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Is There a Retirement Consumption Puzzle in Italy? *

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Abstract

We investigate the way consumption patterns change at retirement using Italian micro data covering thel 985-96 period. We find that age patterns are similar to those found in the US and other developed countries, despite the much more wide-spread cohabitation of different generations. We illustrate how consumption of different goods varies with age and retirement: consumption of work-related goods falls around retirement age and homep roduction of food and other goods increases. We instead find no evidence of abrupt falls in total non-durable consumption at retirement.

*We are grateful for helpful discussions with Orazio Attanasio, Tullio Jappelli, Costas Meghir and Luigi Pistaferri, and for comments madeb y Rob Alessie. Theu sual disclaimer applies. Some early results along the lines of this paper are presented in Miniaci, Monfardini and Weber (2001).

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1 Introduction

In most developed countries, consumption accounts for over two-thirds of GDP. In these countries a rising fraction of the population is past retirement age. The way consumers respond to retirement and the way they spend in their old age is thus a topic ofg reat interest in the analysis ofa ggregate economic fluctuations and in the economic policy debate.

The standard model to analyse the consumption-saving choice by the household sector has been Modigliani's life cycle model, that emphasises the retirement motivef or saving. The model has been extended to cover uncertainty and precautionary saving, leisure choice and a bequest motive (Deaton, 1992, Browning and Lusardi,1 996),b ut its key prediction can still be described as follows : consumers form intertemporal plans aimed at smoothing their standard of living (or marginal utility ofw ealth) over their life-cycle.

In the literature two stylized facts have drawn much attention:

- The elderly appeart o cumulate non-pension wealth: their discretionary saving is positive and quite often increasing with age. This appears to be true in several developed countries including the US, the UK and Italy (for a recent overview on thiss ee Börsch-Supan, 2001) and has been labeled the saving puzzle;

- There is a one-off drop in consumption at the time of retirement that cannot be fully explained in terms of life-time optimizing behavior, that is well documented for the UK (Banks, Blundell and Tanner, 1998) and for the US (Bernheim, Skinner and Weinberg, 2001) and is known as the retirement consumption puzzle.

These stylized facts call for further investigation using detailed consumption survey data covering long time periods and large cross sections of households. We show the results of such investigation using a new data source: the Italian Survey of Family Budgets (SFB),r ecently made available in a consistent format for the 1985-1996 period.

In this paper we document what happens in our data to total expenditure and to non-durable expenditure in old age. We address the issue of whether consumption levels in old age are lower than in middle age because of reduced family size (demographics), lower life-time resources (cohort effects), reduced spending ability or because of increased uncertainty over future needs. Of particular interest to us is the relatively little investigated possibility that the elderly may fail to decumulate wealth because they perceive increased health risks - conditional upon survival, health risks probably are an increasing function of age (Palumbo, 1999). Even without direct measures of health risks, some information on their relevance can be inferred by looking at how health spending changes with age. Health-related expenditure includes direct spending on drugs and doctors' visits, co-payments for hospital and other medical treatment, and payments ofw ages and salaries for nurses and domestic help.

We also check whether in our data consumption does indeed drop after retirement quite abruptly as found in previous studies on UK and US data. The reason for this drop is not well understood and could be attributed to a number of causes, including changesi n preferences due to increased non-markett ime, changes in preferences due to ageing, unexpectedly low pension or other returns to savings as well as myopic or perhaps time-inconsistent behavior. Of particular interest in this context is that Italian consumers receive a large lump-sum payment upon retirement (technically, a severance pay worth three times the gross annual salary). Ifc ash considerations matter, we would expect a surge in consumption at retirement rather than a drop.

We identify a number of reasons why expenditure on non-durable goods and services may fall immediately after retirement and investigate their importance in our data:

- Work-related expenditure (transport to and from work,c anteen meals and business clothing) is no longer needed
- Home production of services (laundry, gardening, house-cleaning, cooking) becomes advantageous - on the assumption that the market price of leisure falls at retirement (this is consistent with seniority-related pay, e.g.)
- Retirement may be accompanied by the purchase of durable goods (car, household durables etc.). Given that shopping costs fall after retirement, and that bulky items are complements to each other (fitted kitchens are a good example) it may make sense to invest into durable goods then.

Finally,w e also address the issue of how household formation and dissolution affectsc onsumption age profiles. Household dissolution through death isw ell known to correlate with wealth - this is partly responsible for the apparent positive wealth age gradient in cross section data (Shorrocks, 1975) and may also generate a positive consumption age gradient in old age. Household formation is unlikely to affect the analysis in those countries (notably the UK) where most children leave their parental home when they are 18 years old, but it may induce spurious age patterns if children leave home at different ages according to their parents'spending ability or if aging parents go and live with the children more often when they enter retirement with inadequate means. On household formation, we know that in the UK only 21% of young men aged 25-29 live with their parents (19% in the US), and this percentage falls to 6.5 for men aged 30-34 (8% in the US). In many other countries, however, young adults leave the parental home later, depending on job opportunities and marriage. An extreme example among European countries is Italy: 76% of young men aged 25-29 live with their parents, and so do 32% men in the 30-34 age group.[1] We also know that in a representative sample of the Italian population over a third of

[1] Source: OECD (2000). Calculations based on the Luxembourg Income Study and national census data. Percentages for young women are much lower, ranging between 9.5% in the UK and 50% in Italy for the 25-29 age group (4-19.5% for the 30-34 age group).

households whose head is between 50 and 65 of age includes at least one working child over 18 (see Miniaci and Weber, 1999). Extreme examples of endogenous household dissolution are Japan and Taiwan, where the less well-off among the elderly normally cohabit with their children. When several generations live together the definition of the head of household is not obvious and is a matter of some consequence ifw e are interested in age effects on consumption. We check for the importance of this by exploiting Deaton Paxson's (2000) technique that treats household age as a weighted average ofi ndividual ages.

The paper is organized as follows. In Section 2 we produce graphical evidence on age profiles for total expenditure, non-durable consumption and some items of special interest (such as health expenditure). In Section 3 we present regression evidence on the presence of structural breaks around retirement age when the head is defined as in the survey. In Section 4 we investigate the effects of changing the definition of head and of relating household consumption to all its members' ages. Section 5 concludes.

2 Cohort analysis

A standard way to investigate the dynamic properties of consumption with repeated cross section data is to rely on cohort analysis. Households are grouped into cohorts on the basis of such characteristics as year of birth of the head, education of the head and region of residence. In order for this grouping to make sense we require that these characteristics be time invariant: if this condition is met, cohort data allow us to follow synthetic individuals over time.

In this paper we shall mostly use data from the Italian Survey on Family Budgets (SFB), a large diary-based representative sample of the Italian population covering the 1985-1996 period on a consistent basis. Given the wide regional differences present in Italy, we use a 10-good region-specific price index to deflate all expenditures. However, we don't define cohorts on the basis of region of residence, but only the basis of the year of birth of the head. In the SFB the head is defined as the first-listed person in the municipal registero f households ("Intestatario della scheda famigliare"). [2] We follow standard practice and group households in 5-year bands: the age of the head is the mid-age of the cohort.

In Figure 1 we plot average total expenditure (including purchases of durable goods) for the whole sample. Each data point is labeled by the mid-point of the range ofh ead's years of birth (*yob*) that defines our cohorts (the oldest cohort includes heads born in the interval 1910-14; the youngest cohort includes heads born 1965-69).

The rationale forp lotting cohort age profiles licsi n Modigliani's life cycle theory whereby consumption levels can be written as:

[2] We address in Section 4 the issue of cohabitation.

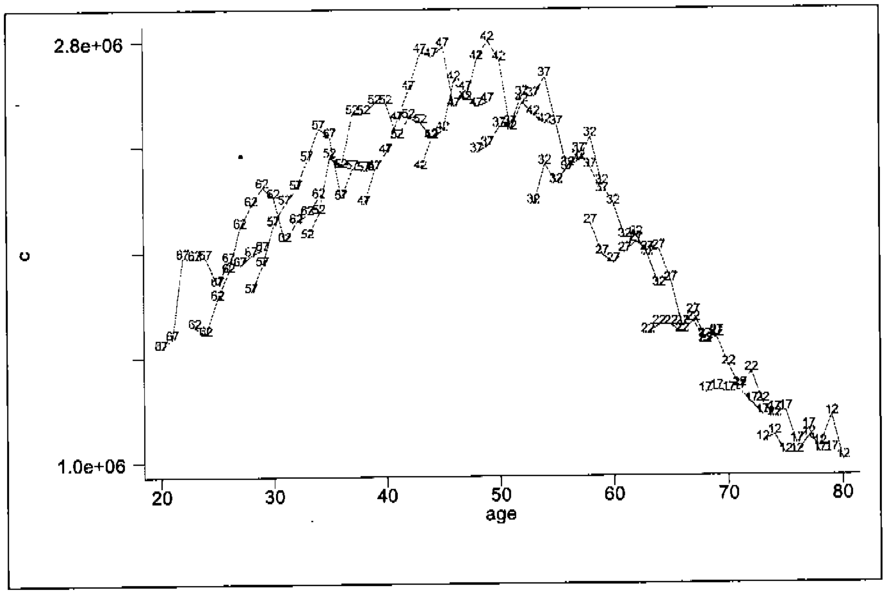

Figure 1: Total expenditure: Cohort profiles for Italy

$$c_{ht} = \sum_{c=1}^{C} \alpha_c \delta_c + f\,(age) + \varepsilon_{ht} \qquad (1)$$

where c is consumption, h denotes the household and t the time period, and households belong to C year of birth (yob) cohorts. The identity $age = yob + t$ makes interpretation hard without furthera ssumptions: in the equation time effectsa re in the errort erm (ε_{ht}) and the assumption isi mplicitly made that all time trends can be attributed to the interaction of age and cohort. [3] The function $f\,(age)$ would be a straight line in the stripped down version of the model (see Deaton, 1992, e.g.) but will be hump-shaped because of uncertainty and age-related changes in demographic composition (Attanasio et al., 1999).

In the absence of time effects, vertical distances between the broken lines in Figure 1 can be interpreted as pure cohort effects - the life-cycle theory of consumption would attribute such cohort effects to differences in life-time resources across generations. We notice that in our case such vertical distances are all positive in the early subsample, butb ecome quite often negative after 1992. The presence of a strong business cycle effect in Italy in the 1990s is well established and has been related to the major reforms in social security, public

[3] See Brugiavini andW eber (2001) for ar eview of the identificationi ssues involved in estimating age profiles in repeated cross-sections data.

health provision and the tax system that were undertaken at the end of 1992 (see Miniaci and Weber, 1999, Attanasio and Brugiavini, 1996, Grant, Miniaci and Weber, 1998).

Cohort effectsa re more noticeable if we look at a similar plotf or the logarithm of total expenditure, as in Figure2 . Thel ogarithmict ransformation is particularly useful in this context if we believe cohort differences are best expressed in proportional terms. Figure 2 reveals that the 1992 business cycle episode was less important for cohorts already past retirement age at the time (statutory retirement was 60 for men and 55 for women in 1992 - it has slowly been raised ever since. The popular early retirement schemes that allowed a full pension to individuals in their fifties also became less generous after 1992).

Perhaps the most striking feature in 2 is the sharp drop of expenditure after age 50. As Brugiavini and Padula (2001) show using a different data source (SHIW),d isposable income also drops after age 50. In their data, this generates a flat age profile for discretionary saving, and therefore an increasing age profile for the (discretionary) saving rate. When a combination of SFB consumption data and SHIW income data is used, there is an even more marked increase in the saving rate with age (see Battistin, Miniaci and Weber, 2000).

