

The Retirement-Consumption Puzzle:  
Anticipated and Actual Declines in Spending  
at Retirement

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# **The Retirement-Consumption Puzzle: Anticipated and Actual Declines in Spending at Retirement**

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## **Abstract**

The simple one-good model of life-cycle consumption requires “consumption smoothing.” However, British and U.S. households apparently reduce consumption at retirement and the reduction cannot be explained by the life-cycle model. An interpretation is that retirees are surprised by the inadequacy of resources. This interpretation challenges the life-cycle model where consumers are forward looking. However, data on anticipated consumption changes at retirement and on realized consumption changes following retirement show that the reductions are fully anticipated. Apparently the decline is due to the cessation of work-related expenses and the substitution of home production for market-purchased goods and services.

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## 1. Introduction

The simple one-good model of life-cycle consumption requires “consumption smoothing.” The trajectory of consumption by an individual should be continuous in time. If the trajectory is not continuous, a reallocation of consumption so as to reduce the size of the discontinuity will increase utility without an increase in the use of resources. However, British households apparently reduce consumption at the ages associated with retirement, and the reduction cannot be explained by the life-cycle model (Banks, Blundell and Tanner, 1998). Households in the PSID sharply reduce several components of consumption at retirement (Bernheim, Skinner and Weinberg, 2001). The observed drop in consumption at retirement is the retirement-consumption puzzle.

The explanation for the drop in consumption has important implications for economic theory. Banks, Blundell and Tanner interpret the drop to be the result of “unanticipated shocks occurring around the time of retirement (p. 784).” Bernheim, Skinner and Weinberg take the decline (as well as patterns of wealth holdings) to be evidence against models of behavior in which agents are rational and forward looking. Retirees are surprised to find that their economic resources are fewer than anticipated, forcing them to reduce consumption. “If households follow heuristic rules of thumb to determine saving prior to retirement, and if they take stock of their financial situation and make adjustments at retirement (so that the adequacy of saving is “news”), then one would expect to observe the patterns documented in this paper (p. 855).” If these interpretations of the retirement-consumption puzzle are correct, the puzzle casts doubt on models of rational forward-looking economic behavior, such as the life-cycle model. Because the life-cycle model is the standard model for the analysis of intertemporal decision-making at the household level, its rejection would require a substantial change in research strategies.

There are, however, other interpretations of the retirement-consumption puzzle. The most obvious interpretation has to do with work-related expenses, but it appears that such expenses are not large enough to explain observed drops in consumption at retirement. A second obvious explanation is that suddenly households have considerably more leisure, and this leisure can be used to purchase goods more efficiently or to substitute home-produced goods for purchased goods. However, the increased leisure can also lead to increases in purchased goods because of complementarities. The overall effect is an empirical matter, but we would *expect* consumption to change at retirement, not that it be smooth. A third is that the timing of retirement is uncertain. For some retirement is due to a health event or unemployment, resulting in an unexpected reduction in lifetime resources, which leads to a concurrent reduction in consumption. Such a reduction in consumption is well within the spirit of the life-cycle model.

This paper has three main goals. The first is to present evidence that prior to retirement households anticipate reducing consumption at retirement, and that the reduction is fully consistent with the reductions that retirees report having made when they retired. That is, the *ex ante* and the *ex post* reductions in consumption are consistent with rational anticipatory behavior: at least as measured by consumption the adequacy of savings is not “news.” Second we will offer evidence that some of the variation in anticipated and realized consumption as a function of observable characteristics is consistent with uncertainty about the timing of retirement. The third goal is to document that the pattern of spending and time-use before and after retirement is qualitatively consistent with models of household production in which time is combined with purchased goods to produce utility. In such a model we would expect that the volume of purchased goods as measured in the Consumer Expenditure Survey would change in a discontinuous manner when the volume of leisure changes in a discontinuous manner as it does at retirement.

## 2. Background

Hamermesh (1984a) estimated models of consumption and leisure based on the Retirement History Survey (RHS). The consumption measure is partial consumption, which was estimated by Hamermesh to comprise slightly more than half of total spending. Because the study is based on the behavior of white males aged 62-69 for whom most of the variation in leisure is due to full-time work versus complete retirement, the study is essentially a comparison of the spending behavior of households in which the husband is retired with the spending behavior of households in which the husband is not retired. For the purposes of our paper the main finding is that leisure and consumption are complements: the residuals from estimated demand for consumption and demand for leisure are positively correlated, implying that after controlling for observed Social Security wealth, pension wealth, bequeathable wealth and earnings, the retired consume more than those who are working.

While we admire the spirit of this work, particularly the view that household production will modify the demand for purchased goods, we have reservations about the data and about the resulting estimations. First, the finding that retired households have greater consumption is at odds with results based on better measures of consumption such as those reported by Banks, Blundell and Tanner (1998) based on the 25 cross-sections of the British Family Expenditure Survey (FES). Furthermore, in the Consumer Expenditure Survey (CEX) consumption is substantially lower in the post-retirement years than in the pre-retirement years. Thus, in both the FES and the CEX retirement is associated with lower consumption. Second, bequeathable wealth is always measured with error, and in the RHS pension entitlements in particular are not well measured. Mis-measurement of these variables will induce a positive correlation in the residuals such as was found by Hamermesh, and it is likely that the effect could be substantial. Unlike the usual case with measurement error, the sign of the correlation is not preserved: a true negative correlation could be estimated to be positive.

By comparing the RHS partial measures of consumption with measures from the CEX, Hamermesh (1984a) estimated that post-retirement consumption was about 12 to 16 percent greater than total income, including income that would result from the annuitization of bequeathable wealth. An interpretation that is consistent with the retirement-consumption puzzle is that some households retired recently and they have not yet adjusted their consumption to the unexpected reality of lower incomes in retirement. Note, however, that these households are not working, but they are not necessarily recently retired. An alternate interpretation is that these households are simply following the life-cycle model: consumption should be greater than income because households aim to spend their resources before dying.

Hamermesh also found that between 1973 and 1975 consumption was reduced among 171 panel households by about nine percent (real) over two years. This reduction in consumption in two waves of the panel is consistent with reductions based on six waves of the RHS panel where the maximum age reaches 73 and where most of the households are not newly retired (Hurd, 1992). That is, the decline in consumption cannot be related to any shock of discovery about resources shortly following retirement. Hamermesh interprets the results on both the levels and changes in consumption as “retired households optimize by consuming beyond their means early in retirement and reducing consumption rapidly as they age. They do this because of their tastes... (Hamermesh, 1984a, page 6).” He supposes these tastes to be a bequest motive and a high rate of time discount

and that the reduction in consumption is not because of the inability to plan optimally for consumption in retirement.

Banks, Blundell and Tanner (1998) used data from 25 years of the British Family Expenditure Survey (FES). Because the FES is a series of cross-sections, one cannot observe retirement at the household level and any associated change in consumption. Rather the change must be inferred by observing the variation in consumption from household-to-household as a function of whether the household is retired. After accounting for work-related expenses, changes in consumption that may be related to mortality risk, and other determinants that may be anticipated by the household, Banks, Blundell and Tanner find (p. 784) that “Whereas the anticipated fall in consumption growth is around 2 percent, actual consumption growth at retirement falls by as much as 3 percent.” They argue that “...the evidence points to the arrival of new and unfavorable information at retirement (p. 770).” In our view a gap of one percent in the change in consumption is well within the range that could be produced by a model of household production especially in view of how little is known about household production.<sup>1</sup> Furthermore, the data themselves are less than ideal in that they are synthetic cohorts rather than true panel data.

