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Personal Savings in the United States

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Over the past decade personal savings in America has been much lower than in the past. There are many factors that could affect Americans' ability to save. The ups and downs of the economy have caused many Americans to struggle financially. Many families have turned to their savings to pay bills. What is the cause for the lack of savings?

The Bureau of Labor Statistics has collected a substantial amount of data over many years that show the fluctuation in savings. My research examines household savings and the factors that affect it.

Literature Review

In 1991, Bunting researched the relation between income and savings. He concluded that the reason for the recent decline in savings has more to do with non-savers than savers. The amount of household savings has remained relatively steady since 1972, while the dissavings rate has been drastically increasing. Dissaving goes a step beyond not saving. With dissaving, households are either spending all their income plus money they had previously put away or making purchases on credit, essentially spending money they do not have and paying interest. In some cases, individuals could be doing both. This increase in the dissavings rate has caused the overall savings rate to decrease. He also found that the tendency to save increases as income increases.

Thornton (2001) examined whether age has a direct relation with the personal savings rate in the U.S. He found that savings is cointegrated with the ratios of minors to the working-age population and the aged to the working-age population. Thus, he

concluded that with the aging of the population, the U.S. personal savings rate will decline.

Fortune (1981) researched the effect of inflation on personal savings. He looked at both durables (storable and a form of real wealth) and non-durables (non-storable and not a form of real wealth) and service items. He concluded that both the prices of durables and non-durables and services have a significant influence on voluntary saving.

Brillembourg (1987) asked why personal savings was so low in the United States. He wanted to know if it was due to investments or individuals spending too much money. He found that Americans saved so little because getting a line of credit to buy things they simply could not afford was so easy.

The Washington Post (Mui 2011) reported, "The nation's savings rate has dwindled as consumers try to juggle rising prices and stagnant wages". In the New York Times, Dewan (2011) points out the implications of spending more and saving less. "Economists warn, though, that increases in spending will be hard to sustain if Americans are doing it by simply putting a little less away every month".

Data and Descriptive Statistics

The Bureau of Labor Statistics has conducted a survey of consumer expenditures, or buying habits, since 1984. There are two separate surveys, the Diary Survey and the Interview Survey. The two surveys interview different groups of respondents, with both surveys gathering information on expenditures. The Diary Survey consists of respondents completing a log of expenses for two uninterrupted one-

week periods. The purpose of the Diary Survey is to gather detailed data on frequently purchased items in addition to summary information on other types of expenditures. For the Interview survey, participants report data to an interviewer once per quarter, for five uninterrupted quarters. The purpose of the Interview Survey is to gather detailed data on major items of expense that occur regularly for three months or longer, in addition to summary information on other types of expenditures.

Both the Diary Survey and the Interview Survey collect information on individual/household income. The Bureau of Labor Statistics defines income as, "the combined income of all consumer unit members (14 years of age or over) during the 12 months preceding the interview." The money income before taxes is composed of income from wages and salaries, self-employment income, Social Security, private and government retirement, interest, dividends, rental income, and other property income, unemployment and workers' compensation and veterans' benefits, public assistance, Supplemental Security Income, and food stamps and regular contributions for support.

The BLS makes "microdata" from the surveys available to the public. The 2010 Consumer Expenditure Survey data are available by order through the BLS website. The microdata contain every piece of information that was collected during the Interview Surveys and the Diary Surveys for one specific year. Microdata from 2010 are used for this research.

The total number of Consumer Units (CUs) that participated in the Interview Survey is 35,398, and the total from the Diary Survey is 14,296. This is a total of 49,694 consumer units with a total of 3,320,010 individual expenditure records. From the

49,694 consumer units, I eliminate those that do not have complete data. This leaves a total of 48,256 consumer units with complete data.