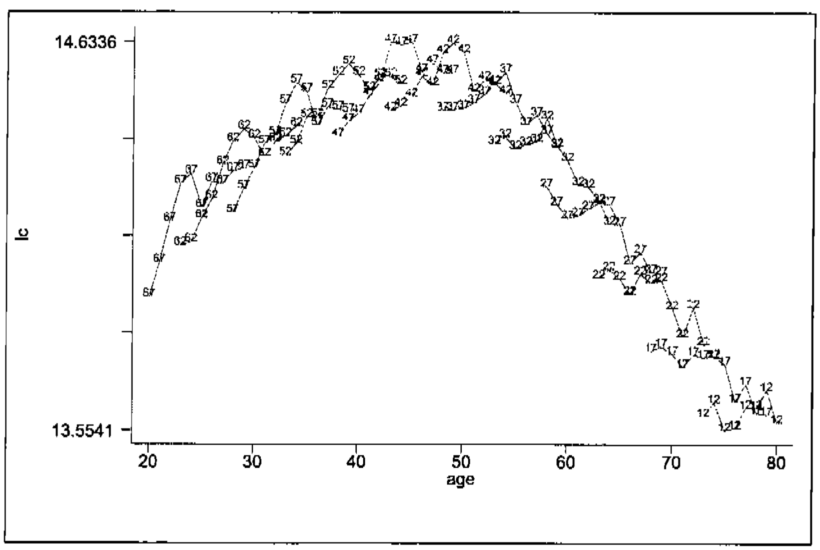

Figure 2: Log(total expenditure): Cohort profiles for Italy

A potential limitation of the profiles shown so far is that they relate to total expenditure rather than consumption. Total expenditure includes purchases of durable goods and excludes consumption of their services. A measure for the latter is hard to compute in micro data (given that we don't observe the stock of durable goods). A measure of the former is however available, and non-durable expenditure can be calculated at the household level. [4] On the assumption of preference separability between durables and non-durables, expenditure on non-durable goods and services is the relevant consumption measure.

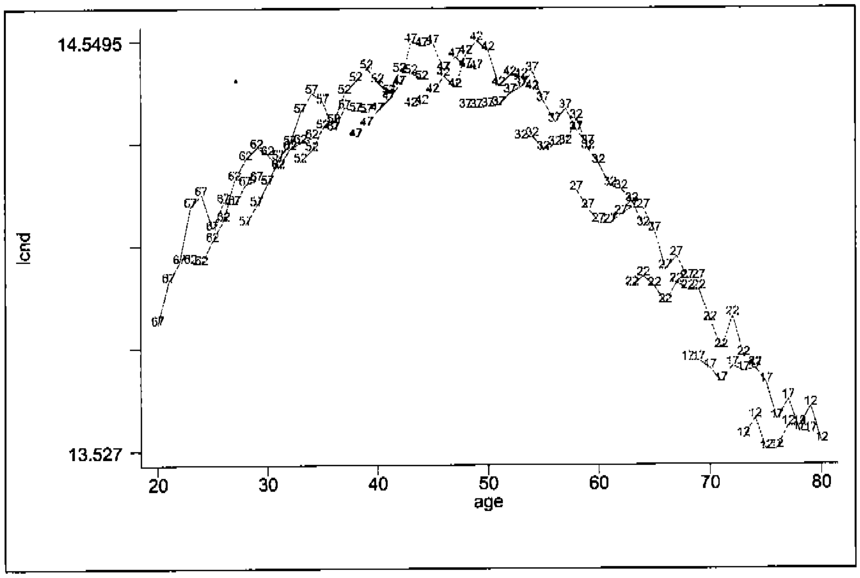

Figure 3: Log(non-durable expenditure): Cohort profiles for Italy

In Figure 3 we plot cohort profiles for non-durable consumption. The most striking feature is that the age profile drops sharply after age 55, in line with similar drops reported in other countries (the retirement puzzle). A further feature worth stressing relates to the age profile for the oldest cohorts: we see in both figures and 2 and 3 that the oldest two cohorts have a flat profile. Ifh ousehold dissolution/death positively relates to life-timer esources, composition effects are likely to be driving these age patterns.

We can compare cohort profiles across countries: for the US we observe similar patterns. In Figure 4 we plot the cohort profile for the logarithm of non-durable expenditure as reported in the 1988-98 diary sample of the Consumer Expenditure Survey. [5]. Here the familiar hump shape of consumption is quite visible, while cohort and time effectsa re not ass trong as in the Italian data. The steep drop in consumption after retirement age is more likely attibutable

[4] In the public use tape of the SFB one needs to make assumptions on the durability of some residuali tems. We exploit information from the 1995 raw data to produce our own estimate of expnditure on non-durable goods and services for all available years. See Monfardini, Miniaci and Weber (2001) for a description.

[5] We are grateful to Erich Battistin for making the data available to us.

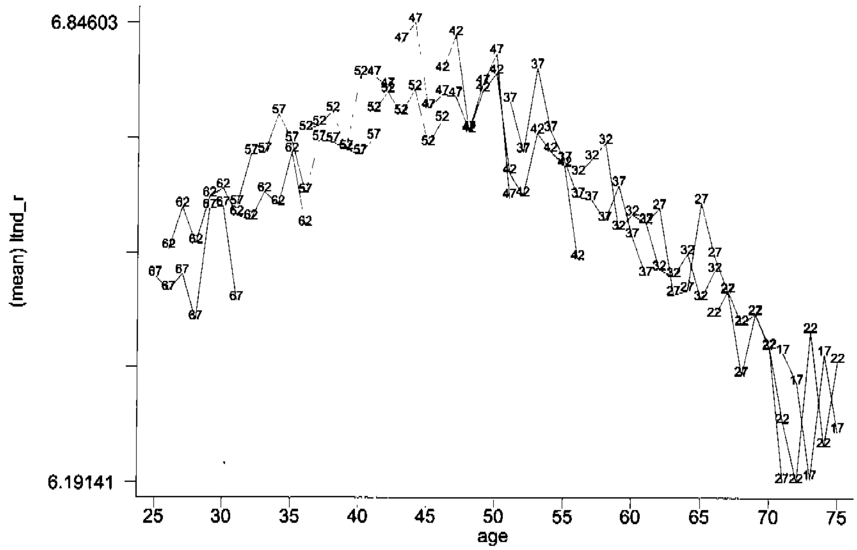

Figure 4: Log(non-durable expenditure): Cohort profiles for the US

to age effects, rather than cohort effects as in Figure 3. The lines after age 70 are very noisy in the US data, possibly because the sample size is much smaller (around 8000 a year in the CEX diary sample as opposed to 32000 in the SFB).

An interesting issue to investigate is whether the patterns highlighted above are explained by family size. In the literature (see Attanasio, 2000) a common correction for family size is often implemented: expenditure is divided by the number of equivalent adults (defined as the number of adults plus half the number of children aged 0-18). This is a very rough equivalence scale, but its simplicity and wide spread use justify adopting it here.

In figures 5 and 6 we show age profiles for per-equivalent adult (per capita for short) expenditure. Figure 5 refers to total expenditure, whereas figure 6 deals with non-durable expenditure only. In both cases we see a decrease of consumption with age: however, total expenditure declines mostly after retirement age, while non-durable expenditure falls steadily overt he whole age range. There are also spikes in expenditurei mmediately after retirement age: it would be interesting to correlate this with severance pay ("liquidazione"), a large lump-sum payment that is typically received a few months after retirement, but the SFB does not record detailed information on income. As usual there are marked business cycle effects, and positive cohort effects for younger cohorts. It is clear that regression analysis will need to control fora ll these effectsi f the relation between age and consumption is to be estimated.

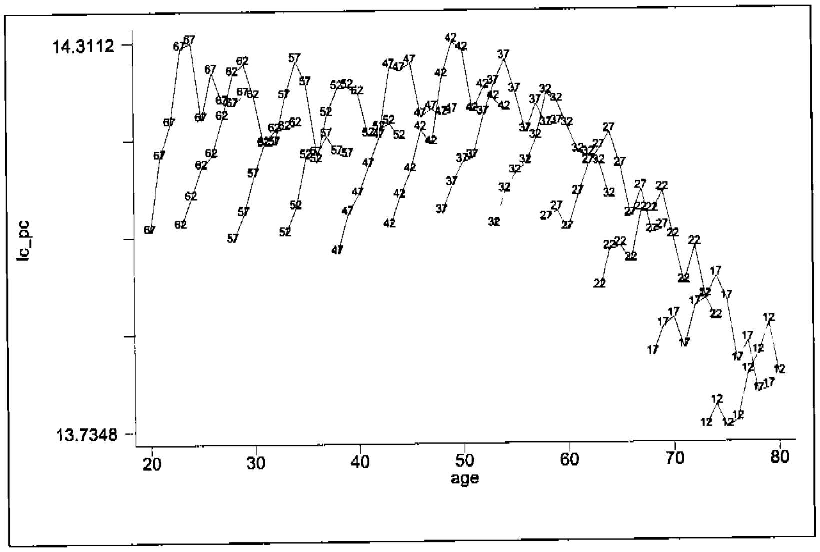

Figure 5: Log(per-capita total expenditure): Cohort Profiles for Italy

A similar picture in per-capita term is shown for the US in Figure 7. Here time and cohort effects are less strong and the age pattern is quite visible: after an almost flat stretch per-capita (i.e.: per equivalent adult) consumption falls steadily after age 55.

The rough equivalence scale adopted so far does not take into account economies of scale in cohabitation (except by giving a reduced weight to children aged 18 or less). As Figure 8 (NE, SE, SW quadrants) shows, cohabitation of grown children with their parents is extremely common in Italy (the presence of elderly parents within their children households is instead less important, at least ifw e look only at the NW quadrant). From now on, we therefore use the Carbonaro equivalence scale, that is widely adopted in poverty studies in Italy (see Inquiry Commission on Poverty, 1997). This scale assigns a unitary weight to a 2-members household, a weight of .599 to a 1-member household, and then weights of 1.335, 1.632, 1.905, 2.150 and 2.401 to households of3 , 4, 5, 6 and 7 or more members, respectively.

Figure 9 shows the per-capita profile when this scale is adopted instead.We notice that now the age profile is almost flat up to age 55 and declines sharply thereafter, in agreement with the US evidence shown in Figure 7.

In order to better understand the consumption behavior of older consumers we now look at cohort profiles by broad commodities. We first plot the cohort profile forf ood, in a very broad definition thati ncludes vices (beverages and tobacco) and meals out: even in this definition food is a necessity and its behavior overt ime and age isa pparently driven by demographic factors(see figure

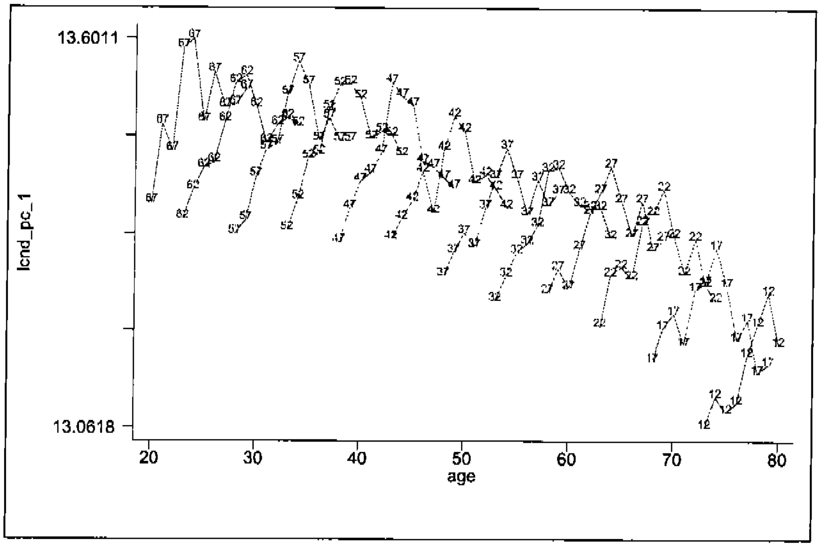

Figure 6: Log(per-capita non-durable expenditure): Cohort profiles for Italy

10). A similar picture can be drawn using a narrow definition (food at home, no vices): even though expenditure on meals out is higher prior to retirement, its impact on total food spending does not affect the overall hump shape of the profile.

