

Retirement Spending and Changing Needs during Retirement: Summary of Regression Analysis

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Introduction

This presentation concentrates on the regression analysis of three waves of data (2001, 2003, and 2005) from the Consumption and Activities Mail Survey (CAMS). The CAMS collects consumption data from a random subset of respondents in the Health and Retirement Study (HRS). The HRS is a nationally representative sample of persons who were aged 51 to 61 in 1992 and their spouses or partners. The survey is longitudinal in nature, with the baseline interview conducted in 1992 and subsequent waves occurring every two years. [Comments on long-term care needs and reverse mortgages will be offered at oral presentation without quantitative data.]

Results of our regression analysis are discussed as follows: First, we review the results for the amount of expenditures for retired respondents and then for non-retired respondents. Eight dependent variables are regressed: Food, housing, clothing, transportation, medical care, recreation and hobbies, charity and gifts, and total expenditures. However, the discussion proceeds by covering each explanatory variable and its association with the different dependent variables. The regressions for expenditures as a percent of all expenditures are then provided, but here there are only seven dependent variables with total expenditures removed from the regressions. In all cases, only statistically significant results are discussed.

Amount of Expenditures: The Retired

Table 1 provides the results from regressions for eight categories of spending amounts for the sample of retired persons. The first two independent variables are the years 2003 and 2005, with the reference category in each case being 2001. Expenditures for food, housing, charitable giving, and in total all show an increase from 2001 to 2003, and clothing expenditures shows a decline in spending (-\$121.22). Similar results obtain for expenditures in 2005 relative to 2001: food, housing, and total spending increase, and clothing expenditures decline over the same period. However, medical expenses show a decline of over \$353 in 2005, and the increases in food and total spending are less significant than in 2003.

In terms of the age groups, the results should be interpreted as the change from the age 65-69 group to the 70-and-over age group. In general, a change to the older age group (70+) is associated with declines in food, housing, clothing, transportation, recreation and hobbies, and in total expenditures. Medical care spending increases for respondents in the older age group by \$437.61. These results are not surprising. Increasing age should translate into reduced budgets and tighter spending except in the area of healthcare.

The next explanatory variable is being black. Blacks spend \$492 less on food than whites, but they spend nearly \$1,500 more on housing than whites do. Moreover, blacks spend much less (-\$818) on

medical care than whites do. The increase in housing expenditures may reflect discrimination in affordable housing. The decline in medical expenditures could be due to the fact that blacks are more likely to draw on public health services and/or that medical services are less available in areas in which blacks live.

Disabled older respondents have generally lower spending patterns than the non-disabled. They spend less on food, transportation, recreation and hobbies, charity and giving, and in terms of total expenditures. These results are probably not too surprising in that participating in many activities (going to the grocery store, taking the bus, engaging in exercise) is more difficult for disabled persons so that they end up spending less.

Single females and single males also exhibit much lower spending patterns than couple households, which is not a surprise given they are single households. The comparison here is between single males and single female households. Single males spend more on food, housing, transportation, and in total amounts than single females, and single females spend more on clothing and charitable giving.

We also included a variable for coverage under health insurance (whether public or private). Those persons who are covered by health insurance generally spend \$4,381 less on housing, nearly \$1,000 less on transportation, and over \$6,000 less in total.

A goal of this study was to see if changes in health status would be reflected in changes in expenditures. However, the results for expenditure amounts do not reflect any association. Neither an improvement in health nor a decline is significantly associated with expenditure changes. This may be because private and public insurance programs cushion most negative health shocks for most people.

The next variables deal with financial positions of respondents in terms of income and wealth, and we have divided wealth into non-housing wealth and housing wealth in order to capture any liquidity aspects of wealth. Income, non-housing wealth, and housing wealth are all positively associated with spending on housing, transportation, recreation and hobbies, charities and giving, and total expenditures. Again, these results are what we would expect. However, food and clothing spending are associated with income and housing wealth but negatively associated with non-housing wealth. Also, spending for medical care is strongly and positively associated with non-housing wealth but is not significantly associated with income or housing wealth. This last result suggests that medical care spending is not income-sensitive.

