Executive Summary

Wealth Dynamics and Active Saving at Older Ages: Do They Add Up?

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According to the simple lifecycle model single persons are predicted to spend more than their incomes (dissave) at advanced age when mortality risk is high. Possibly because of data limitations, it has been difficult to demonstrate empirically this prediction, which has raised doubts about the validity of the lifecycle model.

The most direct way of finding whether households dissave is to study active saving, the difference between after-tax income and spending. An indirect method is to study wealth change: over long periods of time macro shocks should average out so that if households dissave wealth will decline. We present results on both active saving and on wealth change for singles and for couples. They are based on two different kinds of data from the Health and Retirement Study (HRS), a general-purpose biennial survey that is representative of the U.S. population age 51 and over. For singles we find good evidence of dissaving at advanced ages, which is consistent with the lifecycle model. The wealth of couples declines slowly, but because of the complexities of the lifecycle model for couples, we cannot make any simple comparison of predictions with outcomes. Both for singles and couples, the analysis based on wealth change implies larger rates of dissaving than that based on active saving.

Wealth change

To construct life cycle saving patterns based on wealth change we exploit the panel nature of the HRS data spanning 12 years (1996 to 2008). Our measure of wealth change is based on three comparisons: average wealth in one wave of the HRS compared with

average wealth in the following wave (ratios of means); median wealth in one wave compared with median wealth in the following wave (ratios of medians); and the median of the change in individual or household wealth from one wave to the next. To smooth out macro shocks and measurement error we average these changes over six panel transitions. All of these comparisons hold the composition of the sample constant from one wave to the next.

As shown in Table 1, among single persons living alone all three measures of wealth change show dissaving from age 75 on.[1] In the other age bands there are differences depending on the measure of wealth change. In our view the measures based on medians combine reliability and theoretical appeal in the best manner. The ratio of medians indicates large rates of wealth decline: a 9% decline for those in their late 70s, just under 11% decline for those in their early 80s and an even larger decline among those age 85 and older (16%). The medians of individual changes, which are the rates of wealth decline for the persons in the middle of the distributions, are closely comparable to the ratio of medians except in the first age band.

Based on medians wealth drops sharply, so that a single person who survives from 65 to 90 would have 30-35% of initial wealth.[2] The survival rate from age 65 to age 90 is about 21%, so that significant numbers would survive with that rather low percentage of initial wealth.

The basic life cycle model does not give clear predictions in the case of couples because the amount of wealth a couple will want to leave to the surviving spouse depends in a complex way on his or her economic circumstances. We find that the wealth of couples declines at modest rates when the calculations are based on medians, but increases slowly when they are based on means (not shown). For example, according to the median individual change a typical couple would still have about 80% of initial

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[1] Our main results are for single persons living alone and for couples living alone because the life-cycle model does not give clear predictions for more complex households. For the sake of completeness we also present in the paper results for all single persons and all couples.

[2] Among all singles, whether living alone or not the general pattern is the same and the quantitative outcomes are quite similar: as measured by medians, the rate of dissaving is substantial, leading to remaining wealth at age 90 of about 30-38%.

wealth when the oldest spouse is 85.[3] Thus couples preserve wealth for the surviving

spouse.[4]

Active Saving

To derive our measure of active saving, defined as after-tax income minus

spending, we link data from the HRS supplement the Consumption and Activities Mail

Survey (CAMS) to observations on income from the core HRS survey for the same

households. For every wave of CAMS we match spending with the income recorded in

the following HRS wave which records income for the last calendar year. The HRS

elicits pre-tax income. To arrive at post-tax income we use the NBER tax calculator

"TAXSIM." Because we do not have sufficient information to calculate the taxes of

household members other than the respondent and the spouse we restrict the analysis to

singles and couples living alone.

Except for people in their late 60s, the youngest age band in our analysis, we find

dissaving at all ages among singles living alone (Table 2). The rates of dissaving are

greatest in the highest ages, just as we found for wealth change. However, the

magnitudes of the saving rates based on active saving are substantially smaller than what

we found based on wealth change. For example, at age 90 single persons would have

about 70% of initial wealth according to active saving based on medians, whereas they

would only have about 35% of wealth remaining according to the estimates based on

median wealth change.

For couples living alone the saving rates are positive at all ages which implies

increasing wealth. This reinforces the results based on wealth change: couples preserve

wealth for the surviving spouse.

Consumption Paths

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[3] The chances that both spouses survive until age 85 are small. Most couple households will become single
before then.
[4]Among all couples, whether living alone or not, we find the same general patterns.