Food expenditure is possibly the only commodity where zeros are never observed. For all other commodities zero spending over the recording period is common or at least possible. In some cases (such as clothing) one can argue that zeros are due to infrequency ofp urchase, and that the observed overall average is a good estimate of underlying consumption (Keene, 1989). In other cases, instead, zeros may be due to corner solution (the price is too high, or income is low), to abstention (an important example is tobacco) or to intertemporal optimization (some home goods are typically bought during the sales season; for many households, toys are only purchased at Christmas). In the case of abstention,t he best estimate for consumption is the sample average of non-zeros (i.e., the mean conditional upon participation); in the case of infrequency, the sample average over all households (the unconditionalm ean). In all other cases, neither statistici s likely to convey all then ecessary information to compute average consumption.

For the sake of simplicity and comparability, in this paper we shall only consider unconditional averages. In the case of some goods (those where participation changes a loto ver time and/or according to age) this may provide a blurred picture of the underlying patterns of behaviour. We leave to future research an analysis oft his issue.

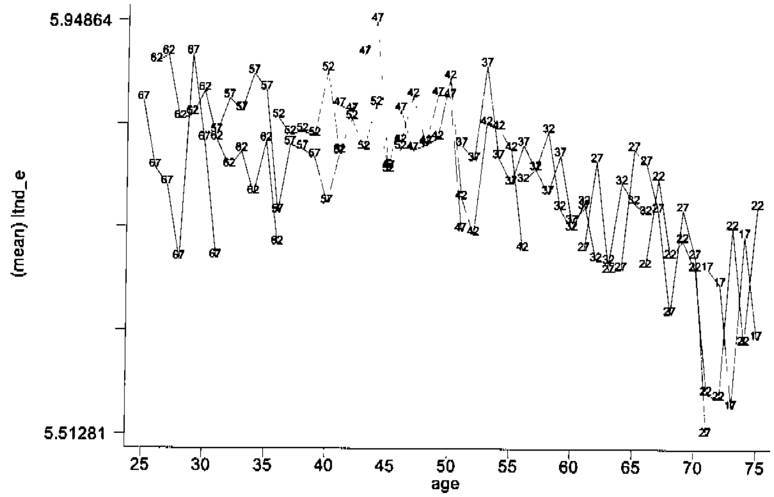

Figure 7: Log(per-capita non-durable expenditure): Cohort profile for US

In Figure 11 we show cohort age profiles for four work-related broad commodities: meals out, clothing, transport (that includes motor fuel) and house (domestic) services. In all cases (non-durable) expenditure is divided by the number of equivalent adults (as defined in the Carbonaro scale). The figure shows clearly that for all but one item expenditure is falling after adjusting for family size (the exception ish ouse services, thati nclude all sortso f cleaning, baby sitting, house sitting and housekeeping services: here expenditure peaks around 40, then falls but rises sharply in old age). Business cycle effects are strong (of opposite sign) for transport and clothing.

Of interest is also the age pattern of spending on health (out-of-pocket expenditure on drugs, doctors and nurses, medical appliances, hospital treatment), fuel (heating fuel and electricity), housing (it includes water, maintenance and repairs; in our definition itd oesn ot include rent and imputed rent) and food at home. For all these items expenditure rises with age up to age 70. After the age of7 0, for health and fuel the age profile remains upward sloping, while for food at home and housing services there is a decline. The pattern prior to age 70 for food at home (combined with the fall in restaurant meals) is in line with the view that consumers substitute into home production after retirement. Health expenditure shows a marked increase over time for all cohorts, possibly as a result of the wide-spread introduction of co-pay in the public health service after 1992. [6] The age pattern ofh ealth spending has attracted much attention

[6] The ratio of total health spending to GDP in Italy was fairly stable in the 8-8.6 range over thel 990s. The ratio of publich ealth spending to GDP fell from 6.5 in 1992 to 5.9 in 1994

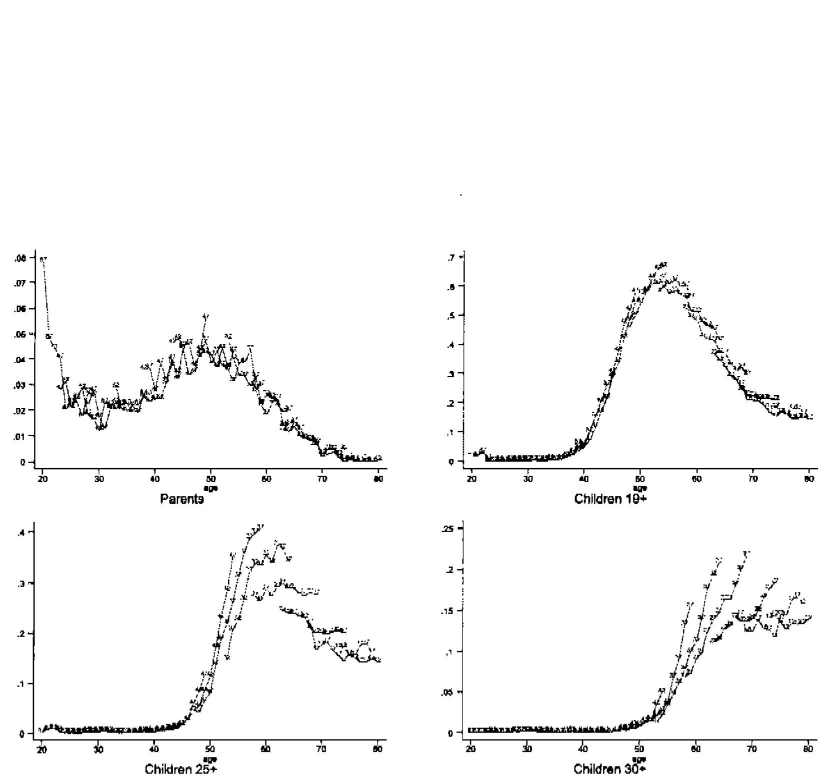

Figure 8: Proportion ofh ouseholds where two generations cohabit

given its relevance for precautionary saving and fore conomic policy: Jappelli and Pistaferri (2000) have recently argued it is only mildly increasing because of wide coverage ofp ublic health insurance in Italy.

In our investigation of consumption patterns a useful variable to define is the share of each broad commodity out of the total budget. To be more precise, we can define the ratio of non-durable spending on the $i-th$ broad commodity to total non-durable expenditure. The share will be an increasing function of the budgeti f the good is a luxury, a negative function if iti s a necessity. In the standard framework where utility iss eparable between durablesa nd non-durables and is time additive in its non-durable part, non-durable expenditure in each period is the relevant budget concept and is proportional to life-time wealth (permanent income). (See Blundell, 1986, Deaton, 1992, or Attanasio, 2000).

We report in Table (1) budget shares (for all households and for those whose head is over 60) and relative price for the goods we consider in our analysis at the beginning (1985) and the end (1996) of the sample period. Here and in the sequel we define the budget ast he sum of all spending on non-durable goods and services, net ofr ent or imputed rent.

To illustrate, the first good (all food+tobacco) is the sum of food at home,

and 5.5 in 1996. The fraction covered by private spending averaged 1.9 ofG DP in the1990-92 period, it then rose to 2.7 of GDP in 1995-98. See Muraro and Rebba (2001).

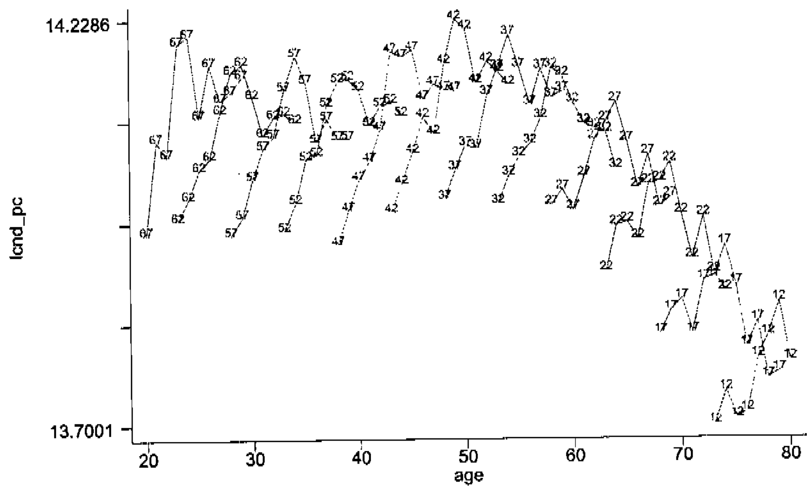

Figure 9: Log(per-capita non-durable exp.): Cohort profile for Italy

beverages, tobacco and meals out. Its share was 47.10% in 1985 (50.77% for the elderly), it had fallen to 38.98% (40.90% for the elderly) by 1996. This may be due to a 4% price decrease, or to the overall improvementi n living standards (as we shall see, food is a necessity), ort o changes in other demographic and economic variables. Of some interesti st he more modestf all in the shareso f meals out (whose relative price instead rose 10%).

Among them ost interesting patterns that emerge from Table (1) are the major age differences in fuel (heating fuel & electricity) share, and the extremely large increases over time in the health share thatm ore than doublesf or both the whole sample and for the elderly sub-sample. The miscellaneous category labeled 'other goods' (that includes insurance premia,p ersonal care services and personal items, but excludes here holidays and meals out) also shows a marked increase over time, particularly for the elderly.

We now plot the average cohort budget shares against age: we expect zero cohorte ffectsf org oodst hate xhibitu nitb udgete lasticities(they are neither necessitiesn or luxuries), positive cohort effectsf or younger, richer cohorts for luxuries, negative cohort effects for necessities. We also expect time effects to be sensitive to the budget elasticity if they capture permanent time shocks to life-time resources. However, time effectsc an also capture changes in relative prices.

We show in Figure 13 the plot of total food share (i.e. the ratio on spending on food at home, meals out, beverages and tobacco to expenditure on non-

Table 1: Budget shares in 1985 and 1996

	1985		
good	Share: Overall	Share: Over 60	Relative price
all food+tobacco	47.10	50.77	
food at home	36.81	41.76	1.02
tobacco	2.15	1.72	
meals out	4.96	3.83	0.94
housing	3.32	4.11	0.95
home goods	5.47	6.17	1.00
fuel	7.46	9.26	1.20
health	1.49	1.94	1.05
transport	12.83	8.64	1.04
holidays	0.75	0.62	0.94
clothing	9.08	7.79	0.96
leisure	5.06	4.12	0.92
other goods	7.30	6.43	0.94
	1996		
good	Share: Overall	Share: Over 60	Relative price
all food+tobacco	38.98	40.90	
food at home	29.71	33.64	0.98
tobacco	1.83	1.31	
meals out	4.85	3.15	1.04
housing	4.79	5.69	1.13
home goods	4.84	5.48	0.97
fuel	7.56	9.24	0.96
health	3.06	4.05	1.00
transport	16.36	12.74	1.03
holidays	0.79	0.55	1.04
clothing	8.09	7.07	0.97
leisure	6.05	4.91	0.97
other goods	9.28	9.11	1.04

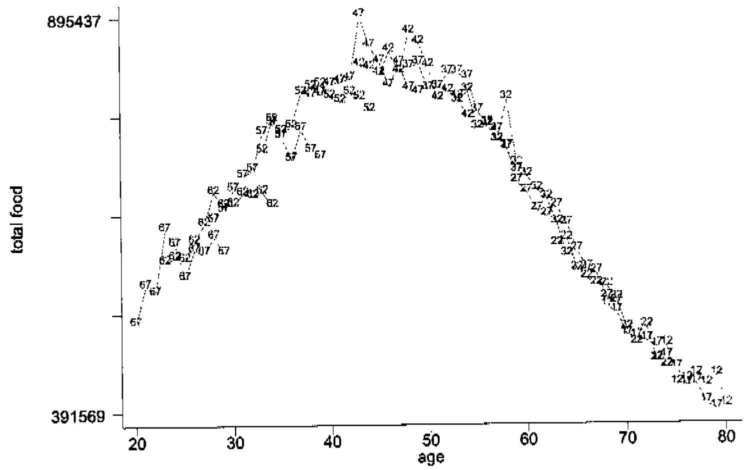

Figure 10: Total food expenditure: cohort profiles for Italy

durable goods and services, excluding rent and imputed rent), as well shares of food at homep lus beverages, meals out and tobacco. The NW quadrant refers to total food: we notice negative cohort effects for younger cohorts, in line with well-established evidence that food is a necessity. We also see strong time effects: the food share decreases over the first part of the sample period, and stabilizes after 1992 for cohorts past age 50. This is in line with evidence on the permanent nature of the 1993 recession. In the NE quadrant we plot the food at home plus beverages share: the overall picture is similar, with negative cohorte ffectsa nd smallert ime effects. Once again, there isa strong positive age effect throughout. The SW quadrants hows the budgets hare of smoking: cohort and time effects are minor, but there is a clear negative relation with age (particularly strong after retirement age). A similar picture refers to meals out (SE). Quite clearly, the overall age effect for total food is dominated by food at home and alcohol.