Bernheim, Skinner and Weinberg (2001) base their estimate of the drop in consumption on the change in food consumption, both at home and away from home, and on the implicit flow of housing services from owner-occupied housing and from rental housing. The total of these consumption items is inflated up to an estimated total by a factor derived from the ratio of these items to total consumption in the CEX. In that the inflation factor is fixed, the estimated percentage changes in total consumption are the same as the percentage changes in the sum of food and housing consumption.

Bernheim, Skinner and Weinberg estimate that among 430 households in the PSID from 1978 to 1990 consumption dropped by an average of 14% at retirement with a median drop of 12%. Their interpretation of this decline is that households take stock of their economic resources shortly after retiring, and find that they are less than they had anticipated. The inadequacy of saving is “news” and so they adjust consumption downward just as they would when faced with any negative shock. In their view this presents a challenge to the life-cycle model in which agents are far-sighted and rational: why do agents not continually assess economic resources and continuously adjust consumption? Or stated differently, why did they not reduce consumption before retirement so that the consumption path would be smooth?

We do not dispute the finding that consumption drops at retirement: indeed consumption by 65-74 year-olds is just 72% of consumption by 55-64 year-olds in the 1986-87 CEX, and although this figure is partly the result of compositional changes in household structure, it is unlikely that accounting for compositional change would alter the conclusion that consumption declines at retirement.

According to the 1986-87 CEX, shelter (owner-occupied housing, rental housing and other lodging) accounts for 13.3% of the spending by 55-64 year-olds, food at home accounts for about 8.9% and food away from home accounts for 5.8%. Thus shelter is the largest component of consumption in Bernheim, Skinner and Weinberg, and although they do not report separately how much of the 14% decline is due to housing, it must be a considerable amount simply because it is

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<sup>1</sup> Banks, Blundell and Tanner state that they have used appropriate instrumental variables to control for changes in consumption that are due to anticipated retirement. We do not see how instrumental variable estimation can account for the changes in the marginal utility of consumption of purchased goods that a model of household production specifies.

47.6% of the budget they consider. It seems obvious, however, that there are other, quite good reasons for a decline in the consumption of housing services at retirement. First, of course, a change in consumption can only happen among those households that move. Retirement is associated with a spike in moving because the job no longer ties the household to a particular location. Therefore any long-standing desire to move will be realized shortly after retirement. Second, the move provides the opportunity to adjust housing to its desired level from a level that was likely excessive, the result of holding on to the family home even after the children have left. A reduction in food away from home is likely to be anticipated because some of it is work-related. As for food at home the shift toward eating more meals at home would suggest an increase in spending, but the greater availability of leisure may facilitate a shift toward cheaper ingredients, causing total spending to decline. Thus an anticipated change could either be positive or negative, and it is an empirical matter which factor dominates.

Our conclusion from this review of the literature on the retirement-consumption puzzle is that while there seems to be a reduction in consumption at retirement we see no convincing evidence to support the view that this drop is caused by households being shocked at the inadequacy of resources when they reach retirement. The most obvious explanations for the decline have to do with the cessation of work-related expenses and with home production, and so it is to these explanations we should look first, rather than to failures of our standard model. We do not move directly to the estimation of models of household production, which is not an easy task (Pollak, 1999), but investigate instead whether the drops in consumption were anticipated. If they were, we would want to estimate models of household production in the context of a life-cycle model; if they were not we would want to assess alternative explanations for intertemporal household decision-making.

In this paper we use data on anticipated spending change at retirement and actual spending change as recalled by those already retired.<sup>2</sup> Our main result is that spending declines at retirement by 15% to 20%. At ages approaching a typical retirement age the anticipated decline in spending is almost the same as the actual decline. On average people are not surprised at retirement by the decline in spending. These results are direct evidence against the interpretation of Bernheim, Skinner and Weinberg and of Banks, Blundell and Tanner for the decline in consumption at retirement. In that interpretation people are surprised by their low levels of economic resources, and therefore have to reduce consumption in accommodation. They would not anticipate such a decline in consumption. Our results suggest that we should look for mechanisms associated with retirement that would allow for a reduction in consumption, rather than abandoning the life-cycle model as suggested by Bernheim, Skinner and Weinberg. These mechanisms would include the cessation of work-related expenses and home production, which can substitute for market purchased goods. They would also include stochastic events that precipitate earlier-than-expected retirement, and which result in a reduction in life-time resources. While such retirement is “news” from the point of view of the individual it is not from the population point of view.

## Theoretical background

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<sup>2</sup> Spending differs from consumption because of durable purchases and in-kind transfers. Our measure is spending, which we will use interchangeably with consumption. At the population level spending and consumption are the same in steady-state.

In its simplest form the life-cycle model (LCM) with one consumption good specifies that individuals choose a consumption path to maximize expected lifetime utility, and that the instantaneous utility function is unchanging over time. The shape of the optimal consumption path is partially or wholly determined by utility function parameters, the interest rate and mortality risk. The level of the path is determined by the lifetime budget constraint, and the difference between the level of consumption and income determines the saving rate and the equation of motion of wealth. Auxiliary assumptions, which are not controversial, state that marginal utility is continuous in consumption and that marginal utility declines in consumption. The former is an optimality condition assuring lifetime utility maximization: were it not continuous a reallocation of consumption across the discontinuity from the low marginal utility state to the high marginal utility state would increase total utility without a greater use of resources. Such a reallocation should continue until there no longer is a discontinuity in marginal utility. Because consumption is monotonic and continuous in marginal utility, an implication is that consumption must be continuous in time. That is, consumption must be smooth over time.

In a more general model, which recognizes uncertainty, individuals or households experience unanticipated windfall gains or losses to wealth, earnings or annuities, and then reoptimize to a new consumption path, causing a discontinuity in the consumption path. However, wealth, earnings or annuity changes, which are foreseeable, should cause no change in the consumption path because the lifetime budget constraint has not changed. In particular consumption should not change at retirement if retirement occurs as planned.

Several generalizations in the spirit of the simple LCM lead to a change in consumption at retirement. If some of measured consumption is, in fact, work-related expenses, consumption as measured by spending would drop at retirement, but utility-producing spending would not. This is a measurement issue. A second generalization is that retirement is stochastic. If retirement is sooner than expected lifetime resources will be less than expected so that consumption will have to be adjusted downward. The obvious example is a stochastic health event that causes early retirement. Negative health shocks leading to early retirement are undoubtedly empirically important, so that we should expect to observe some unanticipated decline in consumption at retirement from these shocks alone. It should be noted that consumption decline would not be offset by consumption increases by those not experiencing negative health shocks, which could be described as positive health shocks when measured as deviations from expected health. Consider a pool of workers of age 50 who all plan to retire at 62 unless they have a health shock prior to 62. With each passing year some fraction of the workers does experience the shock, and leave the labor force reducing consumption. The remaining workers, having survived a year of risk, can increase consumption while still working. In a continuous-time model consumption would be adjusted upward continuously so that at retirement it would remain constant. In a discrete time model there could be a small upward adjustment due to the coarseness of the measurement interval. It should also be noted that at age 50 all the workers expect a decline in consumption at retirement, but that the magnitude of the expected decline will decrease with age among the remaining workers.

A third generalization of the LCM specifies that utility depends on more than one good, in particular leisure as well as consumption. An extension of this model is one of home production in which leisure is combined with purchased goods to produce utility. While we will show empirical outcomes that can be interpreted in the context of a model of home production, for the expository purposes of this section such a model is not necessary.

If the utility function is  $u(c, l)$  the implications for retirement on consumption depend on whether the utility function is separable; that is, whether the marginal utility of consumption

depends on  $l$ . Whether the utility function is separable or not, utility maximization requires that the marginal utility of consumption,  $u_c$ , be continuous in time by the same argument as above. Then if the utility function is separable and  $u_c$  continuously declines in  $c$ , consumption will also be continuous.

