consists of funds held in savings and checking accounts, money market funds, and funds held in certificates of deposit.

Guideline for "Adequacy"

Analogous to the debate regarding the definition of household emergency funds, there is no consensus regarding the exact amount of such funds the household should hold in order to be designated as having an adequate level of emergency fund holdings. Financial planners recommend a range anywhere from two or three months to six months, and in some cases a year's worth, of living expenses be held in the household emergency fund to protect against unemployment (The Wall Street Journal, 1991b; Garman & Forgue, 1994). According to Garman and Forgue (1994, pp. 82-83), the amount of monetary assets held for emergencies is dependent on, and may vary because of, family situations and jobs. An amount smaller than the suggested guideline may be sufficient if one has adequate loss of income protection through an employee fringe benefit program, is employed in a job that is definitely not subject to layoffs, has an employed spouse, and/or has a ready source of ample credit (Garman & Forgue, 1994, p. 83).

There are several reasons why lower income households may have lower reserves than higher and middle income households. First, because the real rate of return after inflation and taxes may be less than other investment opportunities, lower income households may hold a smaller amount of emergency fund reserves or not to have any liquid asset reserves at all. Second, the impact of an income drop due to layoffs may be less for lower income households than for high or middle income households. Third, bankruptcy may be a reasonable alternative for lower income households in case of financial difficulties.

On the other hand, households dependent on the income from a self-employed person may need a larger emergency cash reserve (Garman & Forgue, 1994, p. 83). In the case of layoffs high income households experience more loss of income than other households; therefore, the need for, and the amount of, emergency fund reserves is greater.

Household emergency fund research uses measures of income and/or expenditure and, in the most recent studies, has tended toward a 3 month guideline to indicate adequacy (Hanna & Wang, 1995; Chang, 1995). In the present study emergency fund holdings which were at least equal to 3 months of household income were deemed to be adequate.

Factors Related to Emergency Fund Holdings

An examination of recent studies which have focused on the adequacy of emergency fund holdings provides useful information regarding factors which are significantly related to meeting the "adequate" guideline. Hanna, Chang, Fan, and Bae (1993) and Hanna and Wang (1995) both employ the Consumer Expenditure Survey and use a comprehensive measure of liquid assets; however, the former uses a 6 months of spending guideline while the latter uses a 3 months of spending guideline to determine adequacy of the household emergency fund. Each of these studies found a positive relationship for age, income, and education; and a negative relationship between meeting the guideline and household size. Both studies also found that households with Black reference persons had a lower likelihood of meeting the guideline compared to other similar non-Black-headed households. Hanna and Wang (1995) found that there was a positive relationship between net home equity and the probability of meeting the guideline.

Using the Survey of Consumer Finance and an income measure rather than a spending measure to determine adequacy, Chang (1995) and DeVaney (1995) also found similar results. Both of these studies found the positive relationship for age and education, as well as the negative relationship between household size and the probability of meeting the 3 months of income in liquid assets guideline. Again, as with the spending studies, both of these studies used a comprehensive measure of liquid assets. While Chang (1995) did find a

significant and positive relationship between income and the probability of a household meeting the guideline, DeVaney (1995) does not confirm this result, finding no significant relationship between income and meeting the guideline.

Method

Data and Sample

Data used in this study were drawn from the 1983 and 1986 Surveys of Consumer Finance (SCF). The surveys were sponsored by the Federal Reserve Board and were designed to gather exhaustive details on household assets and liabilities. The data were collected by the Survey Research Center at the University of Michigan. The surveys were conducted as a panel, so that the same households were interviewed in 1983 and 1986. Within each survey household the "economically dominant" family member was interviewed. This was the person who owned or rented the house, or provided the most income and was also the "most knowledgeable about family finances." Age, education, occupation, employment and martial status reported are for the reference person (Avery & Elliehausen, 1987; Avery & Kennickell, 1988).

The sample used in this paper includes the national probability sample of households who were interviewed in both 1983 and 1986. A supplemental non-probability sample of high income households, however, was not included for this analysis. A sample with a total of 2,445 households was used for the empirical analysis.