In Figure 14 we show cohort age profiles for four goods where positive age effects prevail, i.e. whose share increases with age. The NW quadrant refers to heating fuel and electricity: the graph is mostly flat until retirement age but becomes steeply ascending thereafter. Cohort and time effects are relatively minor for fuel. Home goods and services (a composite commodity containing soaps and toiletries,h ouse services,l aundry and tailoring,f urniture repairs,l inen etc.) showss trong common time effects (their share fallss harply after 1992)a nd a positive age effect after retirement age. The age profile ofh ousing expenditure (a commodity reflecting water chargesp lus maintenance and repairs) - shown in the SW quadrant- is instead monotonically increasing, with common pos-

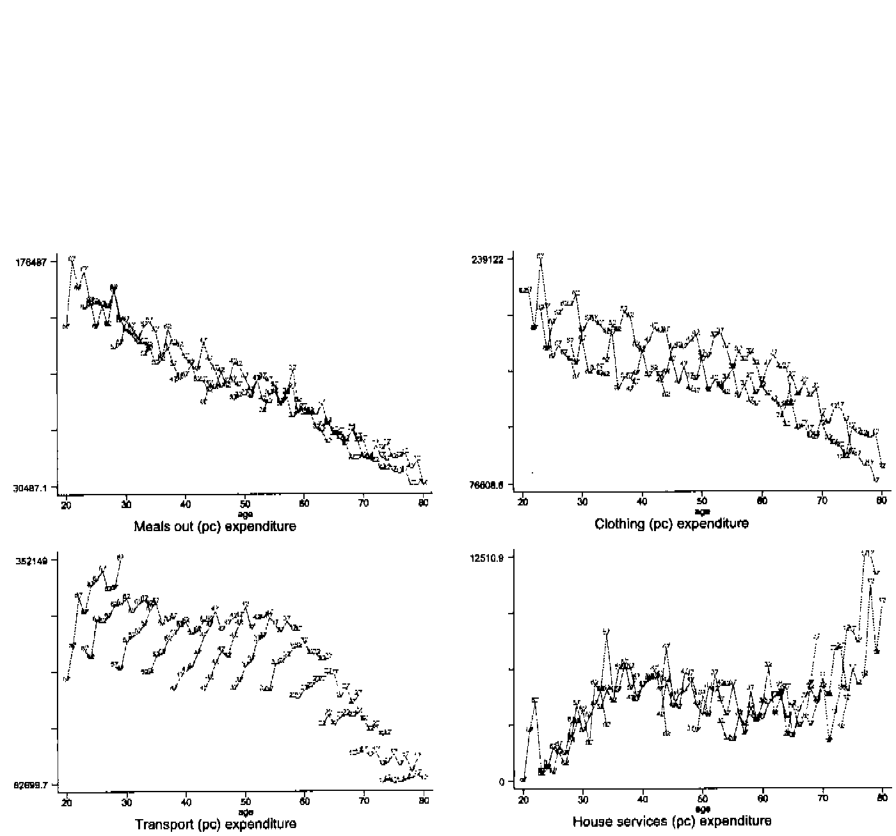

Figure 11: Work-related per capita expenditures

itive time effects afterl 992. It'sw orth noting thats pending on maintenance and repairs relatest o the size and age of the home, and is unlikely to decline with age unless elderly households trade down in the housing market (a rare event in Italy). As a share of non-durable expenditure it will then rise with age. A similar picture can be drawn for the health share (SE): here there are extremely strong time effects, positive cohort effects (in fact we find that health expenditure is a luxury good) and a gently ascending age profile. [7]

Given the relevance of health spending for the elderly population, we plot in Figure 15 the budget shares of its two single largest components against age: medical drugs and doctors (this includes specialist visits and nurses). The drugs expenditure share is dominated by positive time effects: prescription drugs bought under the public health insurance scheme attract a co-payment,a nd this has risen over the years. Up to 1992 this took the form of a prescription charge. The 1992 health care reform drastically restricted the list of drugs covered by the public health system.For the average unconditional share that is computed on all households (whether they purchase or not), we observe an unambiguous positive time effect. The conditional share for positive spenders (not shown)

[7] Consumption of health goods and services is of course a necessity of life. However, the budget share ofp urchased health services increases with the budget, because better off households tend to switch from subsidised public health services to private, market price services.

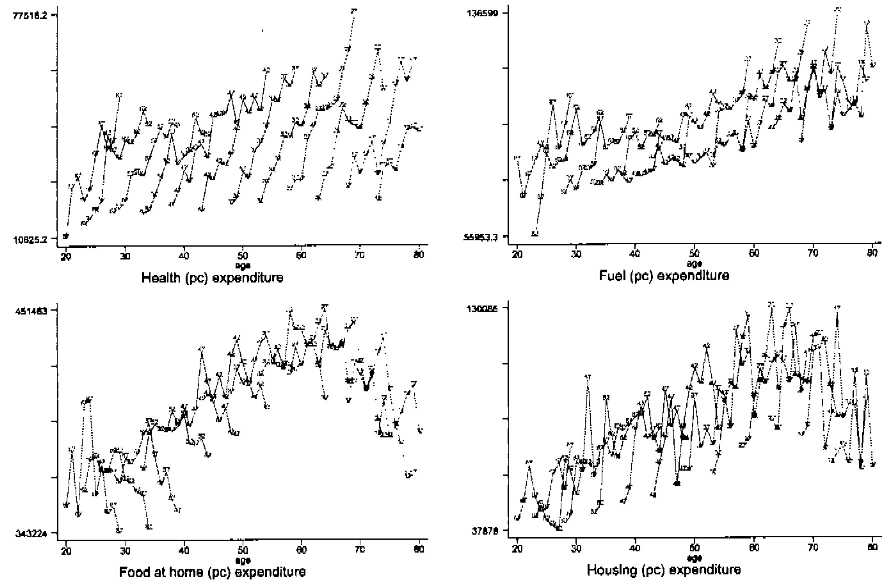

Figure 12: Old age-related per-capita expenditures

also increases, but to a lesser extent. The budget share on doctors visits and nurses is also steeply rising for each cohort: even though basic care (GP visits) and hospitalization are for free under the public health scheme, specialist visits have attracted ever larger co-payments in the 1982-1991 period under the public health system. As a result of the 1992 reform, patients now pay the full cost of the visit, up to a maximum set by law. This maximum reached a peak in 1993, but was later reduced and made age and household income-dependent. It's worth pointing out that a growing fraction of specialist visits has been paid for out of pocket by Italian households throughout the sample period. To date, relatively few households are covered by private health insurance policies (in 1995, 11% households were at least partly covered - only 5% in the past retirement age group), and even these can be expected to pay a non-negligible fraction of treatment out of pocket.

In Figure 16 we show instead cohorta ge profiles for four goods where age effects are mostly negative, i.e. whose share decreases with age. The NW quadrant refers to transport (that includes public transport, car insurance and running costsa nd motorf uel), where the graph showsa smooth decline until retirement age and a sharp drop thereafter. In this case, cohort effects are very important and positive, whereas timee ffects arer elatively minor. The share ofe xpenditure on holidays (NE) falls steadily with age, particularly after

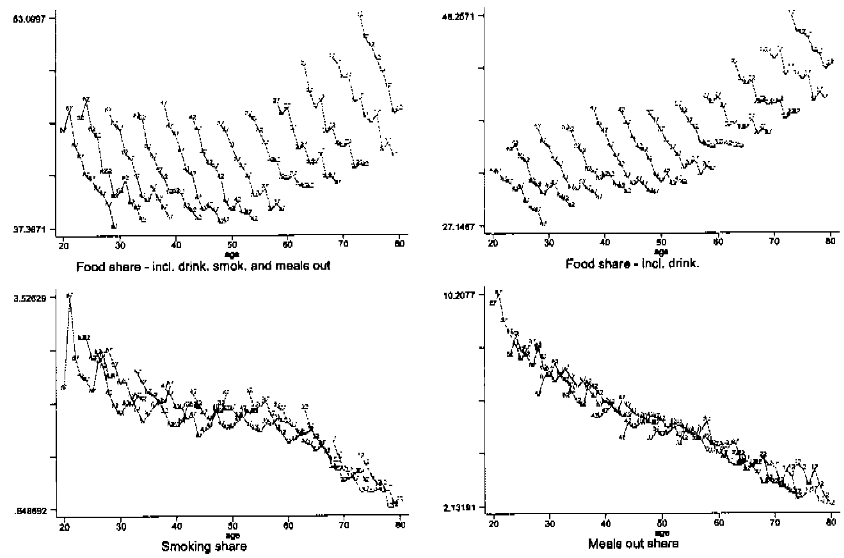

Figure 13: Food budget shares

retirement age. Time and cohort effects are relatively minor. The age profile of the share of leisure goods and services expenditure shown in the SW quadrant (this item includes books, newspapers, toys, sports goods, cassettes and CD's, plants and flowers) is relatively flat until age 40 and then decreasing throughout, with common time effects in the early years. Finally,o ther goods and services (a miscellaneous item including insurance premia, personal care services, personal items etc.) steeply ascends up to age 45 and the declines.

A final graph worth considering plots the average per capita spending on durable goods against age. Durable purchases are notoriously volatile over the business cycle and are predictably decreasing in importance with age, because households deplete their stocks in old age. Both patterns are quite visible in Figure 17: spending on durables peaks in the early 1990's, as well documented in the nationala ccounts statistics. The overall decline in spending is quite clear and rather steady. Cohort effects are also evident,a s to be expected with luxury goods. It is very hard to detect strong effects near retirement age: There is little prima facie evidence that the newly retired invest in durables to provide for their old age.