Table 1 Retired Spending in Amounts

Spending items	Time2003	Time2005	Age	Black	Disabled	Single male Household	Single female Household
Food	543.29**	275.77*	-430.98**	-492.24*	-559.61**	-1409.25**	-1991.73**
Housing	1641.03**	1354.84**	-637.60	1463.25*	-297.10	-2038.95**	-3064.63**
Clothing	-121.22**	-267.03**	-131.18**	20.21	-84.84	-362.81**	-147.11**
Transport	214.97	196.47	-809.61**	176.39	-661.55*	-1514.49**	-2294.10**
Medical	-113.52	-353.74	437.61*	-818.93*	25.86	-2066.57**	-2158.04**
Recreation	-7.36	-83.18	-329.40**	-55.47	-557.77**	-628.80**	-762.48**
Charitable	290.16*	89.49	-16.33	98.67	-651.66**	-923.62**	-742.33**
Total	2580.96**	1298.33*	-1850.07**	213.68	-2993.00**	-9057.34**	-11540.77**

Spending items	Health Insurance	Health Better	Health Worse	Income	Non-House Wealth	House Wealth
Food	-531.74	-110.57	-144.85	11.28**	-4.83**	37.00**
Housing	-4381.84**	678.11	-343.74	41.32**	15.78**	31.90**
Clothing	-126.14	27.92	-70.02	2.70**	-1.87**	8.43**
Transport	-978.14	-12.80	110.36	9.13**	9.65**	9.37**
Medical	-621.74	-129.39	8.35	3.02	8.55**	-4.95
Recreation	-383.32	58.21	-13.76	5.37**	9.07**	13.98**
Charitable	77.31	-111.57	54.85	11.90**	18.07**	3.64
Total	-6923.20**	148.61	-439.29	64.64**	53.84**	103.92**

Notes: (1) * $p < .05$; ** $p < .01$

(2) SAS 9.1 PROC MIXED was used for mixed design multiple regression models

(3) Income is in \$1000, Non-house wealth and house wealth are in \$10,000.

(4) HRS 2000, 2002, and 2004 merged with CAMS 2001, 2003 and 2005.

HRS is Health and Retirement Study (HRS). The HRS is a nationally representative sample of persons who were aged 51 to 61 in 1992 and their spouses or partners. The survey is longitudinal in nature, with the baseline interview conducted in 1992 and subsequent waves occurring every two years. It collects extensive information regarding demographic, employment, pension, health, family structure, and financial characteristics of age-eligible respondents and their spouses or partners.

CAMS is the Consumption and Activities Mail Survey. It is a mail survey to a random subset of respondents in the HRS to gather detailed information on consumption. The first wave of data collection was in 2001. The second wave was in 2003. A third wave of data was collected in 2005 with an additional 800 new respondents to account for new enrollments into the HRS cohort in 2004.

Amount of Expenditures: The Non-Retired

Table 2 provides regression results for spending as an amount by the non-retired sample. We will briefly review these results partly because our focus is on the retired sample but also because there are fewer significant results than with the retired group.

Spending on food, housing, and in total rose in 2003 relative to 2001 for the non-retired group. Spending on clothing actually declined in 2005 relative to 2001. In terms of age, transportation spending declines by \$1,721 for age 70 and older respondents relative to those in the younger category.

In comparing single males and single female households, we see that non-retired single females spend much less than males on food, housing, medical care, recreation and hobbies, charitable giving, and in total. Non-retired single males spend less on clothing.

There is little change in spending among the non-retired when we consider the black respondents, the disabled respondents, those covered by health insurance, or those that experience a change in the health condition.

We do see significant associations with income, non-housing wealth, and housing wealth. For the non-retired, income is positively associated with food, housing, clothing, transportation, recreation, and total spending. Non-housing financial wealth is negatively associated with recreation and hobbies (perhaps the build-up of wealth comes at the cost of not enjoying it). However, non-housing wealth is positively associated with clothing expenditures. Finally, increasing housing wealth is positively associated spending on food, housing, transportation, recreation, charitable giving, and in total.