There are a few things that must be kept in mind with respect to the data. First, the BLS uses the total cost for vehicles purchased and education expenses and out-of-pocket medical expenses in the yearly expenditures even if the cost is financed. In some cases, this causes extremely large expenses for an individual. For example, the consumer whose ID is 2038195 had income of $62,110 in 2010 and expenses of $58,171. When I look at the survey data I can see that the part of the expense is coming from the purchase of a vehicle costing $24,000 ($6,000 times four quarters). On the other hand, when the BLS asks its consumer units about their taxes, many are unsure of what their taxes will be. Because of this, some are asked to give an estimate of what they think they will owe or how large of a refund they will receive. In some cases, people report $0 because they are unsure of the amount. This can cause the data to show unrealistically low taxes for individuals which then causes their income after taxes to be higher than it should be.

Since the BLS does not gather savings data in its interviews, savings is calculated by subtracting annual expenditures from annual income after taxes for each consumer unit. The process used to calculate annual expenditures is different for the data gathered in the Interview Survey and the Diary Survey. The Interview Survey collects quarterly expense data for major items from each consumer unit. When the consumer units are interviewed, they are asked to give expenditures from the last 3 months. So, if someone is interviewed in May, they are asked for expenditures from February, March and April. Therefore, February and March would fall under the