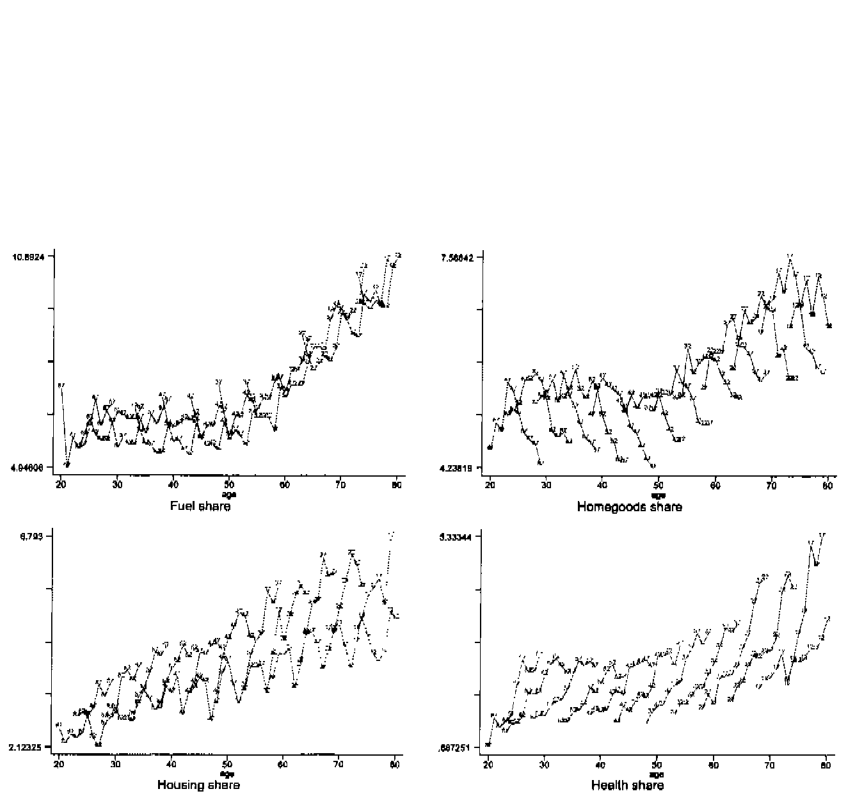

Figure 14: Budget shares for fuel, homegoods, housing and health

3 Regression Analysis

In this section we poset he following question. Is there an additional effect of retirement on consumption over and above the effect of aging? In order to answer this question we estimate the age-cohort profiles described above and test for the structural changes across the subsample of households whose head is retired and all the other households.

As a benchmark, we take the specification corresponding to figure 3:

$$\log(c_{ht}) = \sum_{c=1}^{C} \alpha_c \delta_c + f\,(age) + \sum_{t=1}^{T} \beta_t d_t + \varepsilon_{ht} \qquad (2)$$

where d_t are time (year) dummies whose coefficients sum to zero and are orthogonal to a time trend (Deaton and Paxson, 1994). As usual, we attribute all time trends to the interaction of age and cohort, but explicitly allow for common business cycle effects in view of the strong common time effects apparent in Figure 3 and most figures shown above. Age effects are often modeled by means of a high order age polynomials. Given our interesti n differential age effects around retirement, we prefer to use a set of age dummies, defined over 5-year bands for the 20-54 interval, and over 3-year bands for the 55-75 interval. Households whose head is between 76 and 80 years of age make up the oldest

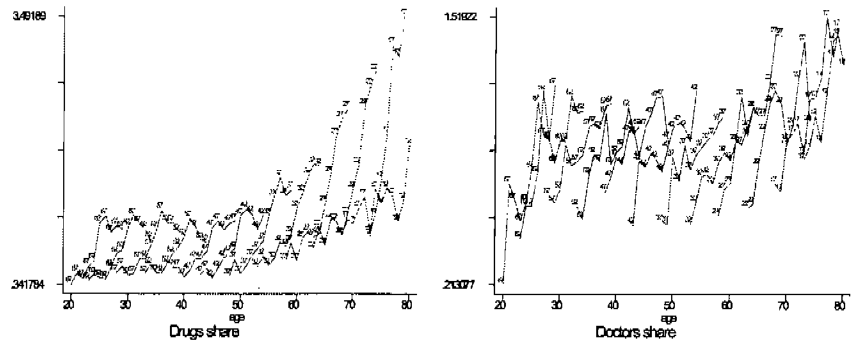

Figure 15: Drugs and doctors budget shares

age group.

As shown in column 1 in Table A1, cohort effects are monotonically increasing from the oldest cohort (born 1910-14 - the control group) to the ninth cohort (born 1950-54), whose average consumption is 48.6% higher. Then the pattern is reversed, and the youngest cohorts pends on average 46.2% more than the oldest cohort. Age effects (also shown in Figure 18) reveal a rising profile until age group 6 (aged 45-49)a nd then a fall: by age 68, average consumption is only 17.5% above the control group (in this case, the youngest). Finally, year dummies confirm theg raphical impression of a peak in 1991: negative(but growing) coefficients characterize 1985, 86 and 87, and again 1993, 1994, 1995 and 1996.

In column 2 in Table A1 we report coefficient estimates for a specification that deflates real consumption by the number of equivalent adults. This regression correspondst o figure 6 and its parameter estimates help us interpret the graphical findings: age effects are less strong than in column 1 and peak much later (at age 59),c ohort effects are strong and positive (higher for younger cohorts) and year effects are positive in the late 1980's and early 1990's. In column 3 wea lternatively introducet he logarithm of then umber of equivalent adults in the regression: its estimated coefficienti s .72, significantly different from unity. This implies that taking per-capita consumption is too strong a correction for family size effects. In this specification age effects are important, and we estimate a hump-shaped age-profile for thel ogarithm of non-durable consumption peaking around age 56. Cohort and year effects are similar to the previous specification.

Next we introduce in the equation a few retirement and demographic indicators: a dummy for female head, another dummy for head retired and a third dummy for head living on other types of pension (e.g.: widows on a surviving

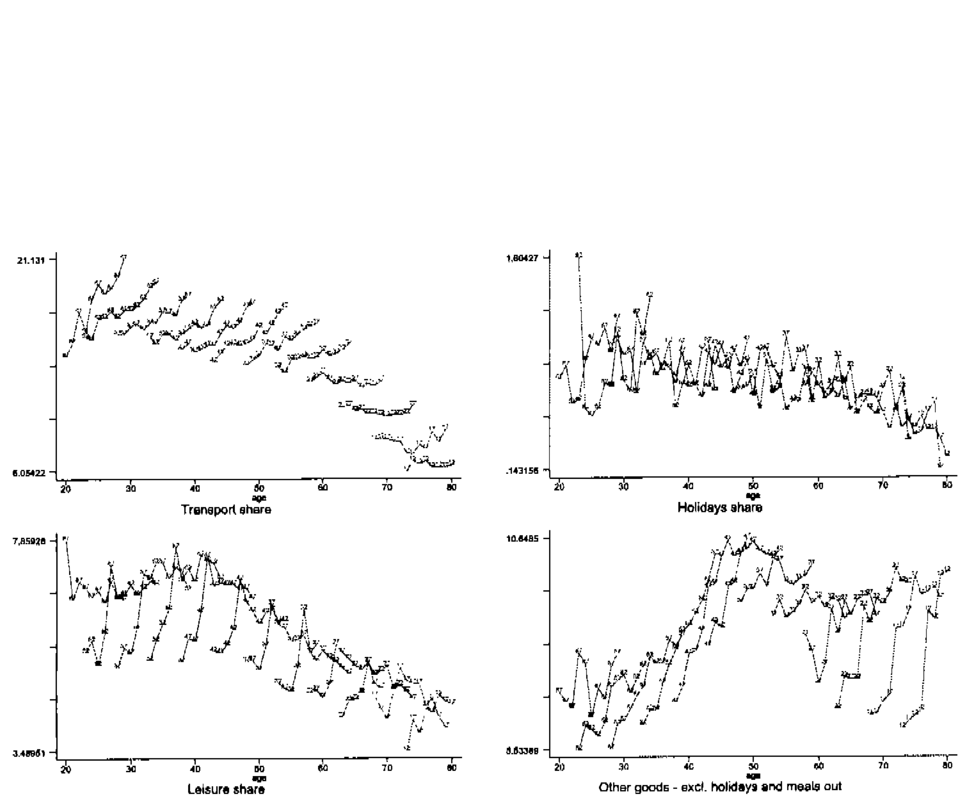

Figure 16: Budget shares of transport, holidays, leisure and other goods and services

spouse pension, or ex-workers on a basic income pension). We also interact the sum of these last two dummiesw ith five age dummies covering the age range 50-66, so as to allow for different age effects according to retirement status over the age range where the proportion of retired is significantly different from 0 or 1.We find (see column 4 in Table A1)t hatr etirementi nduces a drop in consumption of either 20% or 35% according to its nature, but it also affects the age profile as shown in Figure 19. Our estimates imply that somebody aged 52 consumes an extra 10.4% over the controlg roup (aged 22). If the head is retired from work their consumption is 7.7% lower (-20.0+12.3=-7.7%), i.e. only 2.7% above the control group. For the following age group (centered around age 56) the positive discrepancy with respect to the control group is 10.2% - if they are retired from work their consumption is (20-15.4)=4.6% lower. The attenuating effect of the interaction term becomes less important with the next age group (59) and all but disappears with the next two.

To interpret these findings and the picture in Figure 19, it's worth keeping in mind that 17% of the age group centered at 52 are retired. This percentage rises to 31% for those aged 56, to 49% for those aged 59, to 71% for the next age group (centered around 62) and 85% for those aged 65. The yawning gap between the two lines pasta ge 59 in Figure 19 ist herefore largely due to the very special nature of the working group for those ages and is ofl ittle economic interest. A

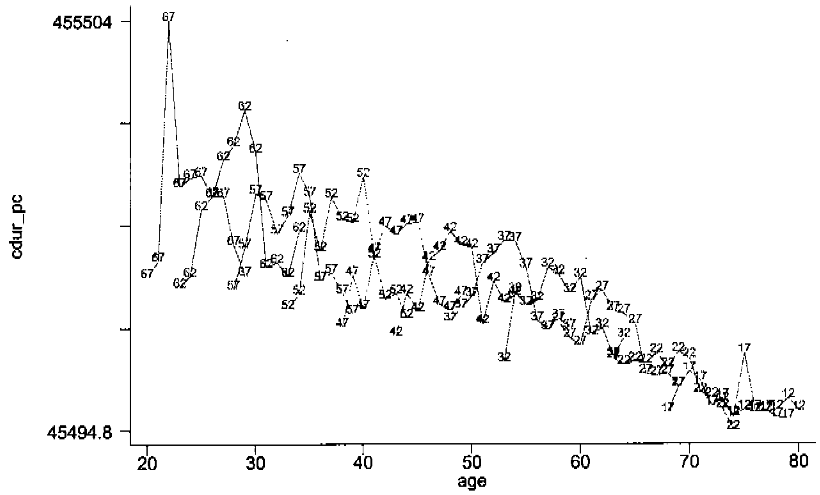

Figure 17: Per-capita expenditure on durable goods

similar argument applies to the vertical distance for age 52, that again reflects the non-random nature of very early retirement. If we don't control for socio-economic variables we cannot give an unambiguous interpretation to this type of graphs.

In column 5 we report estimates from a specification that controls for such variables as well. To be more precise, we estimate

$$\log(c_{ht}) = \sum_{c=1}^{C} \alpha_c \delta_c + f\left(age, ret_{ht}\right) + Z'_{ht}\gamma + \sum_{t=1}^{T} \beta_t d_t + \varepsilon_{ht} \tag{3}$$

where Z_{ht} is a vector of variables including the retirement indicators discussed above, plus education of the head, home-ownership and region. As above, age effects are allowed to vary with retirement for those age groups where the proportion of retired heads is not close to zero or one. The estimated age profile is close to the one ofc olumn 4.