If the utility function is not separable, but retirement is gradual so that  $l$  increases slowly, consumption will also change in a continuous manner. But the normal case is that retirement is sudden, and  $l$  increases abruptly by about 2,000 hours per year. A condition of utility maximization is that  $u_c$  be the same immediately before and immediately after retirement: the argument is the same as we gave earlier in the context of a single good model of the LCM. Now, however, because of nonseparability and because of the sudden change in  $l$  the LCM *requires* a discontinuous change in consumption.

Whether consumption will increase or decrease depends on whether  $l$  increases or decreases the marginal utility of consumption. With an exogenous change in  $l$  consumption will change according to

$$\left. \frac{dc}{dl} \right|_{u_c = \text{constant}} = - \frac{u_{cl}}{u_{cc}}$$

where  $u_{cl}$  is the derivative of marginal utility of consumption with respect to  $l$  and  $u_{cc}$  is the derivative of marginal utility of consumption with respect to  $c$ . In that  $u_{cc}$  is negative, consumption will increase at retirement when  $u_{cl}$  is positive, and it will decrease when  $u_{cl}$  is negative.

To illustrate how consumption might change at retirement we suppose that the instantaneous utility function is a constant elasticity of substitution embedded in a constant relative risk aversion framework. That is

$$u(c, l) = \frac{1}{1-g} \left( a c^q + (1-a) l^q \right)^{\frac{1}{q} (1-g)}$$

Suppose that  $l$  changes due to retirement. We ask: what is the required change in consumption that will keep the marginal utility of consumption constant?

Marginal utility of consumption,  $u_c$ , is

$$u_c = \frac{1}{q} D^{\frac{1-g}{q}} \frac{dD}{dc}$$

where  $D = a c^q + (1-a) l^q$ . Put  $du_c = u_{cc} dc + u_{cl} dl = 0$  and then

$$\left. \frac{dc}{dl} \right|_{u_c} = - \frac{u_{cl}}{u_{cc}}$$

Then

$$\left. \frac{d \ln c}{d \ln l} \right|_{u_c} = (1-g-q) \frac{(1-a) l^q}{(1-q)(1-a) l^q + a g c^q}$$

If  $\rho = 0$ , the instantaneous utility function is Cobb-Douglas. Most empirical investigations find that  $\rho$  the risk aversion parameter, is greater than 1.0, and in many cases considerably greater than 1.0.<sup>3</sup> If that is the case, an increase in leisure will be associated with a decrease in consumption. In the more general case the sign of the effect will depend on the sign of  $1 - \rho - \eta$ . In the CES function the degree of substitution between [leisure and consumption](#) depends on  $\eta$  with small values of  $\eta$  corresponding to less substitution. For example, if  $\rho = 2$  and  $\eta > -1$  an increase in leisure will be associated with a decrease in consumption. Of course for other parameter values an increase in leisure will be associated with an increase in consumption. In this paper we will not estimate any of these parameters: our purpose in this exposition is to illustrate that we would expect consumption to change at retirement.

We imagine that there are many types of leisure activities; some are substitutes for consumption such as home repairs, some are complements with consumption such as travel and some are neutral such as watching television. Everyday observation and introspection say that we have all types, and it is an empirical question as to which dominates. But the main point is that we would not expect consumption to be smoothed over retirement.

Because of differences in tastes and differences in economic resources we expect heterogeneity over households in whether substitution or complementarity dominates. For example, someone with high wealth may continue to purchase home repairs as before retirement, but spend more on travel with a net effect of an increase in spending. Someone with a high wage rate may have purchased home repairs before retirement but will do them himself after retirement for a net reduction in spending.

To the extent that retirement is planned and anticipated, and that before retirement workers can imagine their activities and spending after retirement, they should be able to state how spending will change at retirement, and on average the actual changes should match the anticipated changes. However, it is more realistic to think that workers who are far from retirement will have some difficulty imagining what their activities and spending will be after retirement. Therefore we should expect some discrepancy between anticipations and realizations when the time to retirement is substantial.

In this discussion we have simplified the problem by assuming that retirement is given exogenously. Whether retirement is chosen does not affect the discontinuity in consumption when leisure and consumption are not separable provided the increase in leisure is discontinuous. As an empirical matter a substantial majority of retirement is from full-time to completely out of the labor force, and there are good reasons for such a sharp transition. For example, a DB pension plan can have such strong incentives to retire that workers within a wide range of tastes for retirement will all retire. Most firms will not allow a gradual reduction in work hours, so that a worker who would like to retire gradually will be forced to change employers and possibly occupations (Hurd, 1996)

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<sup>3</sup> For example, Barsky, Kimball, Juster and Shapiro (1997) estimate that most people have a risk aversion parameter greater than 2.0.

## Data

Our data come from the Health and Retirement Study and from a supplemental survey to the HRS, the Consumption and Activities Mail Survey (CAMS). The HRS is a biennial panel. Its first wave was conducted in 1992. The target population was the cohorts born in 1931-1941 (Juster and Suzman, 1995). Additional cohorts were added in 1993 and 1998 so that in 2000 it represented the population from the cohorts of 1947 or earlier. The HRS interviewed about 20,000 subjects in the year 2000 wave. In October, 2001, CAMS was sent to 5000 persons, a random sub-sample of the HRS. In married households it was sent to one of the spouses. There were about 3800 responses.

Although the response rate was high there was some differential non-response by demographic characteristics. HRS has supplied weights to account for non-response, and most of our analyses will use them. Because our main variables are about household spending we will use the household weights. We have conducted parallel analyses using unweighted data and the results are very little different.

CAMS has three main topics.

Part A. 36 activities or uses of time. This section requested that the addressee answer the section.

Part B. 32 consumption categories. This section requested that the most knowledgeable person about spending answer the section. It asked about the following aspects of consumption:

- Spending on 6 big ticket items (durables)
- Spending on 26 non-durable items
- Anticipated spending change at retirement among those not retired.
- Actual spending change at retirement among those already retired.
- Spending change to hypothetical income change

Part C. Prescription drugs use. This section requested that the addressee answer the section.

Besides prescription drug use it also asked about labor market status in a more detailed way than in Part B.

The focus of this paper is on anticipated and actual change in spending at retirement, and time use as it varies with retirement status. We will make limited use of the information in Part C about labor force status, and we will link to the HRS core data to obtain data on income, wealth, health and other personal characteristics. Our main analyses will be based on data from the following question sequence.

**Excerpt from the CAMS Questionnaire:**

Question B38.

We would like to understand more about spending in retirement.

Are you retired?

\_\_\_\_\_ Yes → **Complete BOX A**

No → **Complete BOX B**

<p><b>BOX A – Retired:</b></p> <p><b>a.</b> How did your TOTAL spending change with retirement?          _____ Stayed the same → <b>Go to c</b>          _____ Increased          _____ Decreased</p> <p><b>b.</b> By how much?          _____ %</p> <p><b>c.</b> For the items below, check (✓) whether the spending increased, decreased or stayed the same in retirement:</p>	<p><b>BOX B – Not Retired:</b></p> <p><b>d.</b> How do you expect your TOTAL spending to change with retirement?          _____ Stay the same → <b>Go to f</b>          _____ Increase          _____ Decrease</p> <p><b>e.</b> By how much?          _____ %</p> <p><b>f.</b> For the items below, check (✓) whether you expect spending to increase, decrease or stay the same in retirement:</p>
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<b>B39.</b>	Increase(d)	Decrease(d)	Stay(ed) the same
a. Trips, travel, or vacations			
b. Clothing			
c. Eating out / food and beverages			
d. New home, home repairs, or household items			
e. Entertainment, sports, and hobbies			
f. Automobile expenses			

Table 1 shows the distribution of the sample by retirement status. About 65% of the sample is classified as retired according to the answers in B38, and about 6% did not respond.