"Previous" quarter and April in the "Current" quarter. Therefore, to get the expenditure figure, I used the FMLI files and summed the total expenditures for the current quarter (TOTEXPCQ) and the total expenditures for the previous quarter (TOTEXPPQ). I did this for all five quarters that include monthly 2010 data. This gives me quarterly expenditures for each consumer unit. I then took each quarterly figure and multiplied by four. This gives me an annual expense dollar amount for each individual consumer unit.

The Diary survey does not collect data on a quarterly basis, but rather on a weekly basis. The file EXPD gives individual costs for each expenditure category of frequently purchased items by consumer unit. Summing the costs for each consumer unit, results in total weekly expenditures for frequently purchased items. Multiplying this weekly figure by fifty-two gives an annual expense amount for frequently purchased items per consumer unit. The total expenses from the Interview Survey and Diary Survey are matched with the income after taxes data using the Consumer Unit ID Numbers. Savings is then calculated for each consumer unit by subtracting the total expenses from income after taxes.

Below I look at how annual savings differs across various income levels and age groups. Without looking at data, many would assume that the lower the income and the younger the person, the less they will save. When I break down the data and look at it, I can see that these assumptions are largely correct.

Figure 1
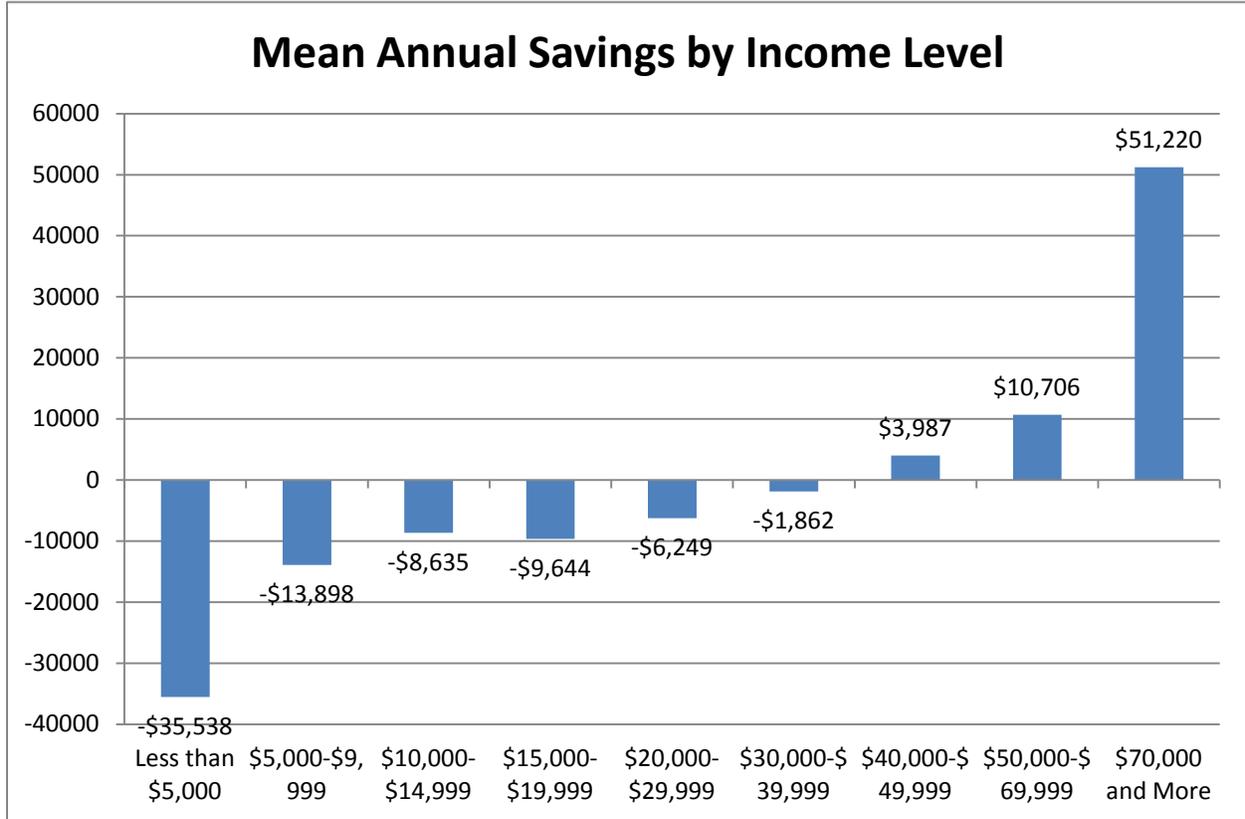
The Bureau of Labor Statistics CE data show that consumers who make $70,000 and more save the most. The chart shows that the less a person makes, the less they save. This also shows us that as income increases, so does the amount saved. This is consistent with the conclusions of Bunting (1991) in his research on savings.