Things do change when we condition upon a numbero f variables that are likely to capture leisure: number of workers in the household (other than the head), employment and occupation of the head (plus a dummy for the head living off income other than pensions and earnings). When we control for these variables, we find that the drop in consumption associated with retirement from

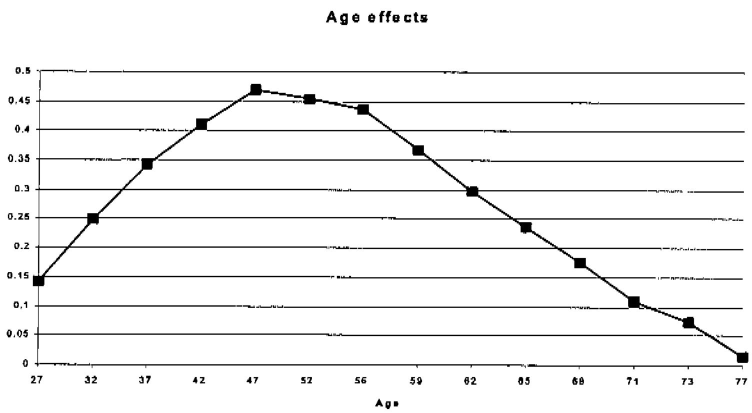

Figure 18: Estimated age profile - col. 1 Table A1

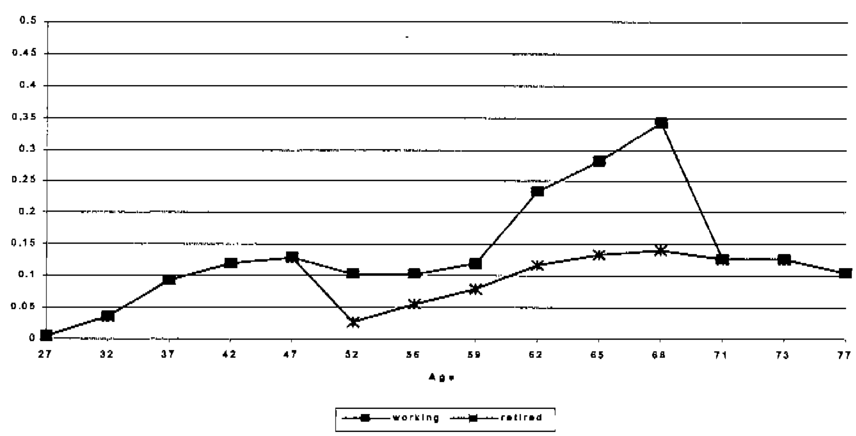

Figure 19: Estimated Age Profiles - Table A1 col. 4

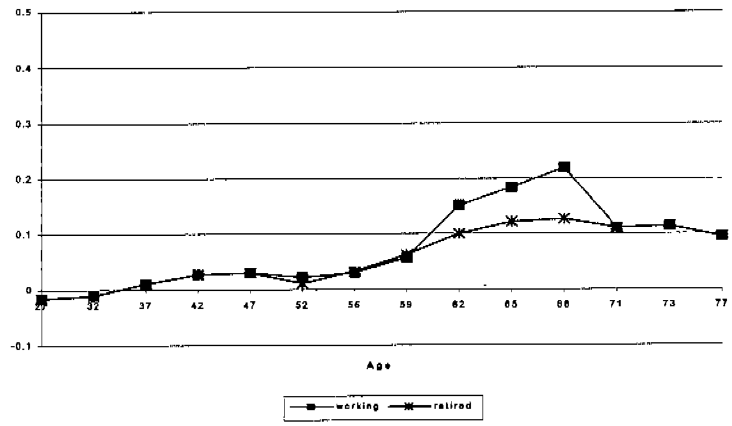

Figure 20: Estimated Age Profiles: Table A1 col. 6

work is much smaller (9.4% in column 6 - it was 20% in column 4) - it is also reduced for other pensioners (16.8% instead of 35%). For age group 7 (mid-age: 52)t he difference from the control group is +2.2% if the head is not retired, 1.2% if retired and for the next group (mid age: 56) there is almost no difference in consumption when the head is retired (+3.1% if working, +3.2% if retired). Vertical distances ($working - retired$) are positive and significantly different from zero only for ages=62 and above (it's worth recalling that 71% are retired in the age group centered at 62, and this proportion increasest o 85% for the next age group). Figure (20) provides a graphical summary of these findings.

The profiles we estimate do not directly condition on current income, because in the data we have little direct information on it: an income variable exists but in a very large fraction of cases it is the result of imputation and we do not know when an imputation was made and how large it was (even though we do know it has a substantial impacto n thc aggregate. See Brandolini, 1999, for details). Fortunately, for about two thirds of observations we have information on self-reported saving class. Respondents state if their annual saving is less than \$50, between \$50-\$80, etc., up to \$3800 or above. Thism akes a total of 16 possible saving classes. When we add this categorical variable to the list of explanatory variables used in column 6, we find that the drop in consumption associated with retirement from work is similar (8% in column 7 - it was 9.4% in column 6) - the same applies for other pensioners (14.3% instead of 16.8%). For ageg roup 7 (mid-age: 52) the differencef rom thec ontrol group is now 0.2% if the head is not retired, +0.1% if retired, and for the next group (mid age: 56) the differences are, respectively, 0.3% and +1.4%. As before, vertical distances ($working - retired$) are significantly different from zero (and positive)

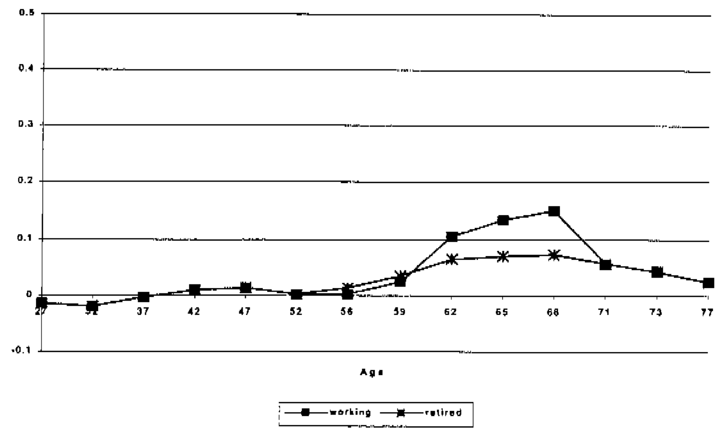

Figure 21: Estimated Age Profiles: Table A1 col. 7

for ages 62 and above. For age=65 we have a -6.5% consumption fall associated to retirement: those 15% who are still working at this relatively late age do spend more after allowance is made for leisure and for their saving behaviour. The graph in Figure (21) shows that the age effects are overall smaller, but the vertical differences are in line with those shown in Figure (20).

The interpretation we give to these findings is that retirement does not at first inducea fall in consumption over and abovea purea gee ffect when demographic, leisure, income and wealth effects are controlled for. A reduction in consumption takes place eventually, but this process is quite gradual, contrary to the British evidence reported in Banks, Blundell and Tanner (1998) but consistently with the US evidence presented in Bernheim, Skinner and Weinberg (2001).

We argued above that the effects ofa ge and retirement ofc onsumption can also be investigated by looking at budget share equations like:

$$s_{it}^h = \beta_i \ln(c_t^h) + \sum_{c=1}^{C} \alpha_c \delta_c + f\,(age) + \sum_{t=1}^{T} \lambda_t d_t + \xi_{ht}$$

where $s_{it}^h \equiv \frac{p_{it} q_{it}^h}{c_t^h}$ and $c_t^h \equiv \sum_j p_{jt} q_{jt}^h$. A first advantage of this Working-Leser specification is that life-time wealth effects are captured by the first regressor, $\ln(c_t^h)$, so there is no need to control for income orw ealth directly. A second advantage is that necessities and luxuries are easily identified: the former exhibit negative $\beta_i' s$, the latter positive $\beta_i' s$. The borderline case of unit budget elasticity implies a zero β_i[8].

Given our interest in effects of retirement and demographics we can specify the equation as:

$$s_{it}^h = (\beta_i + \widetilde{\beta} ret_{ht}) \ln(c_t^h) + \sum_{c=1}^{C} \alpha_c \delta_c + f\left(age, ret_{ht}\right) + Z'_{ht}\pi + \sum_{t=1}^{T} \lambda_t d_t + \varepsilon_{ht} \tag{4}$$

where we allow β_i to be demographic-dependent: it is of interest to know how this key parameter changes with retirement and whether this affects the budget elasticity. Parameter estimates (OLS) of equation (4) are not reported here (a table is available on request). In Table 2 we report instead average budget shares for the most important goods discussed above and the corresponding budget elasticities based on OLS estimates of (4). We estimated the fulls pecification in equation (4), by allowing in Z the logarithm of the number of equivalent adults plus dummy variables forr egion, education, female head and for retired head (and other pensioner head) and by modeling the effect of retirement on the age profile as explained above (interaction terms for age dummies and retired head dummy over the relevant age range).

We seet hat food at home is a necessity, less strongly so for ther etired, and so are tobacco and fuel (heating fuel and electricity). Interestingly, tobacco elasticity gets close to one for the retired. Luxury goods are meals out, housing (net of renta nd imputed rent), clothing, health, transport (including phones, public transport, motor fuel and car maintenance and repairs), leisure goods, home goods (here net of house services) and the broad "other goods" commodity (that includes insurance premia, betting, professional fees, personal care services). Within health, wefi nd that doctors visits are a luxury while medical drugs are a necessity.

Even though retirement effects on the intercept and on β are highly significant, only in few cases are budget elasticities at the average share strongly affected by retirement: tobacco, meals out, health and transport present the larger differences. Only for tobacco and transport these differences come close to changing our classification of goods between necessities and luxuries.

Of interest to us is also the way the age profile is affected by retirement. Oura bility to control forl og(c) allows us to interpretd irect age effects of retirement as taste shifters induced by retirement, as opposed to proxies for life time resources.

Let us take total food. Even though the parameter estimates of the interaction terms between age and retirement are significantly different from zero, and

[8] The budget elasticty for good i can be computed as

$$\eta_i = 1 + \frac{\beta_i}{s_i}$$

where s_i is normally taken as the sample average.

Table 2: Luxuries and Necessities

	not retired		retired	
good	budget share	elasticity	budget share	elasticity
all food+tobacco	41.26	0.66	44.51	0.68
food at home	30.46	0.53	36.34	0.57
tobacco	2.00	0.68	1.39	0.92
meals out	6.01	1.24	3.63	1.53
housing	3.60	1.64	4.69	1.57
home goods	5.21	1.15	6.17	1.14
house services	0.21	2.44	0.17	2.29
fuel	6.12	0.71	8.50	0.72
health	1.98	1.48	2.88	1.20
transport	15.95	1.05	10.97	1.25
holidays	0.83	2.83	0.62	2.84
clothing	9.87	1.36	8.10	1.38
leisure	6.34	1.34	4.97	1.31
other goods	8.69	1.39	8.42	1.46

so are the intercept shifter and slope interaction between retirement and $\log(c)$, the overall effect of retirement at average consumption is at most (-).45%,i .e. of no economic importance,a nd not significantly different from zero. This is due to the countervailing effects on food at home and meals out, where retirement has, respectively, a positive and negative effect in the 1.4-1.9% range. This wholly agrees with the home production hypothesis discussed in the introduction.

Positive and significant effects are found for fuel, in line with the graphical evidence discussed above. Health is also strongly affected (retirement induces a share increase of 0.6-1.1%). A small positive effect is found for holidays, while transporta nd otherg oods have strong negative effects. Clothing, homegoods and leisure goods are instead largely unaffected.

Thee videncef rom share equations is thereforeb roadly supportive of the importance of work-related expenses and of home-production activities. The positive relation between health share and retirement may be suggestive of an inverse causality effect, whereby individuals in poor health retire early.

4 Cohabitation

When dealing with households, cohorts are normally defined on the basis of the year of birth of the household head. This is correct ift he head does not change over time. Within couples the head is often the male, but this choice is of little consequence if the age difference of the two spouses is not large. However, the presence of more than one adultw ithin the household does raise the issue of who takes the relevant consumption/saving decisions. There can be doubts on the ability of the unitary model to interpret the data, particularly when both spouses work. An important literature exists on intrahousehold allocation rules in consumption that is beyond the scope of this paper (see Browning, 1995, for an early application to intertemporal decisions).

The case of multiple adult (or composite) households poses further important problems: household consumption should be attributed to the various household members, and not just to the head, before age profiles can be drawn. If the choice of leaving home relates to wealth, income or consumption, we face a problem of endogenous household formation and consumption age profiles may be severely altered by composition effects.