Measurement of Adequate Emergency Fund Holdings

This study employs the definition of intermediate emergency fund from Johnson and Widdows (1985) and defines household emergency fund holdings as the sum of dollar values in savings and checking accounts, money market funds, and certificates of deposit. A three-months emergency fund holdings guideline is used in this study to determine whether households had adequate holdings of such fund. The dependent variable -- probability of having adequate emergency fund holdings (or meeting emergency fund guideline) -- was dichotomous, equal to one if the household's emergency fund holdings was greater or equal to three months of the household's gross income in the same period, and equal to zero otherwise. Since the 1983 and 1986 SCFs only surveyed household income information from 1982 to 1985, the 1985 household gross income was inflated to 1986 dollar; the inflated 1985 household income was then used to determine whether the household met the emergency fund guideline in 1986.

Having adequate emergency fund holdings in 1983 (i.e.,meeting the emergency fund guideline in 1983) =1, if intermediate emergency fund holdings in 1983 $ 3 months of 1983 gross household income; and =0, otherwise.

Having adequate emergency fund holdings in 1986 (i.e., meeting the emergency fund guideline in 1986) =1, if intermediate emergency fund holdings in 1986 $ 3 months of inflated 1985 gross household income; and =0, otherwise.

Variables used to predict whether a household would meet the emergency fund guideline in 1983 and 1986 include age, education, marital status, employment status, home equity, occupation, ethnic status, household size, and income. Definition and description of these variables are listed in Table 1.

Method of Analysis

A logistic regression analysis is used to determine factors affecting the probability of meeting emergency fund guideline in 1983 and 1986. Logit is the appropriate method to investigate what variables are related to a binary dependent variable (Maddala, 1992, p. 327). The coefficient estimates can be further used to calculate predicted probabilities for any combination of values of the independent variables.[a]

Findings and Discussion

Patterns of Emergency Fund Holdings

Table 2 shows mean and median levels of household emergency fund holdings for 1983 and 1986 in current dollars and in adjusted 1986 constant dollars, and percentage of emergency fund holdings to annual gross income in 1983 and 1986. Results from t-tests, indicating whether the differences in emergency funds holdings between the two years were statistically significant, are also listed in Table 2. These results indicate that there are significant increases in levels of emergency fund holdings (in both nominal and constant dollars) between 1983 and 1986. The mean value of emergency fund holdings was $11,348 in 1983, compared to $15,754 in 1986. The median value increased from $1,900 to $3,000 during the same period. The percentage of average emergency fund holding to gross household income also significantly increased from about 49% in 1983, or about equal to five months of gross income, to about 60% in 1986, or about six months of gross income.

However, there is a wide variation in emergency fund holdings among households. Table 3 shows that about

10% of the households did not have any emergency fund savings in 1983, and another 10% did not in 1986. The top 10% of the households had emergency fund savings greater than $27,295 (or 127% of their income) in 1983 and $37,750 (or 133% of their income) in 1986.

Table 1
Definition and Description of Independent Variables (n=2,445)

Variables	Definition	1983 Mean	1986 Mean
Age			
Age < 35	=1, yes; =0, otherwise	23.4%	23.4%
35# Age <55	=1, yes; =0, otherwise	39.7%	39.7%
55# Age <65	=1, yes; =0, otherwise	15.7%	15.7%
Age $ 65	omitted	21.2%	21.2%
Education			
Yrs. of schooling<12	omitted	26.5%	25.2%
Yrs. of schooling=12	=1, yes; =0, otherwise	32.4%	33.3%
13# yrs. of schooling<16	=1, yes; =0, otherwise	19.1%	17.5%
Yrs. Of schooling$16	=1, yes; =0, otherwise	22.0%	24.0%
Marital status			
Married	omitted	66.5%	64.5%
Single	=1, yes; =0, otherwise	33.5%	35.5%
Employment status			
Worked full time	omitted	67.2%	56.3%
Worked part time	=1, yes; =0, otherwise	4.7%	8.0%
Not working	=1, yes; =0, otherwise	28.1%	35.7%
Home equity	dollar value in home equity (continuous)	$34734.40	$42847.09
Occupation			
White collar	=1, if professional, managers,and armed force; =0, otherwise	24.5%	22.5%
Blue collar	=1, if craftsman and laborer;=0, otherwise	30.6%	23.5%
Self-employed	=1, yes; =0, otherwise	3.8%	2.2%
Sales	=1, yes; =0, otherwise	11.1%	14.8%
Farmer	=1, yes; =0, otherwise	1.9%	1.2%
Others (not working)	omitted	28.1%	35.6%
Ethnic status			
White	omitted	87.1%	87.1%
Black	=1, yes; =0, otherwise	10.4%	10.4%
Hispanic	=1, yes; =0, otherwise	1.8%	1.8%
Asian	=1, yes; =0, otherwise	0.6%	0.6%
Household size	actual number of household members	2.8	2.7
Income	total household gross annual income (continuous)	$26601.23	$32187.30