Savings tends to grow when income increases because for many, expenditures do not greatly increase. For those Americans who can comfortably survive off of the income that they currently have, if they receive a raise at work, they will continue to live off the budget of their previous pay and put the excess into savings. In addition, those who work in low-paying jobs typically have no medical coverage. This means that a much larger portion of their income is spent on medical expenses. Society also has an

effect on a person's savings. Individuals who have less income than others still want to have the same standard of living as their peers. This attitude causes people to live beyond their means.

Figure 2

Mean Annual Savings by Age
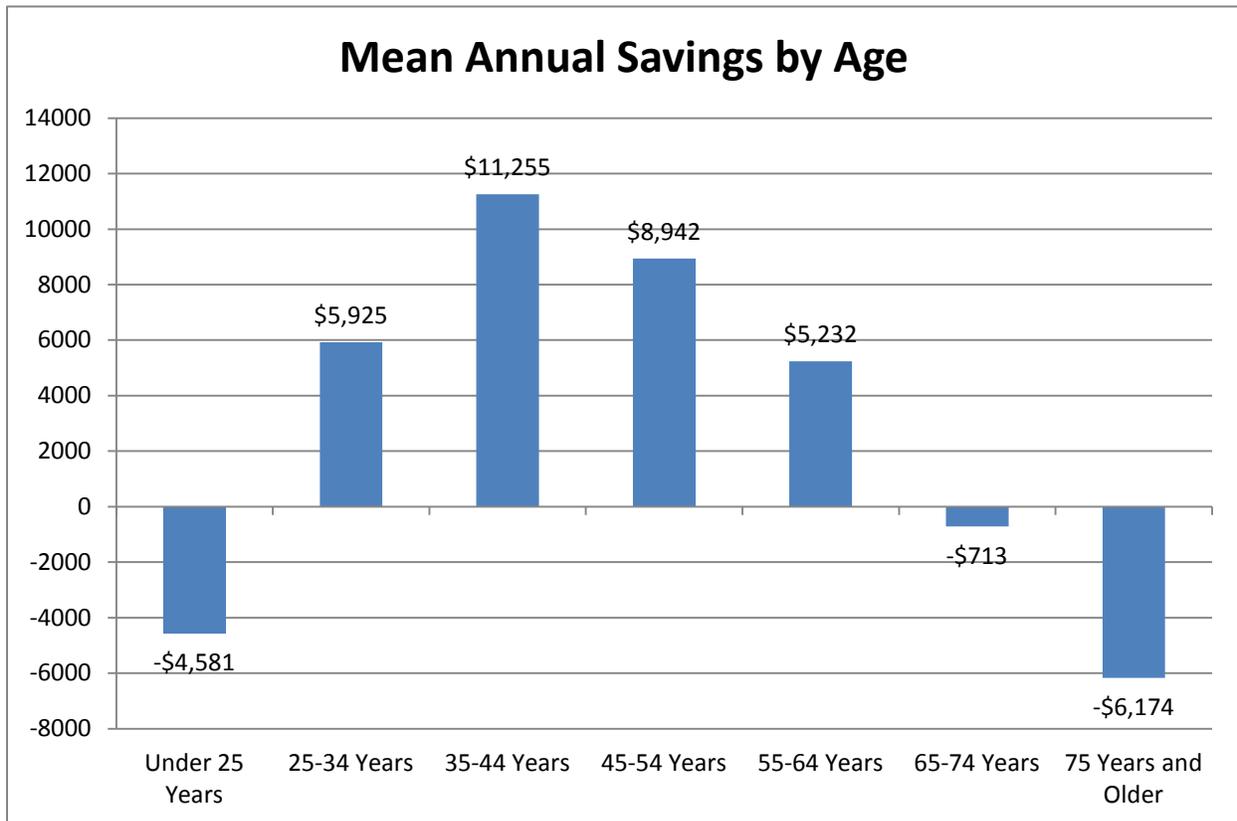
Based on the Bureau of Labor Statistics CE 2010 data, the above graph shows the amount of mean annual savings by age category. I can see that those who are between the ages of 35 and 54 save more than the other age groups. Data also show that as consumers reach retirement age, they save less, and for those age 65 and older, average annual savings is in the negatives. This chart shows that after age 65, individuals turn from being savers to dissavers. Thornton (2001) also noted in his

research that as the population aged, the amount of consumer savings began to decrease.

Age plays a huge role in how much we save. Expenses change as Americans experience different stages of life. As many Americans finish their college degrees and enter into the work force, they are faced with many new expenses. The typical twenty-two year old will have thousands of dollars of student loans they need to begin repaying. This large bill alone will affect how much of their income they put into savings. As Americans get older and begin to have families, many realize the importance of saving for a "rainy day" or even for their family's future. As they reach the middle of their lives (ages 45-54), many parents become "empty nesters" and stop supporting their children. This frees up a significant amount of their income and allows them to put it away. As they reach the later stages of their lives, many retire, travel and begin to give back to others.