The life-cycle model predicts that consumption by single persons will decline with age possibly beginning soon after retirement. To verify that the consumption data underlying our analysis are consistent with this prediction we analyze the consumption-age profiles in CAMS. We calculate changes in consumption averaged over three panel transitions in spending (2001/03, 2003/05, 2005/07). The calculations are analogous to those for wealth change: ratios of means, ratios of medians and the medians of individual rates of change. Among singles living alone spending sharply declines with age which is consistent with the simple life-cycle model when there is no bequest motive.[5]

For couples living alone, all three measures show declines in spending with age. Because of the complexity of the first-order conditions for dynamic consumption by couples with age, no simple model comparison is possible. The rates of decline calculated over all couples are similar to those of couples living alone.

Simulations

We use simulation methods to find how closely the results on dissaving based on wealth change compare to those based on active saving. The consumption paths are nonparametric life-cycle paths, and if they are stable across cohorts we can predict wealth change over the lifetime of a cohort. Our method is to simulate the consumption and wealth paths of each single person based on initial consumption (age 65-69), the estimated consumption paths, and observed gross income, adjusted for taxes. The simulation continues until a random date of death is realized. The method is similar for couples except that after one spouse dies, the consumption by the surviving spouse will follow the consumption path of single persons. We compare the simulated wealth paths with actual wealth paths as estimated from wealth change in panel data. These simulations take into account differential mortality, the inheritance of wealth by the surviving spouse, taxes and the mix of assets as between tax sheltered and post-tax.

We find that the simulated wealth paths depend strongly on interest rate assumptions. When we assume a real interest rate of 3% for the simulations of single persons, wealth increases for several measures of wealth change. When we assume a real

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[5] The results for all single persons are similar.

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interest rate of 0%, wealth decreases although not as strongly as actual wealth change. Based on historical increases in housing and stock prices over the period 1996-2008 and on the actual observed ratio between income from assets and asset values in the HRS, we estimate that real rates of return were barely positive. Thus we favor the simulations that use a 0% real rate of return.

Among couples, an interest rate of 0% approximately reproduces the wealth paths estimated from the panel, lending support to this interest rate assumption.

Conclusions

We have shown three types of results: wealth change, active saving rates and simulated wealth paths. In the case of singles they are broadly consistent. Singles dissave after age 65 according to all but one measure, and after about age 74 according to all measures. One notable discrepancy is the difference in the rate of wealth decline when measured by active saving. Active saving implies much slower wealth decline.

Among couples the rate of wealth change eventually becomes negative, but the overall rate of wealth decline is much lower than among singles. Active saving by couples is always positive.

We conclude that the patterns of wealth change by singles are consistent with a simple life-cycle model where the only uncertainty is mortality. The patterns of active saving by singles are also consistent with the model. Among couples the pattern of wealth change is also consistent with the life-cycle model although caution should be exercised when speaking of the quantitative pattern. However, active saving implies consistent wealth accumulation, which is not observed in the wealth change data.

The source of the discrepancy between wealth change, which should be reliable over long periods, and active saving could arise from a number of factors. Capital gains—whether realized or unrealized—do not enter the calculation of active saving. To the extent that they are positive, however, they would deepen the discrepancy between wealth change and active saving. Income as measured in the HRS may be too large. While possible, it seems unlikely because HRS income is close to estimates from the Current Population Survey. Our tax calculations may underestimate taxes: we have no

basis for assessing the likelihood of this. Finally, we may be under-measuring consumption. We believe this is the most likely explanation. It is difficult for respondents to remember completely their spending. Although our measure of consumption is close the measure from the Consumer Expenditure Survey (CEX), the CEX itself has been criticized as under-stating spending levels. But we note that spending among those age 75 or older is considerable lower in the CEX than in CAMS. Thus were we to use the CEX spending measures we would find even greater discrepancies between wealth change and predicted wealth based on active saving.

Table 1
Single persons living alone. Two-year percent change in wealth.

Age	ratio of means	ratio of medians	median of individual change
65-69	1.8	0.2	-5.3
70-74	5.8	-5.4	-6.5
75-79	-3.9	-9.0	-8.9
80-84	-1.8	-10.7	-8.4
85+	-7.3	-15.8	-17.9

Table 2
Single persons living alone. Two-year percent change in wealth based on active saving

Age	ratio of means	ratio of medians	median of Individual change
65-69	-0.2	0.2	0.6
70-74	-0.8	-2.0	-1.0
75-79	-0.2	-2.8	-1.0
80-84	-1.4	-2.8	-1.4
85+	-4.0	-5.4	-2.0