Table 2
Mean and Medians of Household Emergency Fund Holdings in 1983 and 1986, and T-Test of Difference in Means (n=2,445)

	1983		1986		
	mean	median	mean	median	Significance[a]
current dollar	$11,347	$1,900	$15,754	$3,000	0.0001

in 86 constant dollar	$12,632	$2,099	$15,754	$3,000	0.0001
% of annual income	48.8%	8.8%	59.9%	10.8%	0.0011

[a]T-tests for mean values of emergency fund holdings and % of emergency fund holdings to annual income in 1983 and 1986.

Table 3
Percentile Distribution of Household Emergency Fund Holdings and Fund to Annual Income Ratio in 1983 and 1986 (n=2,445)

	Emergency Fund Holdings at Percentile				
	10th	25th	median	75th	90th
1983					
current $	$25	$400	$1,900	$9,184	$27,295
% to annual income	0.0%	2.2%	8.8%	39.1%	127.0%
1986					
current $	$30	$500	$3,000	$11,500	$37,750
% to annual income	0.0%	2.5%	10.8%	39.3%	133.4%

Table 4
Percentage of Households Meeting/Not-Meeting Emergency Fund Guideline in 1983 and 1986

	1983: Met the guideline (32%)	1983: Met the guideline (68%)
1986: Meet the guideline (32%)	21%	11%
1986: Did not meet the guideline (68%)	11%	56%

Given the criterion of adequate emergency fund holdings defined earlier, 32% of the households met the emergency fund guideline in 1983 and 32% did in 1986 (see Table 4). However, only 21% of households met the guideline in both 1983 and 1986, while more than half of the households (56%) did not meet the guideline in either period (Table 4).

Logistic Regression Results

Table 5 summarizes results of logistic regression analyses that identified factors contributing to the probability of meeting emergency fund guidelines in 1983 and 1986. Despite economic changes during the two periods, the regression results show a consistent pattern in the 1983 and 1986 equations (Table 5). Education, levels of home equity, being Black-headed households, and household size were found to affect the probability of meeting the emergency fund guideline significantly in both 1983 and 1986. Goodness of fit of the two regression models were similar with pseudo R^2 equal to .29 and .29 in 1983 and 1986, respectively.

Effect of Age

All age dummy variables entered in the regression model affected the probability of meeting the emergency guideline significantly in 1983 and 1986. Younger households were significantly less likely to meet the guidelines than the older ones in both years. Holding other variables at their mean values, the predicted probability of meeting the emergency guideline increased from 15% for households with a respondent aged less than 35 years, 25% for those aged between 35 and 55 years, 44% for those aged between 55 and 65, and to 63% for those aged 65 years and over in 1983. A similar pattern was shown in the 1986 model. This positive effect of age on meeting the guideline is consistant with previous studies (e.g., Hanna et al., 1993; Chang, 1995; DeVaney, 1995; Hanna & Wang, 1995).

Effect of Education

Three education dummy variables were found to significantly affect the probability of meeting the guideline in 1983 and 1986. Higher educational attainment was associated with a higher probability of meeting the guideline in both years. Holding other variables at their mean values, the predicted probability increased from 18% for respondents with less than 12 years of schooling, 27% for those with 12 years of schooling, 30% for those with 13 to 15 years of schooling, to 41% for those with 16 or more years of schooling in 1983. A similar pattern was found for the

1986 model. This strong and positive effect of education on meeting the guideline is consistent with previous studies (e.g., Hanna et al., 1993; Chang, 1995; DeVaney, 1995; Hanna & Wang, 1995). The results suggest that higher educated households are more likely to hold adequate emergency fund reserves.

Effect of Home Equity

A positive relationship was found between levels of home equity and the probability of meeting emergency fund guidelines. Holding other variables at their mean values, an $1000 increase in home equity results in about 0.2% increase in the predicted probabilities in 1983 and 1986. This result is consistent with DeVaney (1995) and Hanna and Wang's (1995) findings. Levels of home equity may have a negative effect on emergency fund holdings in that households may rely on, and borrow out of, home equity in cases of emergency. On the other hand, households with a higher level of net home equity may have more resources to put aside in emergency fund reserves, compared to those with lower amounts of home equity. This positive empirical results suggest the latter effect.