Figure 3
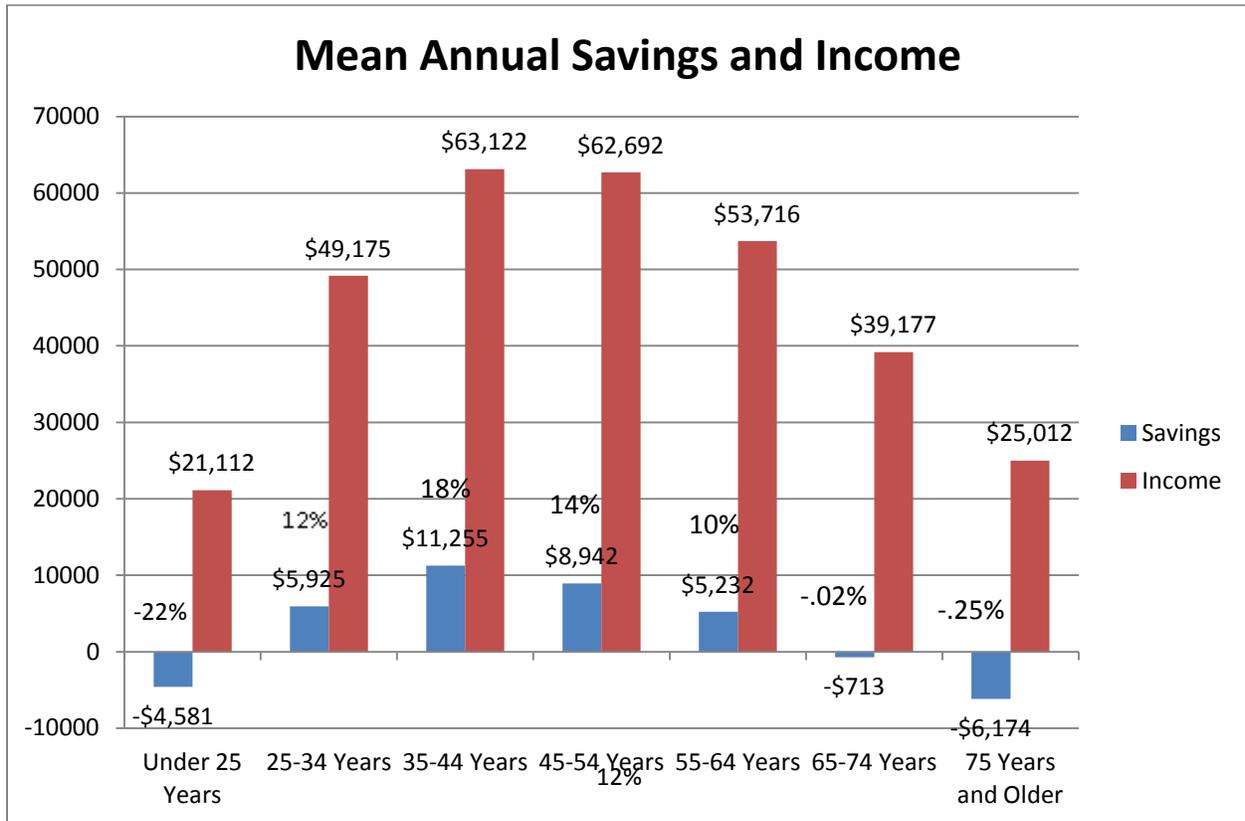
Examination of both the income and savings for consumers shows that the majority of their income is spent. The amount that is saved is minimal compared to the money coming in. This is what causes so many problems for individuals when they suddenly lose their income. They get used to living off the majority of their income and put so little away that without the income they suddenly cannot afford their bills.

Tables 1 and 2 show summary statistics for the variables used in this study. I have broken the data down into eight age categories in Table 1 and into ten income level categories in Table 2.

Table 1. Variable Means by Age Category

Age Category	Savings	Income	Expenses	Age	Family Size	# Kids < 18	N
< 25	-$4,581	$21,112	$25,693	21.5	2.1	0.4	3,204
25-34	5,925	49,175	43,250	29.7	2.9	1.1	7,865
35-44	11,255	63,122	51,867	39.6	3.3	1.4	8,727
45-54	8,942	62,692	53,751	49.5	2.8	0.7	10,047
55-64	5,232	53,716	48,485	59.3	2.1	0.2	8,448
65-74	-713	39,177	39,890	69.1	1.9	0.1	5,405
> 75	-6,174	25,012	31,185	81.5	1.6	0	4,569
All	$4,809	$50,036	$45,226	49.5	2.5	0.6	48,265

For those in the first age category, any age less than 25, there were 3,204 observations. The mean savings is negative, showing that most young individuals spend more than they make. Their mean income is $21,112 and on average they spend $25,692 per year.

For those in the second category, ages 25-34, there are 7,865 observations, averaging almost $6,000 of savings. This average savings is much higher than that of the first age category. Average income has increased to $49,175 and average expenses have also increased to $43,249. This increase in expenses is probably due in part to the fact that the average family size has increased along with the average number of kids less than eighteen.

The third category includes those ages 35-44 and has 8,727 observations. Average savings has continued to rise, reaching just over $11,000 and average income to $63,122. Average annual expenses have also increased, nearing almost $52,000. This increase in expenses is again probably due in part to the rise in average family size and number of kids less than eighteen.