Table 2 shows that about 69% of those who are not retired say that they expect to decrease spending with retirement, but just 4% say they expect to increase spending. Among those who are retired, about 52% say they reduced spending when they retired and about 12% say they increased spending.<sup>4</sup> Although the percentages will change somewhat with our selection of an analytical sample, these numbers convey the main finding of the paper: most of those not yet retired anticipate that they will reduced spending when they retire, and most of those who have retired did decrease spending. At the population level to the extent that there is any discrepancy between

<sup>4</sup> The unweighted percentages are: 67% of the retired anticipate a decline in spending at retirement and 51% of the retired had a decline. This amount of variation between the weighted and unweighted percentages is typical of our results.

anticipations and realizations, it is that the anticipations of a reduction are greater than the realizations. This explicitly shows that the observed drop in spending at retirement is not a consequence of people being caught by surprise when they leave the labor force but that this reduction is intentional and well part of their plans.

These results are similar to those of Ameriks, Caplin and Leahy (2002). They found in a sample of TIAA-CREF participants that among those not retired 55% expect lower spending in retirement, 35% expect the same and 10% expect an increase in spending. Among those already retired 36% experienced lower spending, 44% had the same spending, and 20% an increase in spending. The main difference between the TIAA-CREF sample and our sample is that the TIAA-CREF sample is much wealthier. As we report below the wealthier anticipate and realize smaller reductions in spending, which would qualitatively explain the difference in magnitudes between the Ameriks, Caplin and Leahy results and ours. The main point, of course, is that their results do not support the interpretation of Bernheim, Skinner and Weinberg.

The only respondents excluded from Table 2 are those whose retirement status is unknown. But there are other indicators of data quality that we would like to resolve. Some respondents stated they were retired, yet filled out Box B which is intended for the not-retired, and some respondents did the opposite. A few respondents filled out both boxes giving diverging information and the researcher has no means of deciding which one is more appropriate to use. We deleted these cases (16 cases). In some cases the respondent was not the addressee, but a child or neighbor of the addressee. This poses three problems: first, we have little confidence that such a person could give accurate information about expectations of spending change at retirement or about actual spending change at retirement which could have happened a number of years in the past; second, it is not clear whether this third party answered the questions on retirement status and total spending referring to the addressee or to themselves; finally, in order to use additional personal characteristics of respondents we need to be able to link to the HRS core survey which obviously does not contain observations for children or neighbors. We deleted these observations as well some other cases where we could not match the respondent to the HRS core survey (113 cases). After a few additional selections we have an analytical sample of 3402 responses on the CAMS anticipated or experienced spending questions.

Our measure of retirement is rather crude, and we would like to refine it. After some preliminary investigation of using retirement status in HRS 2000, we decided against it because the retirement status of some respondents probably changed in the year between the HRS 2000 interview and CAMS. Instead we used information from part C of CAMS in which respondents were asked about more detail on their labor force status. The distributions are given in Appendix Table 1. The main source of discrepancy is that about 6% of those who say they are retired in part B, say they are working in part C. This magnitude of discrepancy is typically found in the HRS where people are allowed to report a retirement status based on their own definition rather than on an objective definition.

There is some variation in anticipations and realizations of spending change according to detailed work status in CAMS section C. We have no method of resolving discrepancies between B38 and section C reports. We will categorize as not retired or retired according to B38 and in our regressions use categorical variables on the right-hand side to account for section C retirement status.

The age distribution of the respondents after these selections is shown in Figures 1 and 2. Both the not-retired and retired range in age by about 40 years. Particularly among the retired we

want to reduce the age variation because it is unlikely that people can remember something like a reduction in spending at retirement many years after retirement. With little to guide us, we limit the age range of the not-retired to 50 to 70 and of the retired to 55 to 80. As shown in Table 3 these selections and age restrictions have made little difference in our main finding: somewhat over 2/3 of the not-retired in our restricted sample anticipate a reduction in spending at retirement and about 52% of the retired experience a reduction at retirement.

The CAMS respondents were asked about the categories of spending they anticipated changing at retirement or had changed at retirement.<sup>5</sup> Table 4 shows the percentage distribution as to whether spending would decrease, stay the same or increase. For example, 65.2% of those not retired anticipated decreasing spending on clothing, 32.8% anticipated no change and 1.9% anticipated an increase. The distribution among those already retired is almost the same. Overall there is considerable similarity in the percentages that anticipate a decline in each spending category and the percentages that experienced a decline.

In some of the spending categories there is substantial heterogeneity. For example, 38.5% anticipate a reduction in spending for trips, travel and vacations, yet 29.0% anticipate an increase in such spending. Particularly after retirement there is an increase in heterogeneity, and it is due to an increase in the percentage that increased spending after retirement. Thus, in spending on the home, on automobiles or on food away from home, the percentage of the retired that had an increase in spending was 10-12% greater than the percentage that anticipate an increase in spending. This difference is consistent with our overall finding that spending was higher in realization than in anticipation.

In the rest of this paper we will base our analyses on the responses to 38b and 38e, which give the percentage change in spending at retirement. We have done parallel analyses of whether respondents anticipated or realized a decline in spending and the results are similar to those based on 38b and 38e. We prefer to analyze the percent change in spending because it is a scalar at the individual level rather than just an indicator of increase, decrease or stay the same. Table 5 gives our main result: Among not-retired singles the average anticipated decline in spending is about 20% compared with an average realized decline of about 17%. Among couples the averages are about 20% and 12%. These reductions are similar to those reported in Bernheim, Skinner and Weinberg: They estimate a mean reduction of 14% and a median reduction of 12%.

A possible objection to our comparing anticipated spending change to realized spending change is that our comparison is cross-section: we are comparing the anticipations and experiences of different people. Perhaps selection into retirement is associated with an unanticipated decline in spending as in Bernheim, Skinner and Weinberg, and had the retired been asked about anticipations when they were still working they would not have anticipated a decline. For example suppose the entire population prior to any retirement had a distribution of expectations centered at no change in spending. When we observe the population those who anticipated an increase in spending had retired because of that favorable anticipation. However, at retirement they were surprised to find their resources were less than anticipated and so they were forced to reduce spending. Because of the selection the not-retired anticipate a decline in spending. The selection would produce the pattern in our data, but the correct interpretation would be that of Bernheim, Skinner and Weinberg.

We address this issue by studying the age-pattern of responses. At younger ages in the HRS there has been little if any selection: the population has not yet begun to retire. At older ages in the

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<sup>5</sup> During the design stage of CAMS these categories were developed from focus group responses.

HRS almost the entire population has retired. Figure 3 shows the fraction of the not-retired that anticipates a reduction in spending at retirement as a function of age and Figure 4 shows the fraction of the retired that experienced a reduction in spending. If anything the figures show that anticipations and realizations of a decline in spending fall with age. This pattern is not consistent with the selection mechanism, which requires that the fraction anticipating a decline is zero before retirement begins and then increases as the more optimistic select into retirement. The fraction that experienced a decline should be flat with age in the extreme case of no correlation between anticipations and realizations; in the more realistic case where there is some validity to the anticipations, the fraction experiencing a decline will increase with age.

The pattern in the figures is consistent with the empirical fact that some early retirement is associated with stochastic events such as a health shock that cause both retirement and an unexpected reduction in lifetime resources. At age 50 the entire population has some risk of such a shock, but with each passing year the risk of the shock happening before planned retirement decreases, so anticipations of a decline in spending at retirement decrease. Early retirees are likely to have retired because of a shock and to have experienced a decline in spending. At later ages more have retired as planned.