Effect of Household Size

Household size negatively affects the probability of meeting emergency guideline. Holding other variables at their mean values, an increase of one member in the household decreases the predicted probability of meeting the guidelines by 3.7% in 1983 and by 5.5% in 1986. This result is consistent with previous empirical studies (e.g., Hanna et al., 1993; Chang, 1995; DeVaney, 1995; Hanna & Wang, 1995). The negative relationship between household size and the probability of meeting emergency fund guidelines may suggest that larger household size may be a constraint to the household in terms of having adequate emergency fund reserves.

Effect of Ethnic Status

Black-headed households were significantly less likely to meet the emergency fund guideline than other ethnic groups. Holding other variables at their mean values, the predicted probability of meeting the guidelines was 12% for Black-headed households in both 1983 and 1986, compared to 32% for other non-Black-headed households. The negative relationship between Black-headed households and emergency fund holdings was found consistently in previous studies, after controlling for income and other variables (e.g., Hanna et al., 1993; Chang, 1995; DeVaney, 1995; Hanna & Wang, 1995). It is possible that Blacks have a lower lifetime income, which is not controlled for in the analysis, and thus are rational to have not have traditionally defined adequate emergency fund reserves. The finding may also suggests that that Black-headed households may *choose* to have less emergency fund holdings even though they are able to do so.

Insignificant Variables

Income, occupation, employment status, and marital status were found to have no significant effect on emergency fund holdings. While previous research has found a significant relationship for the income variables, this study did not produce such results; however, this study employed the intermediate measure of emergency fund holdings while the significant results were obtained using the comprehensive measure. This suggests that income may become important when including financial resources such as stocks, bonds and mutual funds. It is interesting to note that employment related factors (status and occupation) do not appear to play a role in household emergency fund holding behavior.

Conclusions and Implications

Conclusions

Several conclusions can be drawn from the findings of this study. First, there is a remarkable similarity of household emergency fund holding behavior in the two periods analyzed. Over three-quarters of the sample exhibited a consistent pattern of behavior over the two periods suggesting that households maintain an attitude or preference for meeting the established guideline for adequacy. This conclusion is further supported by the fact that income did not provide a significant result in either of the logistic models. That is, household preference to have adequate emergency fund holdings appears to be a stronger factor than the household's ability to do so. Approximately one in five households consistently meet the guideline and one of every two households never meet the guideline. In addition, approximately one in ten households met the guideline in 1983 but not in 1986; and similarly, one in ten households did not meet the guideline in 1983 but met it in 1986 (see Table 4).

Second, there is a wide gap between the average percentage and the median (or middle) percentage of emergency fund holdings. While the average percentage of emergency fund holdings ranged from 48% to 60%, half the sample had less than 10% of their income in emergency fund holdings. This falls well below the suggested guideline of 25% (i.e., 3 months of income). About one in ten households have holdings in relatively liquid assets which are far in excess of their annual income, while another one in ten households have no such funds (see Table 4).

Third, as the education level of the household head increases, not only is the household more likely to meet the guideline but the chance of meeting increases more with each level of education attained. Older households were more likely to meet the guideline than younger households. The more home equity a household had, the more likely the household was to meet the guideline. Adding members to the households had a negative effect on the probability of meeting the guideline; the bigger the family the less chance of meeting the guideline. For households that were identical in all factors (i.e., income, education, family size, home equity, etc.) except race, Black-headed households were far less likely to meet the guideline compared with households that had a non-Black head. These results are not inconsistent with findings from previous research (Hanna & Wang, 1995; Chang, 1995).