The fourth category is the largest group with 10,047 observations between ages 45 and 54. This age category is now seeing a drop in both average savings and income, with savings being $8,942 and income being $62,692. Even though family size and number of kids under eighteen have both also decreased, expenses have increased compared to the last age category. In fact, this age category has the highest average annual expenses, hitting close to $54,000. This increase in expenses when all the other factors are decreasing could be attributed to the fact that this is the age group where many parents pay for their children's college expenses and even weddings. For many families, even though the children have grown up and moved out of their parents' house, the parents still continue to at least partially support them for a few more years.

For those in the fifth category, ages 55-64, there are 8,448 observations. This is the age category where most are beginning to seriously think about retirement. Some retire while in this category, and some wait until they reach the next age group. Just as in the last category, the average saving and average income are still dropping. Average savings is now at $5,232. and average income is $53,716. Again, family size and number of kids under the age of eighteen have also decreased, but now average expenses are also starting to decrease. Average annual expenses are now down to $48,484, a change in about $5,000 compared to the last age category.

A lot more changes occur in the sixth category, ages 65-74, because this is when most individuals retire. This is the age category where many individuals also begin traveling. Many who are in their early retirement years take advantage of their free time and spend it seeing the world and doing the things that they have always dreamed of doing but have never had the time to do. With 5,405 observations, the average savings

is -$713, the first negative rate since the first category. Average income has dropped considerably, down to only $39,177. Average expenses have dropped down to $39,889, and family size and kids under the age of eighteen are also still decreasing.

The seventh category, ages 75 and up, has 4,569 observations and average savings of just over -$6,000. This age group is definitely dissaving. They are liquidating what they have as a result of their age. Their average income is only $25,012 and expenses are $31,185. As I would expect, family size and number of children under the age of eighteen are still decreasing.

In the eighth category, I consider all ages together. I am looking at a total of 48,465 observations. The average household has just over 2.5 members, with only a small number of the members being under eighteen. Their average expenses are $45,226, average income of $50,036 and average savings of only $4,809.

Table 2. Variable Means by Income Category

Income Category	Savings	Income	Expenses	Age	Family Size	# Kids < 18	N
< $5,000	-$35,538	-$360	$35,178	50	2.3	0.5	9,158
$5,000-9,999	-13,898	7,747	21,644	49	2.0	0.5	2,101
$10,000-14,999	-8,635	12,463	21,097	55	1.8	0.4	3,099
$15,000-19,999	-9,644	17,319	26,962	55	2.1	0.5	2,872
$20,000-29,999	-6,249	24,779	31,028	52	2.3	0.6	5,223
$30,000-39,999	-1,862	34,618	36,480	49	2.5	0.7	4,409
$40,000-49,999	3,987	44,608	40,621	48	2.6	0.7	3,937
$50,000-69,999	10,706	59,071	48,366	48	2.8	0.7	5,633
> $70,000	51,220	128,725	77,506	47	3.1	0.8	11,833
All	$4,809	$50,036	$45,226	50	2.5	0.6	48,265

When looking at the data by income level, it shows that the average savings is the highest when income is also at its highest category. As expected, it also shows us that the less income an individual has, a smaller portion gets put away into savings. The data also shows us that the income level of $70,000 has the largest number of observations compared to all the other categories excluding "All". Age is also a factor in the amount of income and savings. Table 2 shows us that for the average individual; their income will continuously grow until they reach their late 40's and early 50's. Overall, considering all the income levels, the data show us that the average individual saves about $4,809.

The first step in analyzing the microdata is to look at the correlation among savings and the five independent variables.

Table 3. Correlation between Variables

	Savings	Age	Income	Expenses	Family Size
Age	-0.039				
	0.000				
Income	0.651	-0.057			
	0.000	0.000			
Expenses	-0.418	-0.021	0.418		
	0.000	0.000	0.000		
FamilySize	0.050	-0.256	0.194	0.172	
	0.000	0.000	0.000	0.000	
Kids18	0.026	-0.340	0.108	0.099	0.825
	0.000	0.000	0.000	0.000	0.000

The correlation coefficients show that as age and expenses increase, savings decreases. Typically we would think that as a person gets older, they would begin to save more. One thing we need to keep in mind is that once individuals hit retirement age, they typically begin to spend down their savings. They travel more, spend money on grandchildren and simply begin to liquidate what they have.