In summary, there are some similarities between the retired and non-retired samples, chiefly in terms of the effects of financial variables. However, it is interesting that age, race, and disability have more significant effects when people are retired than when they are not retired.

Table 2 Non-Retired Spending in Amounts

Health Insurance	Health Better	Health Worse	Income	Non-House Wealth	House Wealth
-606.41	236.98	1206.49	21.51**	-5.52	36.36
-43.83	1136.17	-1420.15	51.65**	4.94	298.59**
-92.50	380.35	33.91	4.71**	3.27*	-5.59
-853.96	906.37	588.30	24.68**	-4.54	63.65*
-917.38	1380.14	785.93	-0.71	7.89	-2.60
-445.52	313.92	330.25	20.36**	-5.85*	31.13**
1131.63	-621.87	149.01	6.33	9.62	72.74**
-2193.96	4994.62	1202.08	130.04**	6.44	495.43**

Notes: (1) * p < .05; ** p < .01

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Spending items	Time2003	Time2005	Age	Black	Disabled	Single male Household	Single female Household
Food	0.32	0.42	-0.20	-2.56**	0.13	0.11	-0.60
Housing	1.85**	3.41**	-0.29	7.34**	4.65**	6.75**	6.54**
Clothing	-0.61**	-1.08**	-0.24	0.03	-0.36	-0.63**	0.57**
Transport	0.47	0.41	-1.77**	-0.34	-1.44*	-1.04	-4.13**
Medical	-1.25**	-1.78**	2.52**	-3.37**	0.59	-2.87**	-1.10*
Recreation	-0.49**	-0.65**	-0.79**	-0.72*	-1.78**	-0.84**	-1.33**
Charitable	-0.31	-0.63*	0.56	-0.14	-1.80**	-1.48**	0.01

Percentage of Expenditures: The Retired

Table 3 provides the results from regressions for our eight categories of spending percentages (in terms of all spending) for the sample of retired persons. As before, the first two independent variables are the years 2003 and 2005, with the reference category in each case being 2001. Expenditures for housing show an increase of 1.85 percent from 2001 to 2003, and clothing, medical care, recreation, and charitable giving expenditures show decline in spending over the same period. Similar results obtain for expenditures in 2005 relative to 2001, but housing expenditures show a relatively large increase.

In terms of the age groups, a change to the older age group (70+) is associated with expenditure declines in transportation and recreation and hobbies. Medical care spending increases for respondents in the older age group by 2.52 percent. As with the results for spending amounts, increasing age should translate into reduced budgets and tighter spending except in the area of healthcare.

The next explanatory variable is being black. Blacks spend 2.56 percent less on food than whites, but they spend nearly 7 percent more on housing than whites do. Moreover, blacks spend less as a percentage on medical care and recreation than whites do.

Disabled older respondents generally lower spending patterns than the non-disabled. The disabled spend 4.6 percent more on housing than non-disabled persons do. They spend less on clothing, transportation, recreation and hobbies, charity and gifts, but these results are relatively small compared to the difference in housing expenditures.

The next two variables are dummy variables for single-headed households, one for male-headed households and the other for female-headed households. Regardless of gender, single households spend significantly more on housing than their coupled counterparts. This likely reflects the economies of scale that coupled households can achieve in housing spending. Single males and females also exhibit similarly lower spending patterns for transportation, medical care, and recreation, although females spend much less on transportation than single males. Single females will spend more on clothing and charity and gifts than single males.

In terms of health, coverage under health insurance had no significant effect on expenditure patterns when expressed as a percentage. For those retirees that experienced an improvement in their health, there was a modest increase in spending on housing. For those retirees who indicated that their health was worse than before, medical spending slightly increased with spending on recreation and hobbies declined as a percentage of all expenses.

In terms of household income, as income increased expenditures as a percent declined for food and medical care. The latter effect may be a result of better coverage under health insurance programs and/or better overall health among the upper income groups. Income increases were associated with higher expenditures for recreation and charity and gifts.