All the regression and graphical analysis presented so far does not take into account the possibility that the presence of more of a generation in a household can affect the estimates of age and cohort effects. And yet we know from OECD, (2000) and from Figure (8) that cohabitation is a pervasive phenomenon in Italy. Cohabitation has a number of implications, some of which (economies ofs calc) are captured by the equivalence scale. Some, instead, are well beyond the scope of this paper, and challenget hew isdom of adopting the unitary model in a context where several decision makers of different age operate within the same household. But of particular concern to us is also the SE quadrant: there we observe that at least 15% of households whose head is over 70 contain at least one grown child aged 30 or more. Given the advanced age of the head, and the administrative nature of the definition of head, it is quite possible that here the economic head differs from the recorded head, in the sense that the child is the breadwinner (or principal earner) in the household and therefore takes the relevant consumption decisions.

In order to address some of these concerns,w e can follow Deaton and Paxson (2000) and treat household age as a weighted average of individual ages. Their technique, that draws upon a procedure suggested by Chesher (1997, 1998) to recover individual diet intakes from household food acquisition data, is a way to impute individual consumption from household expenditure data.

Assume that individual consumption varies with age, but that all the individuals of the same age a consume the same amounta t time t (ψ_{at}). Then household consumption c_{ht} is given by

$$c_{ht} = \sum_{a=1}^{90} n_{aht}\psi_{at} + \varepsilon_{ht} \tag{5}$$

where n_{aht} is the number of household members aged a at time t. Once we have estimated the individualc onsumption levels $\hat{\psi}$ we can decompose their variation in age, cohort and constrained year effects. In particular, we can use the linear constraints in equation (2) above to estimate:

$$\log(\hat{\psi}_{at}) = \sum \alpha_c \delta_c + f\,(age) + \sum_{t=1}^{T} \beta_t d_t + \varepsilon_{at} \tag{6}$$

where d_t are time (year) dummies whose coefficients sum to zero and are orthogonal to a time trend.[9]

The $\log(\hat{\psi})$ and estimated age effects are presented in Figure (22) over the relevant 20-80 range. The broken line denoted as *psi* represents the median of $\log(\hat{\psi})$ by age. The pure age effects are estimated according to equation (5) by specifiying $f\,(age)$ to be a fifth-order polynomial (*agepol*), an age spline as in the previous section (*agespline*) or as the sum of unrestricted age dummies (*agedummy*). Age effects oft he corresponding specification for household consumption are presented in Figure (23) in deviations from age 20 $\ln(C)$: they are computed on the basis ofa simple specification similar to the one in Table A1, column 4, but whithout all retirement dummy variables.

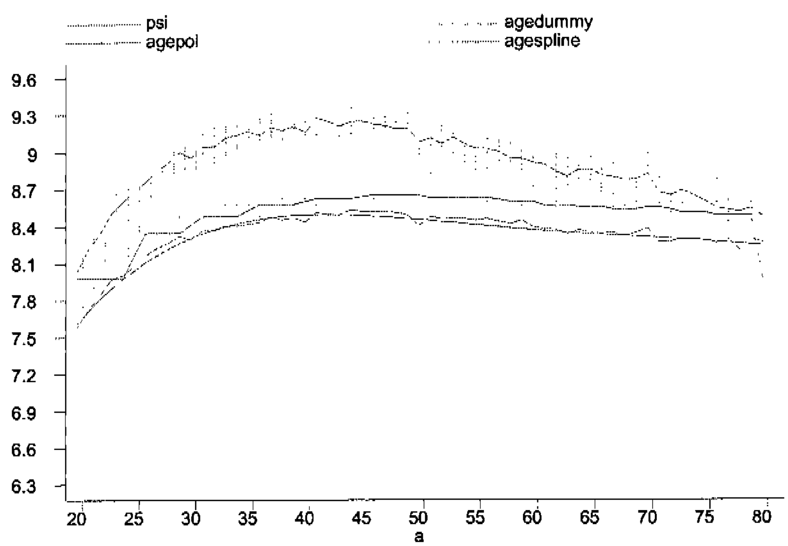

Figure 22: Individual ln(C) and age effects

[9] To account for economies ofs cale in household consumption we could deflate c_{ht} in Equation (5) by Carbonaro's equivalence scale, the standard equivalence scale adopted in Italy for poverty studies described above. Of course this is only useful to the extent that the chosen equivalence scale is the right one. For thisr eason we leave thise xtension for the time being.

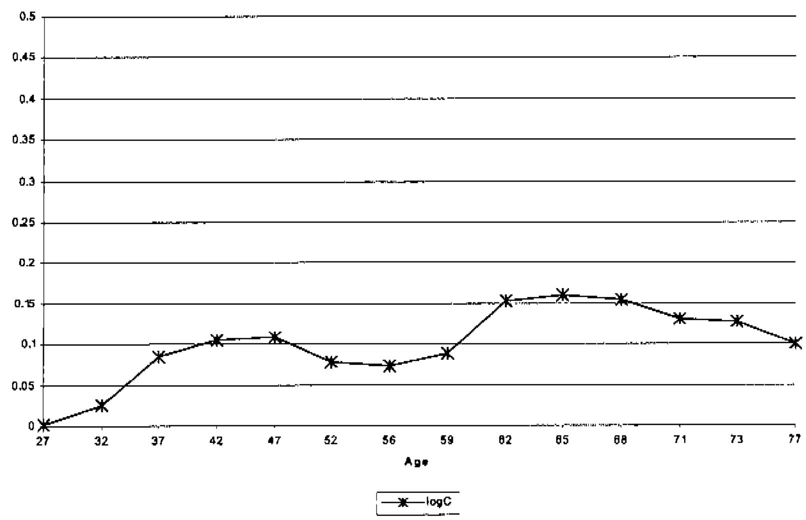

Figure 23: Household ln(C) - Estimated average age effects

We see that the individual consumption age profile is relatively flat over the 30-75 range. For this reason different methods produce widely differentp eak ages: the polynomial reaches a maximum just before age 40 while theo ther two graphs (and particularly the coarser spline) peak later, between 45 and 50. Household consumption displays instead a double peak, one around age 47 and the other past retirement age (around 65).

The striking difference in individual and household age profiles are to be expected if cohabitation is non-random: in our data, the late peak in household consumption is explained by cohabitation. Thus looking at individual consumption may be useful if we want to investigate the saving puzzle (why elderly households have positive discretionary saving). Given the low quality of income data in the SFB, this is beyond the scope of this paper.

The question we want to address here is: does the evidence on the consumption retirement puzzle change when individual consumption is used rather than household level consumption? To this end, we plot separate profiles for individuals who are working, retired from work or otherwise not working (housewives, widows on survivor pension, students, unemployed etc.). This last group is of no direct interest to our analysis, but it must be treated separately for comparability purposes (in the standard analysis, very few heads of household fall in this category, with the notable exception of widows on survivor pension, whose presence is captured by two dummy variables in Table A1 - 'head female' and 'head pensioner not from work').

Here, we assume that individual consumption varies with age, but that all the individualso f the same age a consume the same amounta t time t (ψ_{at}), conditional upon work status. Then household consumption c_{ht} is given by

$$c_{ht} = \sum_{a=1}^{90} n_{aht}\psi_{at} + \sum_{a=20}^{90} n_{aht}^{oow}\psi_{at}^{oow} + \sum_{a=45}^{70} n_{aht}^{ret}\psi_{at}^{ret} + \nu_{ht} \tag{7}$$

where n_{aht} ist he total numbero f household members aged a at time t, n_{aht}^{oow} is the corresponding number of members who are out of work butn ot retired from work and n_{aht}^{ret} is the number of household members who are retired from work. Given that very few individuals work past age 70 we constrain the age profile for workers to coincide with the profile for the retired past that age (this is achieved by letting the last summation run only up to age 70).

Our estimates of the median log consumption age profiles by work status are shown in figure (24): the profile for out of work individuals is consistently below the other two. The profile for the retired largely overlaps with that for workers between ages 45-55, and then declines more rapidly. By age 65 there is a wide gap between the two and this further widenes around age 68. After this the two profiles are forced to coincide by construction, as explained above. Thus the sudden drop in workers'consumption around age 70 is an artifact of no economic interest.

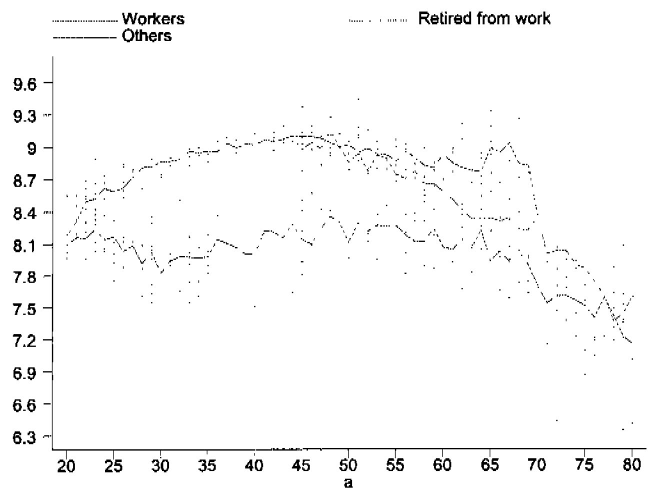

Figure 24: Individual ln(C) by work status

We can now remove cohort and year effects as explained above[10], and estimate pure age profiles that are strictly comparable to those of Table 1 column 4 (see 19 above). For this reason we specify $f(age)$ as a spline function like in Table A1 and obtain the picture shown in Figure (25). This compares directly with figure (19).

We see that in both cases workers consume more than the retired after age 60. When looking at individual consumption data, we find that the gap widens progressively with age, whereas household consumption profiles stayed roughly the same up to age 59. After age 59, both pictures show the gap getting bigger and reaching its maximum at age 68 (when only 6% of household heads continue working).

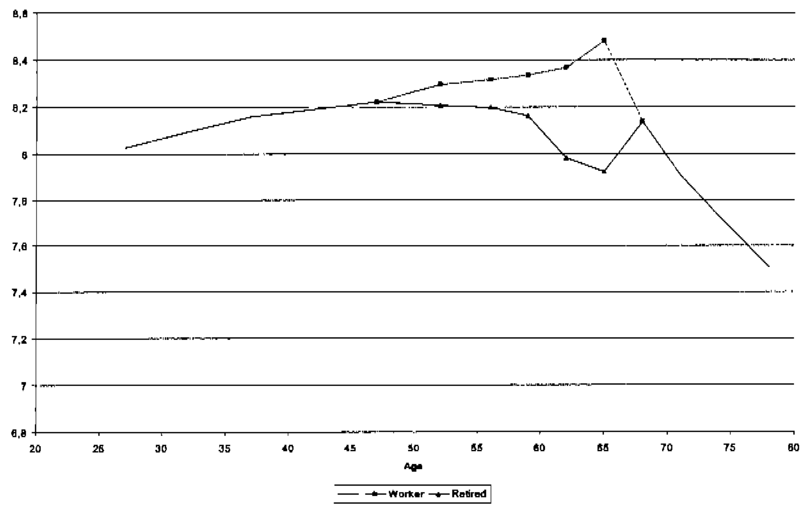

Figure 25: Individual age profiles for workers and retired

The tentative conclusion we draw from this section ist hat individual consumption data may cast some light on the saving puzzle, but add little information on the retirement consumption puzzle.

5 Conclusions

In this paper we have used a very large repeated cross sections data set covering the 1985-96 period. We have shown that age patterns are to some extent similar to those found in the US and other developed countries, but have also pointed

[10] We take equation 6 for all types of $\ln(\psi)$ and estimate separate age functions, but restrict time and cohort effects to be the same.

out that some rather special features ofI talian society, such as wide-spread co-habitation of different generations, make identification of age and cohort effects particularly difficult.

Much of the paper has been devoted to illustrating how different consumption categories vary with age and retirement: we have produced evidence that consumption of work-related goods falls around retirement age and home production of food and other goods increases. We have also shown that there is no abrupt fallo f total non-durable consumption at retirement, contrary to UK and US evidence. This could be due to the existence in Italy of a major lump sum payment to the newly retired, or to informal insurance and intergenerational links. It is also possible that pension income was correctly predicted by those who retired in Italy over our sample period, as found in studies that use data on subjective expectations (Jappelli, 1995).