To bring out the patterns more clearly and to account for differing number of observations at each single year of age, we fit the percent change in spending at retirement to age, and separately to the expected retirement age in the case of the not-retired and to the retirement age in the case of the retired.<sup>6</sup> Figure 5 shows the fitted values from these estimations, evaluated at age 63. Whether fitted to age or to years before or since retirement, the pattern is the same. At age 50 or 13 years before retirement workers anticipate a 23-24% reduction in spending at retirement. This figure decreases until at age 63 or at retirement the reduction is 16.7% to 17.7%. At age 63 or immediately following retirement the realized reduction is 14.4% to 15.9%, and the realized reduction declines somewhat with increasing age. Thus the unanticipated change at retirement estimated from the age trends is about two percentage points of spending, but the change is to higher spending, not lower as in Bernheim, Skinner and Weinberg. The figure shows that the rather large difference between average anticipations and realizations as in Table 3 is due to the differences in the ages of the not-retired and retired populations. Once age has been taken into account there is almost no difference.

Table 6 shows the average percentage change in spending either anticipated or realized classified by some household or personal characteristics as measured in HRS 2000. It is important to note that all of the classification variables except education pertain to the year 2000. Even though economic status is rather stable after retirement, some households would have been classified differently at the time of retirement.

With the exception of the lowest wealth quartile the pattern of anticipated reductions is the same as the pattern of realized reductions: those in the highest quartile anticipated or realized the smallest reduction while those in the lower quartiles anticipated or realized the greatest. This pattern suggests that the well-to-do to purchase consumption items after retirement rather than engaging in home production.

There is little discernable pattern in anticipations across income quartiles, but actual reductions are clearly greatest among those in the bottom quartiles.

The variation by self-rated health is consistent with the theoretical discussion about health risk: those in worse health predict a large drop in spending at retirement. Those in worse health

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<sup>6</sup> These data were taken from the HRS core instrument

have a greater risk of a health event that precipitates an early and partially unanticipated retirement with its corresponding loss of lifetime resources. The variation among the retired exhibits a substantially greater gradient, which is consistent with the idea that those in worse health have had a health shock which led to earlier than expected retirement. As far as levels are concerned, even workers in excellent health have some chance of a health event and so on average predicted a decline of 18% in spending. Those who maintained excellent health and, therefore, probably retired as anticipated experienced a much smaller decline in spending. Among those in worse health the differences between anticipations and realizations is small. Of course, because of downward transitions in health the comparison is inexact: For example, 11.4% of workers classify their health as fair or poor whereas 22.4% of the retired classify their health as fair or poor. Some of the retired whose health is fair or poor have had a health shock, and so their *ex ante* prediction would have been like the predictions of those workers in better health.

There is no obvious pattern either in anticipated declines in spending or in realized declines as a function of education class.

Even in October, 2001, the stock market was considerably above what historical trend would suggest. In the context of a life-cycle model with no adjustment costs, changes in the stock market should not be correlated with changes in spending at retirement: spending before retirement would already have taken into account any windfall gains so that spending at retirement would just be a continuation of the higher level. Similarly, realizations in spending following retirement should not be correlated unless by chance the stock market happened to boom at about the same time as retirement. We see little difference in anticipations as a function of stock ownership, but considerable difference in realizations. However, retirement took place in the 1990s and the 1980s, so most retirement would not have happened during boom times. Furthermore, as shown in Figure 5 we did not find any trend in spending change as a function of age as would be expected were the recent retirees influenced by the recent stock market gains. The probable explanation is that stock owners have much greater wealth than those who do not own, and the variation by ownership status is a reflection of the gradient by wealth status.

Table 7 shows the estimated regression of the percentage change in spending at retirement either anticipated or realized. Just as in the cross-tabulations of Table 6 those in the highest wealth category both anticipate and realized the smallest decline and those in the lowest income category had the greatest decline. A difference from the cross-tabulations is that the lowest education category is associated with anticipated and realized declines that are about 9.7% and 3.6% respectively less than the reference education level (high school). Stock ownership is associated with a smaller decline in spending but the effect is not significant.

Those in excellent health anticipate much less of a decline in spending than those in poor health. We find the same general pattern for realizations but the effects are smaller. If the spouse is in poor health the decline in spending was 10.4% greater than if the spouse was in good health.

We conclude that the broad generalizations shown in the cross-tabulations hold in these regressions with several exceptions. The ownership of stock has little predictive power for spending changes, so that the correlation between ownership and spending change in the cross-tabulations is due the relationship between ownership and wealth. Those lacking a high school education both anticipate and realized a smaller decline in spending than those in other education categories. An explanation is that even before retirement they are already engaged in home production.

Both the cross-tabulations and the regression suggest an important role for health, but, the relationship is only suggestive especially among the retired because current health may have only a

weak relationship with health at retirement. We use a question about health at retirement to address this issue. Those retired or partially retired were asked about the reasons for their retirement. We use data from various waves of the HRS core to classify whether health was an important reason for retirement. As shown in Table 8, 21.9% of the retired say that health was a very important reason for retirement and 67.6% say that it was not important at all. Among the first group, 67.5% say that spending declined with retirement, and that the average change in spending was 24.5%.<sup>7</sup> Among the second group 48.4% said that spending declined with retirement and that the average decline was 11.4%.

These differences are consistent with the view that some retirement is associated with a health event, which causes earlier-than-expected retirement and an accompanying reduction in spending. It is, of course, possible that the health of those who said health was a very important reason for retirement always had bad health and always anticipated retiring early, but studies of actual retirement show that health shocks can trigger retirement (McClellan, 1998). A definitive resolution would require a detailed study of the dynamics of health and retirement, which is beyond the scope of this paper.

The HRS asks about subjective indicators of well-being before and after retirement. We first analyze whether the respondent is worried about having enough income to get by in retirement, which relates to the adequacy of economic resources. If resources are a surprise at retirement we would expect naïve self-satisfaction prior to retirement and a shift to less satisfaction after retirement. In fact, among those not yet retired 39% agreed “a lot” that they are worried about income whereas among the retired just 26% agreed “a lot.” The comparison is similar at other points along the “worry distribution” with the pre-retired more worried than the already retired.

The not-retired who anticipate a decline in spending are more likely to be worried about retirement income. For example, 42% are worried a lot compared with 39% overall. However, the difference is only a few percentage points. Among the retired, those who had a decline in spending tend to be more worried about retirement income, but they are less worried than the not-retired.

As far as the average percent decline is concerned, among those who are not retired and who are worried a lot the anticipated decline is 22%. Even those who are not at all worried about their resources anticipate a decline of 15%. Among the retired the pattern is similar but the gradient is larger. Those who are worried a lot experienced a decline of 23% whereas those not worried at all had a decline of 9%. As with health or income the realizations produce greater variation in the decline in spending than the anticipations. Being worried about the adequacy of retirement income is related to having low levels of income and wealth (not shown), but there is no evidence that the inadequacy is a surprise.

The HRS asks the retired to assess the quality of their retirement years relative to the years just before retirement. If the retired experienced a negative shock about their retirement resources we would expect the comparison to be unfavorable. However, as shown in Table 9 about half say their retirement years are better and just 15% say their retirement years are worse. We recognize the question is somewhat deficient: retirees could have higher utility than pre-retirees because they have more leisure, even though their spending fell unexpectedly at retirement. Lifetime utility maximization requires that the marginal utility of spending be smooth across retirement, not that utility itself be smooth. Nonetheless, this comparison of utility levels does not suggest widespread distress or unhappiness at events following retirement. Among those who said their consumption

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<sup>7</sup> Average over all, not just those who reported a spending decline.

dropped at retirement the distribution is similar. However, among the 15% who say that retirement is not as good as pre-retirement spending decline by about 25%. We interpret this to be evidence of economic distress.