The data also show that as income, family size and number of kids under the age of eighteen increase so does savings. We would typically think that with a growing family, savings would decrease. One thing to keep in mind is that as families grow, young children grow and begin working for their own money. This extra income for a family will begin to lessen expenses for the parents as the children now have their own

money to spend. The parents can then put away the extra money that they are not spending on their children.

The data show us other results that are consistent with our expectations. As age increases, family size and number of children under eighteen decrease. Also, with the growth of family size and number of children under eighteen, expenses grow.

Methods and Regression Results

To analyze the relation between savings and the independent variables, ordinary least squares (OLS) regression is used. Below is the regression equation.

$$Sav = \beta_0 + \beta_1 Inc + \beta_2 Age + \beta_3 Age^2 + B_4 Family\ Sz + B_5 Kids < 18 \quad (1)$$

Table 4 below shows the results of the regression analysis. The goal of the analysis is to examine how well the independent variables, income, age, family size and number of kids under eighteen, explain the variation in the dependent variable, savings.

Table 4. Regression Results

	(1)	(2)	(3)	(4)	(5)
Intercept	-27.753***	-20.396***	0.540	6.004***	3.135*
After Tax Income	0.651***		0.664***	0.675***	0.667***
Age		1.265***	-1.255***	-1.093***	-1.236***
Age^2		-0.014***	0.012***	0.010**	0.011*
Family Size				-3.150***	
Kids <18					-2.709***
Adj R-Sq	0.423	0.007	0.427	0.432	0.429
F Value	35,423.8***	163.11***	11,997.4***	9,189.04***	9,066.54***

Regression 1 shows the results of a regression of savings on income. For each additional $1 of after tax income, an individual's savings will increase by $0.65. The

adjusted R-square shows that 42.3% of savings is explained by this model. The fact that as income increases so does savings is consistent with Bunting (1991). Since our findings are consistent with his results I can see that history is repeating itself and will likely continue to stay the same.

Regression 2 shows that age has a nonlinear relation with savings. The positive coefficient for age shows that saving increases with age, but the negative coefficient for age^2 shows that for older ages saving falls. The adjusted R-square shows that only 0.7% of the variation in savings is explained by this model. As age reaches higher values, the overall impact on savings is negative. When individuals retire, they have less income, but typically still spend about the same. They will become dissavers and spend money that they had originally put into their savings. This is because they are beginning to liquidate what they have. These findings are consistent with Thornton (2001) whose research concluded that with the aging of the workforce, savings would decrease. As I see with the relationship between income and savings being consistent in the past, I can expect that this relationship between aging and savings will continue with future generations.

The third regression shows us that after controlling for income, age has a predominantly negative impact on savings. The adjusted R-square shows that 42.7% of the variation in savings is explained by this model.

The fourth regression shows us that after controlling for income and, age, family size has a negative impact on savings. The adjusted R-square shows that family size adds a little to the explanatory power of the model with 43.2% of savings explained by this model.

In the last regression model, family size is replaced by kids <18. After controlling for income, age and number of kids under the age of eighteen has a statistically significant negative impact on savings. However, the adjusted R-square of 42.9% is slightly lower than that of model 4, suggesting that family size has a greater influence on savings than kids under the age of 18.

Conclusions

Savings is affected by many factors. Just as Bunting (1991) found, I also conclude that income and savings have a positive linear relation. As income increases, so does the amount of household savings. These findings suggest the trend will continue for years to come.

Results also show that age plays an important role in savings, consistent with the conclusions of Thornton (2001). As individuals reach their twenties, they slowly begin to save. They are starting their careers and also starting to experience having regular expenses. Their savings increase as they age, until they reach retirement age. Then they stop saving and start spending what they have. They begin liquidating what they have and essentially become dissavers. When savings is examined by age group, the expected pattern is clear. When the effect of age on savings is examined after controlling for income, I sometimes see that age has an overall negative impact on savings. As expected, results also show that family size and the number of kids under age 18 have a negative effect on savings.

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