In a final section of the paper we have checked for robustness of our findings to changes in definition of the head. In particular, we have shown that even if we attribute household consumption to its members according to their age, the relative difference in age profilesf or the retired and for workersi su naffected. This is corroborating evidence for the lack of a consumption retirement puzzle in Italy.

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TABLE A1: ESTIMATES OF REGRESSION EQUATIONS FOR LOG CONSUMPTION

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Ln(nd)	Ln(nd/#ea)	Ln(nd)	Ln(nd)	Ln(nd)	Ln(nd)	Ln(nd)
Coh yob=17	0.084	0.086	0.085	0.089	0.074	0.074	0.060
	(0.007)**	(0.007)**	(0.007)**	(0.007)**	(0.006)**	(0.006)**	(0.007)**
Coh yob=22	0.186	0.177	0.180	0.182	0.146	0.147	0.117
	(0.008)**	(0.008)**	(0.008)**	(0.007)**	(0.007)**	(0.007)**	(0.009)**
Coh yob=27	0.272	0.236	0.246	0.238	0.194	0.196	0.151
	(0.009)**	(0.009)**	(0.009)**	(0.008)**	(0.008)**	(0.008)**	(0.010)**
Coh yob=32	0.341	0.289	0.304	0.284	0.236	0.239	0.179
	(0.010)**	(0.010)**	(0.009)**	(0.009)**	(0.009)**	(0.009)**	(0.011)**
Coh yob=37	0.402	0.347	0.362	0.331	0.270	0.273	0.204
	(0.011)**	(0.010)**	(0.010)**	(0.010)**	(0.009)**	(0.009)**	(0.011)**
Coh yob=42	0.454	0.401	0.415	0.385	0.302	0.305	0.224
	(0.012)**	(0.011)**	(0.011)**	(0.011)**	(0.010)**	(0.010)**	(0.012)**
Coh yob=47	0.477	0.438	0.448	0.419	0.320	0.323	0.235
	(0.012)**	(0.012)**	(0.011)**	(0.011)**	(0.011)**	(0.011)**	(0.013)**
Coh yob=52	0.486	0.477	0.479	0.447	0.334	0.336	0.235
	(0.013)**	(0.012)**	(0.012)**	(0.012)**	(0.011)**	(0.011)**	(0.013)**
Coh yob=57	0.477	0.508	0.500	0.455	0.338	0.342	0.231
	(0.014)**	(0.013)**	(0.013)**	(0.012)**	(0.012)**	(0.012)**	(0.014)**
Coh yob=62	0.466	0.549	0.526	0.466	0.350	0.354	0.233
	(0.014)**	(0.013)**	(0.013)**	(0.013)**	(0.012)**	(0.012)**	(0.015)**
Coh yob=67	0.462	0.611	0.570	0.494	0.368	0.374	0.243
	(0.016)**	(0.015)**	(0.015)**	(0.015)**	(0.014)**	(0.014)**	(0.017)**
year=1985	-0.061	-0.063	-0.062	-0.061	-0.059	-0.058	-0.047
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1986	-0.032	-0.030	-0.030	-0.029	-0.030	-0.029	-0.023
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1987	-0.015	-0.014	-0.015	-0.015	-0.012	-0.011	-0.005
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)
year=1988	0.002	0.003	0.002	0.002	0.005	0.005	0.008
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)*
year=1989	0.023	0.025	0.024	0.025	0.026	0.024	0.023
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1990	0.074	0.071	0.072	0.071	0.066	0.065	0.047
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1991	0.087	0.086	0.087	0.086	0.081	0.079	0.064
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1992	0.049	0.048	0.048	0.047	0.043	0.041	0.028
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1993	-0.026	-0.024	-0.025	-0.027	-0.025	-0.025	-0.034
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1994	-0.007	-0.009	-0.009	-0.008	-0.008	-0.007	-0.007
	(0.003)*	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)*
year=1995	-0.039	-0.037	-0.038	-0.037	-0.037	-0.037	-0.027
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
year=1996	-0.056	-0.056	-0.056	-0.054	-0.048	-0.047	-0.027
	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**	(0.003)**
age=(24,29]	0.141	0.042	0.069	0.004	0.001	-0.015	-0.014
	(0.013)**	(0.012)**	(0.012)**	(0.012)	(0.011)	(0.011)	(0.014)
age=(29,34]	0.248	0.061	0.113	0.037	0.011	-0.012	-0.018
	(0.013)**	(0.012)**	(0.012)**	(0.013)**	(0.012)	(0.012)	(0.015)
age=(34,39]	0.343	0.100	0.167	0.094	0.038	0.011	-0.003
	(0.014)**	(0.013)**	(0.013)**	(0.013)**	(0.013)**	(0.013)	(0.016)
age=(39,44]	0.411	0.152	0.224	0.120	0.058	0.027	0.010
	(0.014)**	(0.014)**	(0.013)**	(0.014)**	(0.013)**	(0.013)*	(0.016)
age=(44,49]	0.469	0.223	0.291	0.128	0.063	0.031	0.014
	(0.015)**	(0.014)**	(0.014)**	(0.014)**	(0.014)**	(0.014)*	(0.017)
age=(49,54]	0.454	0.271	0.321	0.104	0.056	0.022	0.002
	(0.016)**	(0.014)**	(0.014)**	(0.015)**	(0.014)**	(0.014)	(0.017)
age=(54,57]	0.436	0.317	0.350	0.102	0.066	0.031	0.003
	(0.016)**	(0.015)**	(0.015)**	(0.016)**	(0.015)**	(0.015)*	(0.018)
age=(57,60]	0.369	0.323	0.336	0.119	0.091	0.057	0.025
	(0.016)**	(0.015)**	(0.015)**	(0.016)**	(0.015)**	(0.015)**	(0.019)
age=(60,63]	0.298	0.318	0.312	0.234	0.190	0.151	0.105
	(0.017)**	(0.016)**	(0.015)**	(0.018)**	(0.017)**	(0.017)**	(0.020)**
age=(63,66]	0.236	0.318	0.296	0.282	0.223	0.183	0.134
	(0.017)**	(0.016)**	(0.016)**	(0.019)**	(0.018)**	(0.018)**	(0.022)**
age=(66,69]	0.175	0.310	0.273	0.342	0.272	0.220	0.151
	(0.018)**	(0.016)**	(0.016)**	(0.019)**	(0.018)**	(0.018)**	(0.022)**
age=(69,72]	0.108	0.284	0.235	0.326	0.259	0.205	0.135
	(0.018)**	(0.017)**	(0.017)**	(0.019)**	(0.018)**	(0.018)**	(0.022)**

age=(72,75]	0.074	0.285	0.227	0.327	0.261	0.207	0.123
	(0.018)**	(0.017)**	(0.017)**	(0.019)**	(0.018)**	(0.018)**	(0.023)**
age=(75,80]	0.015	0.262	0.194	0.306	0.244	0.189	0.104
	(0.019)	(0.018)**	(0.018)**	(0.020)**	(0.019)**	(0.019)**	(0.023)**
Ln(#eq.adults)			0.724	0.700	0.717	0.704	0.688
			(0.003)**	(0.007)**	(0.006)**	(0.006)**	(0.008)**
Age(49,54]_ret				0.123	0.093	0.084	0.079
				(0.010)**	(0.009)**	(0.009)**	(0.012)**
Age(54,57]_ret				0.154	0.107	0.095	0.091
				(0.010)**	(0.010)**	(0.010)**	(0.012)**
Age(57,60]_ret				0.160	0.113	0.098	0.090
				(0.010)**	(0.009)**	(0.009)**	(0.011)**
Age(60,63]_ret				0.083	0.056	0.044	0.039
				(0.011)**	(0.010)**	(0.010)**	(0.012)**
Age(63,66]_ret				0.053	0.046	0.033	0.015
				(0.012)**	(0.012)**	(0.012)**	(0.014)
Head female				-0.063	-0.072	-0.068	-0.064
				(0.003)**	(0.004)**	(0.004)**	(0.005)**
Head Pensioner not from work)				-0.349	-0.227	-0.168	-0.143
				(0.007)**	(0.007)**	(0.007)**	(0.009)**
Head Retired				-0.200	-0.154	-0.094	-0.080
				(0.007)**	(0.007)**	(0.007)**	(0.009)**
PrChild[0,3]				-0.200	-0.162	-0.173	-0.185
				(0.009)**	(0.008)**	(0.008)**	(0.010)**
PrChild(3,5]				-0.182	-0.131	-0.140	-0.144
				(0.009)**	(0.009)**	(0.008)**	(0.010)**
PrChild(5,10]				-0.166	-0.112	-0.119	-0.120
				(0.008)**	(0.008)**	(0.008)**	(0.009)**
PrChild(10,13]				-0.120	-0.065	-0.073	-0.083
				(0.008)**	(0.008)**	(0.008)**	(0.010)**
PrChild(13,18]				-0.051	-0.007	-0.019	-0.023
				(0.008)**	(0.007)	(0.007)*	(0.009)*
PrChild(>18)				0.086	0.099	0.099	0.098
				(0.005)**	(0.004)**	(0.004)**	(0.005)**
PrAdult(18,27)				0.000	0.008	-0.017	-0.037
				(0.009)	(0.008)	(0.008)*	(0.010)**
PrAdult[27,60)				0.093	0.061	0.039	0.001
				(0.009)**	(0.008)**	(0.008)**	(0.010)
PrAdult(>=60)				-0.015	-0.034	-0.056	-0.091
				(0.008)	(0.008)**	(0.008)**	(0.010)**
Centre					-0.080	-0.077	-0.072
					(0.010)**	(0.010)**	(0.012)**
South					-0.318	-0.297	-0.287
					(0.008)**	(0.008)**	(0.010)**
Head prm.school					0.162	0.163	0.144
					(0.006)**	(0.006)**	(0.008)**
Head high school					0.191	0.172	0.156
					(0.003)**	(0.003)**	(0.004)**
Head univ.degree					0.161	0.130	0.108
					(0.006)**	(0.006)**	(0.007)**
H.prm.sc. centr					0.008	0.011	0.043
					(0.010)	(0.010)	(0.012)**
H.hig.sc_centr					-0.007	-0.005	-0.004
					(0.006)	(0.006)	(0.007)
H.univ_centr					0.027	0.021	0.005
					(0.010)**	(0.010)*	(0.011)
H.prm.sc._south					0.038	0.041	0.073
					(0.008)**	(0.008)**	(0.010)**
H.hig.sc_south					0.030	0.027	0.024
					(0.005)**	(0.005)**	(0.006)**
H.univ_south					0.030	0.010	0.001
					(0.009)**	(0.009)	(0.010)
H.fem_centr					0.017	0.018	0.035
					(0.006)**	(0.006)**	(0.007)**
H.fem_south					-0.007	-0.013	-0.011
					(0.006)	(0.006)*	(0.007)
Houseown					0.067	0.061	0.016
					(0.002)**	(0.002)**	(0.002)**
Reth_centr					0.020	0.016	0.013
					(0.005)**	(0.005)**	(0.006)*
Reth_south					0.013	-0.004	-0.013
					(0.005)**	(0.005)	(0.006)*
Higposh						0.124	0.112
						(0.004)**	(0.004)**

Unemh						-0.181	-0.083
						(0.007)**	(0.011)**
# workers						0.062	0.025
(excluding head)						(0.002)**	(0.002)**
Head oth. income						-0.023	0.033
						(0.006)**	(0.008)**
Saving class							0.020
							(0.000)**
Constant	13.556	13.480	13.501	13.639	13.611	13.649	13.703
	(0.019)**	(0.018)**	(0.017)**	(0.024)**	(0.024)**	(0.023)**	(0.029)**
Observations	369912	369912	369912	369912	369912	369912	254022

These results are obtained controlling for monthly effects.