### **Time use before and after retirement**

In section A of CAMS, the respondent was asked about his or her use of time. Many of these categories of time use would neither be complements nor substitutes with market purchased goods. For example, “walking,” or “watching TV” would seem to interact very little with market purchased inputs. We chose seven activities as shown in Table 10 that might be substitutes for market purchased goods or services and one that might be a complement.<sup>8</sup> Because time use changes rather sharply with age we have limited our analysis to narrow age bands.<sup>9</sup> The table compares hours spent per week among those 60-64 classified by retirement status and by sex. Thus, not-retired men spent 2.8 hours per week on house cleaning while retired men spent 3.2 hours per week. Women spent much more time on house cleaning and the difference between the not-retired and the retired is greater. For men the not-retired spent about 14.4 hours per week on the possible substitutes and the retired spent about 19.6 hours.

The reported hours of work show a drop of about 29.5 hours for men and 27.9 for women.

Table 11 summarizes these hours differences by retirement status for the age bands 60-64 and 65-69. For men, time spent on the possible substitutes increased by 5.2 and 9.4 hours per week. For women the increases were much smaller. The last line of the table gives a rough guess of the dollar savings in market purchases when we evaluate an hour at \$10. We emphasize that this valuation is merely to gain some sense of whether the time amounts are approximately large enough to explain the anticipated and actual change in spending. If we add the possible dollar savings for men and women and compare them with total household spending in the relevant age bands as found in the CEX, we calculate that the saving due to reduced market purchases is 13.0% for 60-64 year-olds and 16.6% for 65-69 year-olds. We conclude that the time spent on possible substitutes is large enough that in principle it could explain a large part of the observed drop in spending at retirement. Of course, work-related expenses could also account for 5-10% of the decline in spending.

### **Conclusions**

Our results indicate that resources at retirement come as no surprise to most people. In fact the average anticipated decline in consumption is larger than the average realized decline in consumption. If anything households seem to be pleasantly surprised by their level of resources in that people are more worried ex ante than ex post about the adequacy of retirement income. For a fraction of the population, there may be a surprise, but most likely any surprises are associated with

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<sup>8</sup> Section A of CAMS has 31 categories of time use, but they were not chosen for an analysis of home production, which is the reason they are so lacking in complements.

<sup>9</sup> The sample has the additional restriction that the same person answered parts A and B of CAMS. We imposed this restriction because we wanted to observe the concurrent change in hours and spending, which could not be assured if different persons answered A and B. This selection reduced the sample by 77 observations out of 1294 (both age bands combined).

stochastic events, particularly health that leads to early withdrawal from the labor force. However, these speculations will require confirmation in panel data.

**Table 1: Evidence from Raw Data, not weighted responses**  
**Lead-in question B38: “Are you retired”**

	Retirement Status			Total
	Retired	Not retired	Missing	
Number	2459	1119	235	3813
Percent	64.5	29.4	6.2	100.0

**Table 2: Evidence from Raw Data,**  
**Anticipated and Realized Changes in Spending at Retirement,**  
**weighted responses**

Work Status	N	Percentage distribution			Total
		decrease	same	increase	
Not retired	1069	68.9	26.6	4.4	100.0
Retired	2384	52.0	36.3	11.8	100.0
All	3453	58.5	32.6	8.9	100.0

**Table 3: Anticipated and Realized Changes in Spending at Retirement**  
**in the Analytical Sample, weighted responses**

Work Status	N	Percentage distribution			Total
		decrease	same	increase	
Not retired	1119	53.1	35.5	11.5	100.0
Retired	2449	70.2	26.2	3.6	100.0
All	3568	60.1	31.7	8.2	100.0

**Table 4: Percentage Change in Spending at Retirement in the**  
**Analytical Sample, weighted responses**

		Not Retired	Retired
Single	N= 987.8	-19.9	-16.8
Married	N=1412.5	-20.3	-11.6

**Table 5: Change in Spending by Category, weighted responses**

		Not Retired	Retired
Trips, travel, or vacation	Decrease	38.5	44.7
	Same	32.5	30.4
	Increase	29.0	24.9
Clothing	Decrease	65.2	60.5
	Same	32.8	32.9
	Increase	1.9	6.6
Eating out / food and beverages	Decrease	52.5	40.4
	Same	38.6	36.3
	Increase	8.8	23.3
New home, home repairs, or household items	Decrease	53.2	37.1
	Same	39.4	45.5
	Increase	7.4	17.4
Entertainment, sports, and hobbies	Decrease	46.4	44.4
	Same	40.4	45.0
	Increase	13.2	10.6
Automobile expenses	Decrease	45.1	29.4
	Same	47.3	51.0
	Increase	7.6	19.6

**Table 6: Percentage Change in Spending at Retirement, weighted**

	<b>Expected Change among the Not Retired</b>	<b>Realized Change among the Retired</b>
<b>Wealth Quartiles</b>		
lowest	-19.5	-21.8
second	-22.9	-16.7
third	-21.6	-13.1
highest	-17.0	- 6.7
<b>Income Quartiles</b>		
lowest	-17.6	-21.2
second	-19.7	-16.0
third	-22.1	-12.8
highest	-20.3	- 8.0
<b>Education</b>		
Less than high school	-10.8	-15.5
High school graduate	-21.9	-14.9
Some college	-22.8	-15.9
College or more	-19.0	-8.0
<b>Stock Ownership</b>		
Owners	-19.1	- 8.7
Not owners	-20.8	-17.0
<b>Self-Rated Health</b>		
Excellent	-18.3	-9.0
Very good	-19.7	-11.7
Good	-21.3	-13.0
Fair	-22.8	-19.1
Poor	-21.4	-26.1

Number of observations: Not retired: 786-789; Retired: 1613-1617.

Singles and Couples.

Wealth and income quartiles calculated by marital status and retirement status.

**Table 7: OLS Regression: Percentage Change in Spending with Retirement**

Variable		Not retired		Retired	
		Coefficient	P-value	Coefficient	P-value
First	Wealth Quartile	1.454	0.536	-3.491	0.057
Second	Wealth Quartile	-1.773	0.403	-2.354	0.153
Fourth	Wealth Quartile	4.546	0.038	3.813	0.023
First	Income Quartile	3.654	0.128	-5.654	0.002
Second	Income Quartile	2.475	0.238	-2.147	0.189
Fourth	Income Quartile	-1.060	0.624	3.663	0.025
Respondent's Education					
	Less than HS	9.708	0.000	3.608	0.027
	Some college	-1.529	0.430	-3.406	0.025
	College +	1.960	0.355	-0.582	0.736
	Own stock in 2000	1.630	0.367	2.249	0.116
	Respondent: Work for pay	0.192	0.947	-4.769	0.004
Respondent's Health					
	Excellent	2.736	0.206	-0.828	0.662
	Very Good	1.061	0.562	-0.161	0.910
	Fair	-3.226	0.263	-4.100	0.019
	Poor	-8.515	0.092	-3.602	0.176
Health of spouse/partner					
	Excellent	1.392	0.620	-3.089	0.221
	Very Good	2.641	0.270	-3.680	0.049
	Fair	-0.003	0.999	-1.889	0.394
	Poor	1.162	0.813	-10.400	0.002

Regression conditioned on additional covariates including age, indicator variables for work status from section C of CAMS, missing handles.

**Table 8: Importance of Poor Health as a Reason for Retirement, weighted responses**

“I am going to read you a list of reasons why some people retire. Please tell me whether, for you, these were very important reasons for retirement, moderately important, somewhat important, or not important at all.