Like income, greater non-housing wealth was associated with slightly lower expenditures on food and higher expenditures on recreation and charity and giving. Greater housing wealth was positively associated with clothing expenditures and negatively associated with spending on medical care.

Table 3 Retired Spending in Percentage

Spending items	Health Insurance	Health Better	Health Worse	Income	Non-House Wealth	House Wealth
Food	-1.34	0.13	0.31	-0.02**	-0.01**	0.01
Housing	-0.46	1.73	0.08	0.01	-0.01	0.01
Clothing	-0.01	-0.19	-0.19	-0.00	-0.00	0.00
Transport	-0.02	-0.08	-0.41	0.00	-0.00	0.00
Medical	0.13	-0.73	0.85	-0.02**	0.01	-0.02*
Recreation	0.52	-0.08	-0.42*	0.01**	0.01**	0.01*
Charitable	1.17	-0.49	-0.26	0.02**	0.02**	-0.01

Notes: (1) * $p < .05$; ** $p < .01$

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Percentage of Expenditures: The Non-Retired

Table 4 provides the regression results for spending in terms of percentages by the non-retired category. As was the case with the discussion on expenditure amounts, we will briefly review these expenditure percentage results partly because our focus is on the retired sample.

In terms of significant changes in spending over time, both 2003 and 2005 saw housing expenditure increases relative to the percentage of spending in 2001. Moreover, both time periods saw significant reductions in medical care spending relative to 2001. In addition, 2005 experienced increases in transportation expenditures and declines in clothing expenditures. In terms of age, transportation spending declines by over three percent for age 70 and older respondents relative to those in the 65-69 age group. There is a modestly significant increase in medical care spending for the older group as well.

Non-retired blacks spend over 3.6 percent less on food than whites, but they also spend nearly six percent more on housing than whites (although the results are modestly significant). The disabled non-retired spend more on food and clothing than the non-disabled, but the disabled spend much less on transportation and recreation.

Comparing single males and single females in the non-retired category, females spend more than males on housing and clothing, but they also spend less than males on medical care, recreation, and charity and giving.

There is little change in spending among the non-retired when we consider those covered by health insurance, or those that experience a change in the health condition. Moreover, our financial variables also show little effect. Increasing income is negatively associated with medical care spending as a percentage of all expenditures. Income is positively associated with spending on recreation and hobbies. Housing wealth is positively associated with spending on charity and gifts.

Table 4 Non-Retired Spending in Percentage

Spending items	Time2003	Time2005	Age	Black	Disabled	Single male Household	Single female Household
Food	1.68	0.85	1.71	-3.62	9.09**	0.08	-1.79
Housing	3.37	4.78*	-1.02	5.64	3.03	4.39	6.05**
Clothing	-0.54	-1.83**	-0.10	0.75	3.83**	-0.23	0.95*
Transport	0.31	2.09	-3.17**	-1.97	-7.44**	2.62	1.19
Medical	-4.54**	-5.72**	2.09	-1.59	-2.19	-4.76*	-2.54
Recreation	-0.77	-0.32	-0.10	0.87	-2.38	-0.38	-1.90**
Charitable	0.04	0.04	0.61	-0.26	-3.17	-1.53	-1.88*

Spending items	Health Insurance	Health Better	Health Worse	Income	Non-House Wealth	House Wealth
Food	1.11	-1.18	0.39	-0.00	-0.01	-0.06
Housing	-1.04	-0.11	-1.12	-0.00	0.01	0.02
Clothing	0.70	0.42	-0.30	0.00	0.00	-0.02
Transport	-2.36	1.19	-1.10	0.01	-0.02	0.02
Medical	1.07	0.67	2.16	-0.03*	0.01	-0.04
Recreation	-0.70	0.01	0.13	0.02**	-0.00	0.01
Charitable	0.97	-0.51	-0.41	0.00	-0.00	0.07*

Notes: (1) * $p < .05$; ** $p < .01$

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