Table 5
Logistic Regression of Meeting Emergency Fund Guideline on Demographic Variables (n=2,445)

	1983		1986	
Variables	coefficient	p-value	coefficient	p-value
Age				
(Age $65 omitted)				
Age < 35	**-2.2439**	**.0001**	**-1.9352**	**.0001**
35#Age < 55	**-1.6150**	**.0001**	**-1.5539**	**.0001**
55#Age < 65	**-0.7630**	**.0001**	**-0.7718**	**.0001**
Education				
(Yrs. of schooling < 12 omitted)				
Yrs. of schooling=12	**0.5113**	**.0005**	**0.8558**	**.0001**
13#Yrs. of schooling < 16	**0.6484**	**.0002**	**0.6651**	**.0001**
Yrs. of schooling$16	**1.1076**	**.0001**	**0.9349**	**.0001**
Single household	0.0050	.9707	-0.0108	.9335
Employment status				
(Working full time omitted)				
Not working	0.3191	.4231	-0.4224	0.4042
Working part time	0.3521	.1136	-0.0385	0.8069
Home equity	**9.83e-6**	**.0001**	**7.71e-6**	**0.0001**
Occupation				
(Not working omitted)				
White collar occupations	0.1708	.6973	-0.5379	0.2890
Blue collar occupations	0.0737	.8583	-0.7465	0.1348
Self-employed	0.7232	.1387	-0.2778	0.6362
Sales occupations	0.0682	.8782	-0.7423	0.1456
Farmers	0.3960	.5399	0.3915	0.5396
Ethnic status				
(White omitted)				
Black	**-1.1687**	**.0001**	**-1.2380**	**0.0001**
Hispanic	-0.2736	.4084	-0.3884	0.3937
Asian	-0.2706	.6814	-0.1200	0.8510
Household size	**-0.1702**	**.0003**	**-0.2539**	**0.0001**
Income	-2.01e-6	.5740	5.80e-6	0.2176
Income squared	-9.1e-12	.4929	-4.4e-11	0.0565
Intercept	**-0.1241**	**.7831**	**-0.7019**	**0.2133**

Pseudo R^2	0.29	0.29

Implications for Financial Planners and Counselors

The observed pattern of consistency in emergency fund holding behavior must be considered when developing the household financial plan. This consistency can be both beneficial and challenging. For those households who consistently meet the guideline, the financial planners task is less difficult, however, there is a segment of the population who may be "over-liquified". The financial planner may find it difficult to convince such households to alter their behavior given, the findings of this study, that the amount of emergency fund reserves is dependent upon household preferences.

An even greater challenge may lie in trying to change "non-meeters" into "meeters" of the emergency fund guideline. The findings suggest that income is not a significant factor but rather that household preference plays an integral role in meeting the emergency fund guideline. Attempting to change preferences can be a tough sell. Households which are the least likely to have adequate emergency fund holdings have low levels of education, are Black-headed, have no home equity, and have a relatively large number of household members. These are the families which are the most vulnerable to financial crisis and need to be targeted. More attention to ethnic differences, especially attitudes and preferences of Black-headed households, needs to be examined. Perhaps there are informal support systems in place (e.g. reliance on family) which are not being captured by the data. In any case, given the strong independent effect of education on increasing the likelihood of meeting the guideline, consumer education programs would appear to be a viable option for encouraging households to meet the emergency fund guideline.

Considerations for Further Study

Although the majority of households were consistent in their emergency fund holding behavior across the two periods, there were two groups which did not exhibit this pattern. There were households which met the guideline in 1983 but not in 1986; and there were those households which did not meet in 1983 but did meet the guideline in 1986. An examination of how these two groups differ among each other and from the majority of households could provide a more complete picture of household emergency fund holding behavior.

While this study has been useful in determining household patterns of emergency fund holdings over time, some of the findings (particularly those which mirror previous findings) point to some areas of interest for future consideration. For example, many studies, including the present research, find that the majority of households do not meet recommended guidelines for emergency fund holdings (Hanna & Wang, 1995; Chang, 1995). Are households really as bad off as the results would suggest, or is there a problem with the measure and/or the guideline? Perhaps the concept of emergency fund holdings, and the criteria for adequacy needs to be revisited. As families struggle to exist in a climate of job insecurity and income instability, it is imperative that financial planners, counselors, educators and researchers work together to provide alternatives which will allow families to be more prepared in case of emergency.