Importance of Poor Health for retirement	All N= 1212	Fraction (%) experienced decline N=	Average %-change ”By how much?” N=
Very important	21.9	67.5	-24.5
Moderately important	5.9	65.8	-15.5
Somewhat important	4.7	60.9	-13.7
Not important at all	67.6	48.4	-11.4
All	100.0	54.2	-14.5

**Table 9: Worried about Retirement Income, weighted responses**

“Worried about not having enough income to get by.”

Worried about Retirement Income	Not Retired			Retired		
	Distribution	Percent who anticipate a decline	Average anticipated decline [%]	Distribution	Percent who experienced a decline	Average experienced decline [%]
A lot	38.3	73.8	-22.5	23.9	65.4	-23.1
Some	28.7	72.2	-20.0	21.8	58.7	-16.3
A little	11.7	68.6	-20.9	12.3	52.1	-11.8
Not at all	21.3	63.9	-16.5	42.0	43.9	- 9.5
All	100.0	70.6	-20.2	100.0	53.3	-14.4

**Table 10: Self-assessment of retirement years, weighted responses**

Comparison of retirement years to years just before retirement:

“Would you say that the retirement years have been ...  
- Better - About the same or - Not as good?”

Comparison of retirement years	Distribution N=1331	Percent who experienced a decline N=703	Average experienced decline [%] N=1098
Better	53.1	49.0	-11.4
Same	32.2	53.5	-11.7
Not as good	14.7	67.7	-25.7
All	100.0	53.2	-13.5

**Table 11: Importance of home production: Evidence from Time-Use Data for Respondents aged 60-64, weighted responses**

N	Hours per week			
	Males 60-64		Females 60-64	
	Not retired 88-90	Retired 176-179	Not retired 153-155	Retired 250-255
Possible substitutes				
House cleaning	2.88	3.16	5.80	7.25
Washing/ironing	1.03	1.14	3.56	3.91
Yard work/gardening	2.10	4.07	1.48	2.10
Shopping	3.16	3.41	3.86	4.74
Meal preparation	3.46	4.51	7.42	9.34
Money management	0.78	0.84	0.89	0.86
Home improvements	0.88	2.32	0.75	0.74
Total	14.29	19.45	23.76	28.94
Possible complement				
Concerts/movies	0.72	0.32	0.27	0.25
Work for pay	34.62	5.65	31.73	1.73

**Table 12: Importance of home production: Evidence from Time-Use Data for Respondents aged 65-69, weighted responses**

N	Hours per week			
	Males 65-69		Females 65-69	
	Not retired	Retired	Not retired	Retired
Possible substitutes				
House cleaning	1.78	3.21	5.39	6.90
Washing/ironing	1.05	0.92	3.40	3.30
Yard work/gardening	2.05	4.97	2.26	2.26
Shopping	1.97	3.96	4.52	4.28
Meal preparation	3.11	4.57	9.17	8.57
Money management	0.80	1.09	0.90	0.97
Home improvements	0.67	1.91	0.51	0.76
Total	11.43	20.63	26.15	27.04
Possible complement				
Concerts/movies	0.20	0.43	0.25	0.33
Work for pay	33.87	3.83	26.80	2.56

**Table 13: Change in hours per week associated with retirement, weighted responses**

	Males		Females	
	60-64	65-69	60-64	65-69
Substitutes	5.16	9.20	5.18	0.89
Complement	-0.40	0.23	-0.02	0.08
Work for pay	-28.97	-30.04	-30.00	-24.24
Possible dollar saving	2,683	4,784	2,694	463

Note:

“dollar saving” (annual) from evaluating substitute hours at \$10 per hour.

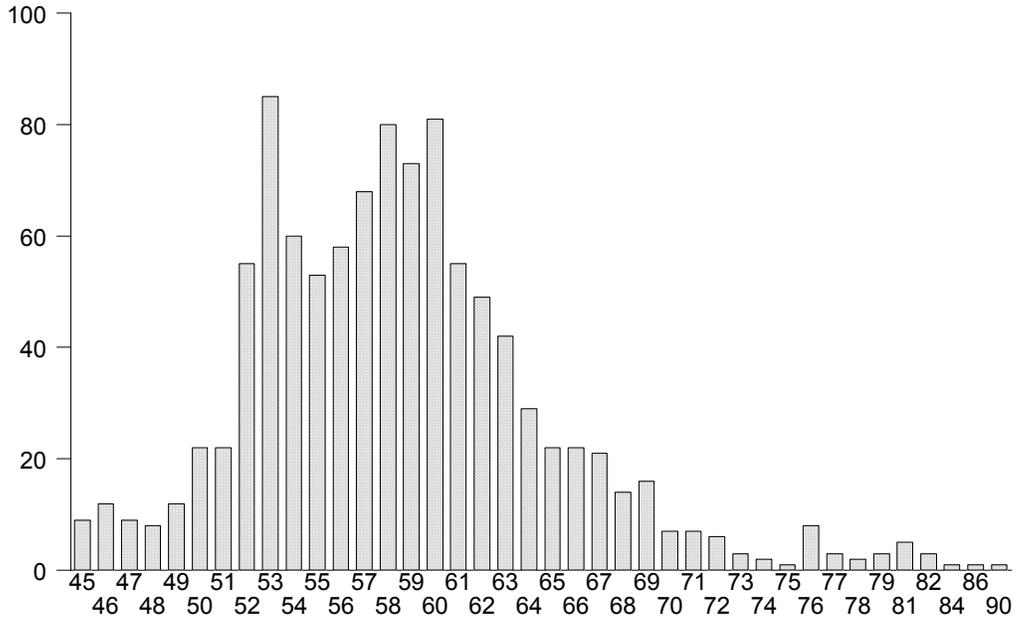
Total household spending for this age group from CEX: about \$35,000.

Adding males & females as approximation for household saving from home production:

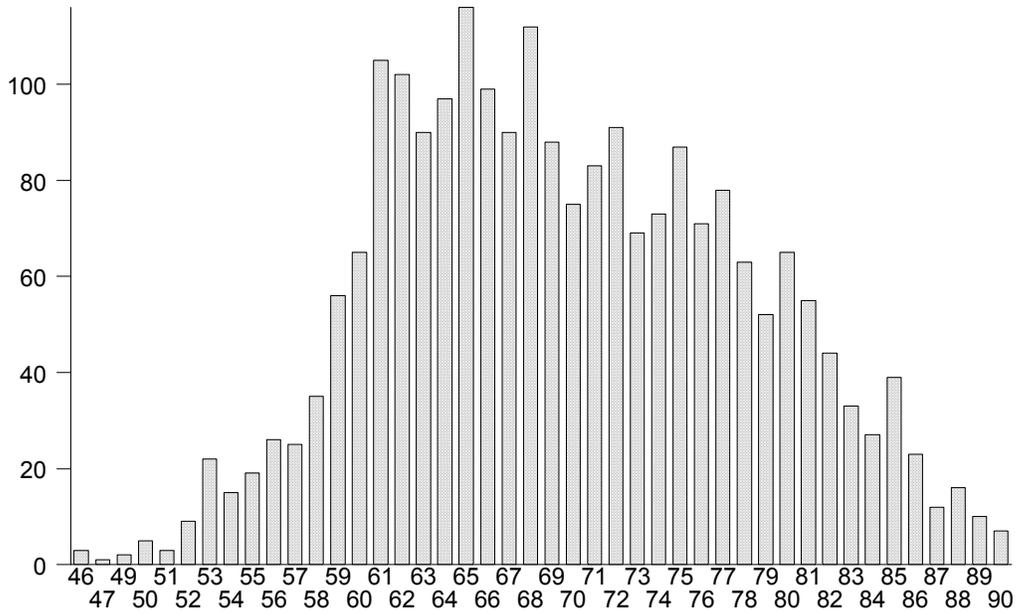
15.4 % for 60-64 year-olds

15.0 % for 65-69 year-olds

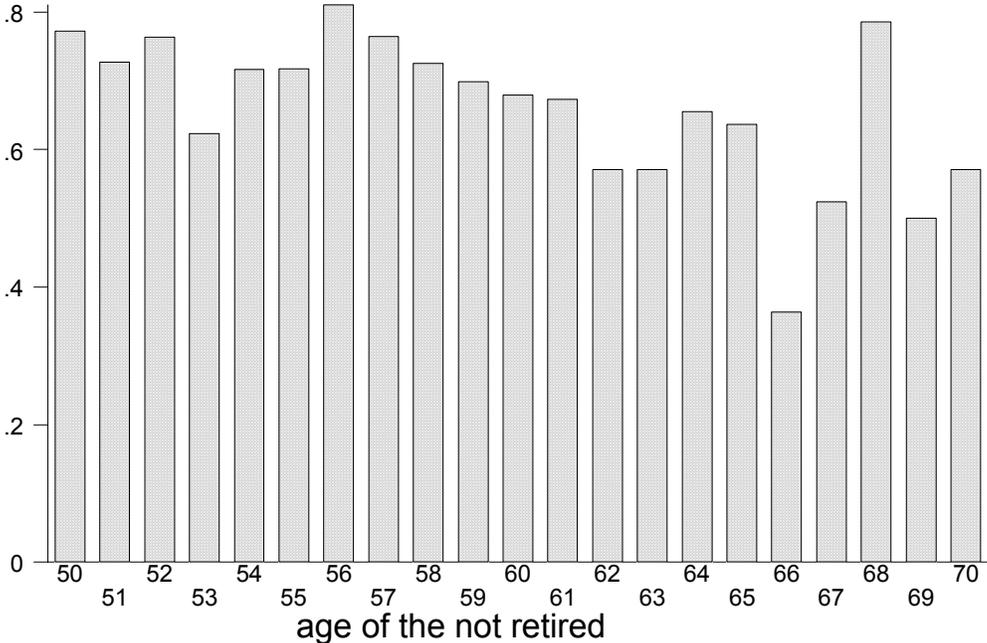
**Figure 1: Age distribution of Not Retired Respondents to B38 and B38d**



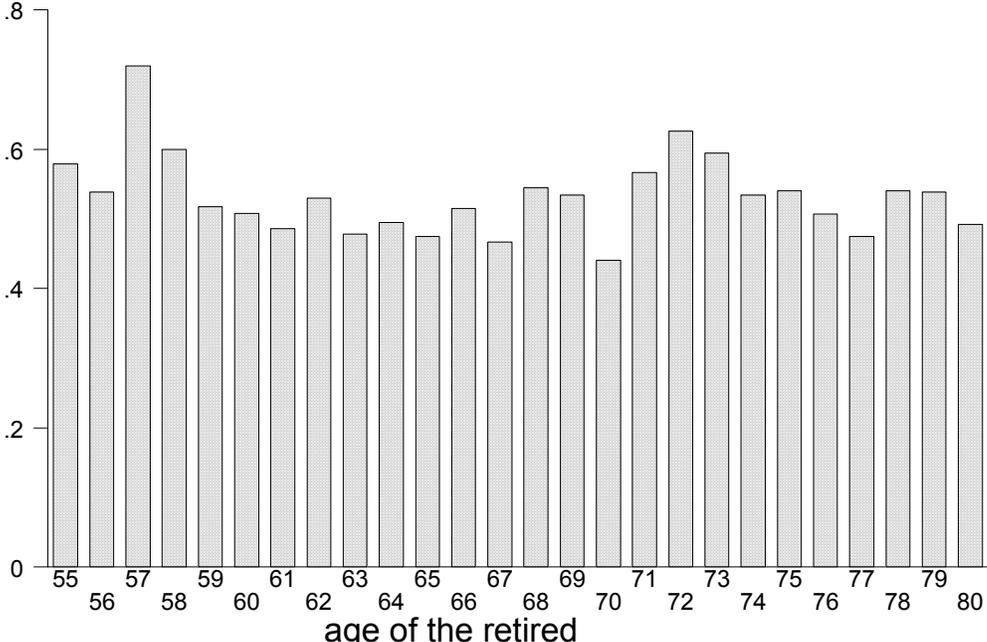
**Figure 2: Age distribution of Retired Respondents to B38 and B38a**



**Figure 3: Fraction of Not Retired Respondents Anticipating a Decline in Spending**

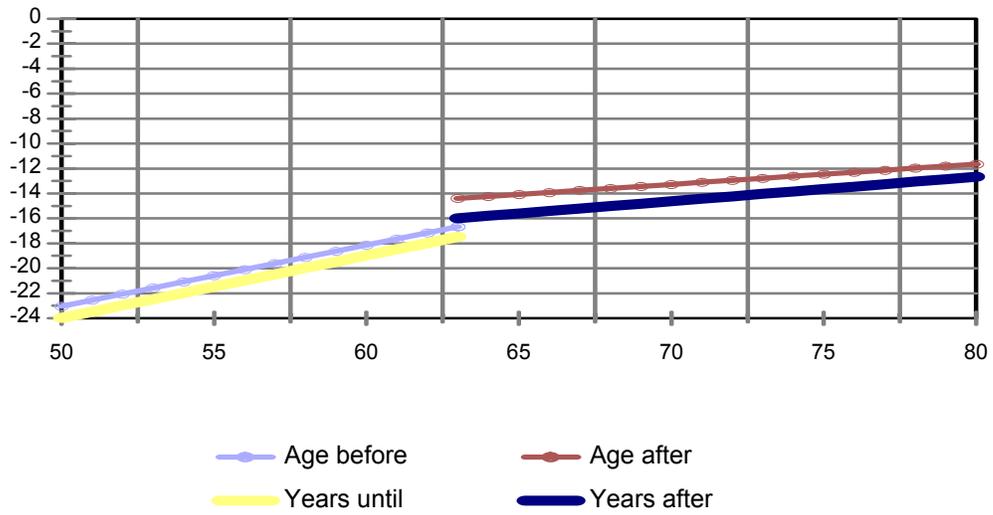


**Figure 4: Fraction of Retired Respondents Who Realized a Decline in Spending**



**Figure 5**

Spending change at retirement (%)



## Appendix

### How did respondents answer the question “Are you retired? YES/NO.”

B38 – Are you retired? Yes/No.

The answer to this question informs us on which side of the retirement date the respondent is – before or after.

There will be cases where it may unclear for the respondent how to classify him or herself in one of these somewhat restrictive two categories. For example, it is not clear how a person who has been a homemaker all his or her life would answer this question.

Therefore, we incorporate available information on labor force status from CAMS section C and from the HRS 2000 core survey.

	B38 – Are you retired?			Total 3402
	NO 1055	YES 2280	missing 67	
<b>CAMS section C:</b>				
<b>Current Labor Force Status</b>				
Working now	850	159	14	1023
Temporarily laid off	20	5	0	25
Unempl.& looking for work	28	17	1	46
Disabled	43	321	12	376
Retired	34	1779	37	1850
Homemaker	100	428	15	543
Other	1	1	0	2
Part time, less than part time empl.	15	16	1	32
Volunteer, care giving, babysitting	4	5	0	9
no information from CAMS	3	11	1	15
<b>HRS 2000 core data:</b>				
<b>Consider oneself retired:</b>				3402
not retired	846	198	11	1055
completely retired	35	1264	25	1324
partly retired	93	268	13	374
question irrelevant	73	539	18	630
missing	8	11	0	19
<b>Working for pay:</b>				3402
no	154	1868	49	2071
yes	899	412	18	1329
missing	2	0	0	2