Endnotes

a. *The predicted probability of categorical variables can be calculated as follow:*

$$Y = \beta_0 + \Sigma \beta_i x_i$$

$$P = 1/(1+e^Y)$$

where Y= dependent variable that takes value zero if the household met emergency guidelines in 1983 or 1983, and one otherwise

- β_0 = *intercept*
- B_i = *a vector of coefficients estimated associated with respective independent variables*
- x_i = *a vector of independent variables which were held at their mean values except for the specific variable examined*
- P = *probability of meeting emergency guidelines*

The predicted probability of continuous variables can be calculated as follow:

$$P_1(Y=0/x_i) = \beta_1 * P(1-P)$$

where P_1 = *average marginal probability of a continuous variable* x_1

- β_1 = *coefficient estimated of a continuous variable* x_1
- P = *probability of meeting emergency fund guidelines when all independent variables are held at their mean values*

References

A daunting challenge for graduates. (1992a, May 17). *New York Times,* p. WC1.

Avery, R. B. & Elliehausen, G. E. (1987). *1983 Survey of Consumer Finance: Technical Manual and Codebook*. Washington, DC: Board of Governors of the Federal Reserve System.

Avery, R. B. & Kennickell, A. B. (1988). *1986 Survey of Consumer Finance: Technical Manual and Codebook*. Washington, DC: Board of Governors of the Federal Reserve System.

Big-time shoppers show a new profile. (1991a, October 4). *The Wall Street Journal,* p. B3.

Chang, Y. R. (1995). Effects of expected future income and other factors on adequacy of household emergency fund

savings. In K. F. Folk (Ed.), *Proceedings of the 41st Annual Conference of the American Council on Consumer Interests* (pp. 220-221). Columbia, MO: ACCI.

Chang, Y. R. & Lindamood, S. (1993). Factors related to the risk of household income variability. *Financial Counseling and Planning*, *4*, 47-66.

Cutting classes. (1991, August 25). *Los Angeles Times,* p. A3.

DeVaney, S. (1995). Emergency fund adequacy among U.S. households in 1977 and 1989. In K. F. Folk (Ed.), *Proceedings of the 41st Annual Conference of the American Council on Consumer Interests* (pp. 222-223). Columbia, MO: ACCI.

Economic Report of the President. (1993). Washington, DC: United States Government Printing Office.

Fitzsimmons, C. & Williams, F. (1973). *The family economy and management of resources*. Michigan: Edwards Brothers.

From middle class to jobless: A sense of pride is shattered. (1992b, April 13). *New York Times,* p. A1.

GU nurses confront life without a job. (1995, January 12). *Washington Post,* p. B1.

Hanna, S. & Wang, H. (1995). The adequacy of emergency funds to cover household expenditures. In K. F. Folk (Ed.), *Proceedings of the 41st Annual Conference of the American Council on Consumer Interests* (pp. 224-225). Columbia, MO: ACCI.

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

Hefferan, C. (1979). Savings behavior in multiple earner families. *Proceedings of the 25th Annual Conference of the American Council on Consumer Interests*. Columbia, MO: ACCI.

How trauma of unemployment can hit home. (1991b, March 18). *USA Today* p. B3.

Job insecurity pervades Paramount. (1994, February 15). *Los Angeles Times,* p. D4.

Johnson, D. P. & Widdows, R. (1985). Emergency fund levels of households. In K. P. Schnittgrund (Ed.), *Proceedings of the 31st Annual Conference of the American Council on Consumer Interests* (pp. 235-241). Columbia, MO: ACCI.

Lindqvist, A. (1981). A note on the determinants of household saving behavior. *Journal of Economic Psychology, 1,* 39-57.

Maddala, G. S. (1992). *Introduction to econometrics*. New York: MacMillan Publishing Company.

New job seekers shed white collars. (1991a, January 16). *USA Today* p. B6.

The new insecurity. (1993, February, 8). *Washington Post,* p. A19.

Planning can help ease the pain. (1993, January 24). *Chicago Tribune,* p. 18NW3.

Smythe, K. D. (1968). An approach to determining "safe" levels for family credit commitments. *The Journal of Consumer Affairs, 2*(2), 167-181.

Unemployment safety net: Preparing before bad news. (1991b, December 26). *The Wall Street Journal,* p. C1.

Unemployment: It means cutting back to 'a simple life. (1991, March 4). *Atlanta Constitution,* p. C1.

Up to 5,000 teacher lay-offs are anticipated next fall. (1991, June 23). *Boston Globe,* p. 73.

Why incomes grew less equal. (1995, March 20). *Business Week,* p. 24.

Zeldes, S. P. (1989, May). Optimal consumption with stochastic income: Deviations from certainty equivalence. *The Quarterly Journal of Economics,* 275-298.