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4 Household Saving Behavior in the United Kingdom

James Banks and Richard Blundell

4.1 Introduction

The issues dealt with in this paper relate to the level and composition of savings among U.K. households over the past 20 years. Our previous paper (Banks and Blundell 1994) presented a detailed review of the incentives to save and the related policy experiments that occurred over this period. The intention of this study is to supplement that discussion with an assessment of the actual patterns of behavior.

Over this period different individuals have experienced quite different incentives and opportunities for saving, as well as different lifetime expectations and needs. To understand and reliably document saving behavior in the United Kingdom over the last two decades we therefore turn to microdata sources. However, we will assess the reliability of these sources by drawing on aggregate evidence to supplement the microanalysis wherever possible. Individual household data allow us to discriminate between the level and composition of saving according to type of individual or household. By using a long time series of survey data we are able to document saving profiles by different date-of-birth cohorts over this period and therefore capture the differing trends

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in behavior mentioned above while avoiding the bias that is inherent in single cross-section analysis. Auerbach, Cai, and Kotlikoff (1990), among other studies, have emphasized the importance of cohort effects and the evolution of demographic profiles on savings projections. Our aim here is more modest and is simply to provide a description of the impact of these observed characteristics on observed consumption and saving behavior.

Our particular concern is to highlight the impact of changes in demographic status, retirement, and other aspects of labor market status on savings profiles and assess these in relation to standard life-cycle predictions. Evidence for strong interactions between savings, pensions, labor market status, and other characteristics can be found in a number of recent empirical studies. For example, Attanasio and Browning (1992) note the importance of demographic changes in models of consumption growth. This is also highlighted in the study of the consumption costs of children over the life cycle in Banks, Blundell, and Preston (1994). Labor market status is found to be a critical interaction in the Blundell, Browning, and Meghir (1994) study of nonretired households in the United Kingdom. Indeed its inclusion in a generalization of the standard Hall (1978) Euler equation of consumption and savings was shown to be sufficient to eliminate excess sensitivity to earned income.

When we include households with retired heads in the results reported below, there is a significant fall in consumption around the time of retirement. We find this can be partly explained by the anticipated fall in consumption costs associated with leaving the labor market. However, the fall in consumption more than matches the fall in income so saving remains positive. Hence the saving behavior of the retired is, on face value, somewhat puzzling. Carroll and Summers (1991) provide a catalogue of evidence suggesting that consumption tracks income more closely than the life-cycle model would predict. Our data analysis also picks out a rather close tracking for households around the time of retirement. The results suggest this cannot be attributed to anticipated changes in circumstances.

Skinner (1988, 1992) has provided some evidence for the United States that the degree of precautionary saving, especially in the 1970s, could explain the apparently myopic behavior of many households. Evidence on this topic for the United Kingdom is scarce and is beyond the scope of this paper, but the preliminary results in Banks, Blundell, and Brugiavini (1994) point to important effects of income uncertainty on consumption growth over the last two decades.

In summary then, as well as describing consumption, income, and saving patterns at the household level we will seek to answer a number of particular questions. These concern the degree to which perceived hump-shaped consumption and saving age profiles are caused by changes in demographic composition and a failure to account adequately for effects of the date of birth of the household when using time-series data. In addition we will investigate life-cycle profiles in household asset ownership and look in detail at how asset

holdings change at or around the time of retirement. One area in which we will not be able to say too much, however, is the extent to which the consideration of housing and durable consumption can alter the conclusions drawn from microdata.

4.1.1 Data Sources

There is no single data source that collects all the information we require on asset levels, pension contributions, income sources, and consumption expenditures over this period, and we are forced to combine information from several data sources in this paper. However, our principal database—the U.K. Family Expenditure Survey—is able to document asset income, some pension income (and some contributions), consumption levels, and earnings levels for a detailed breakdown of household types. Moreover, it has been the centerpiece for a number of important studies of savings and consumption (see, e.g., Browning, Deaton, and Irish 1985; Attanasio and Weber 1989). At IFS it has also been the subject of a number of analyses concerning changes in individual pensions (see, e.g., Disney and Whitehouse 1992) as well as the focus for the study of the evolution of the income distribution and its relation to changes in the structure of the tax, welfare, and social security system. Its reliability in relation to both accuracy of records and aggregate grossing-up is also well documented in a number of studies (e.g., Kemsley, Redpath, and Holmes 1980; Atkinson, Micklewright, and Stern 1982). Section 4.2 provides a more detailed description of the data sources available in this area and presents some summary statistics regarding cross-sectional patterns of saving observed in a single year of Family Expenditure Survey data for comparability with the other papers of this volume.

In section 4.3 we deal with income and then expenditure profiles by age, paying particular attention to understanding how life-cycle demographic change may influence the resulting shapes.[1] In addition, we deal with issues regarding saving and wealth, particularly at and around the time of retirement; we talk specifically about retirement income in the United Kingdom in section 4.4. Section 4.5 concludes.

4.2 Cross-Sectional Patterns in Household Saving

The emphasis in this paper will be on a microeconomics-based savings analysis, and, for the United Kingdom as for most countries, complete household level data are less easily available than aggregate level data. However, in the United Kingdom, information on household consumption and incomes, at least, is good, although data on wealth and asset holdings are more difficult to obtain.

1. The interested reader should note that all values are expressed in 1987 prices unless otherwise stated and a description of our main data set—the cohort aggregated FES is given in Appendix A.

4.2.1 The Family Expenditure Survey

The Family Expenditure Survey (FES) is the primary U.K. microeconomic data source—providing detailed information on the characteristics, expenditures, and incomes of about 7,000 households per year. The FES has been collected on a (reasonably) consistent basis since 1969, and in much of what follows we will use the full 22 years (over 150,000 observations) to identify life-cycle patterns in consumption and income. Consumption information is collected by a two-week diary covering all purchases; there is information on usual earnings and last monthly earnings as well as on tax payments and benefit levels. There is no top-coding in the survey but a number of studies (e.g., Atkinson and Micklewright 1983; Pissarides and Weber 1989) have found that the reporting of incomes by both high-earning households and the self-employed can be unreliable. For this reason many studies trying to look into the income distribution in the United Kingdom (and indeed the official statistics on incomes) have matched income data from the Survey of Personal Incomes (SPI) for the top half-percentile (see Giles and Webb 1993; Department of Social Security [DSS] 1992).

A further household-level survey provides detailed information about particular aspects of household decision making. As such the General Household Survey (GHS) can provide detailed information on retirement or health, for example, for one year only in addition to a small core of questions relating to income consumption and demographics that facilitate linking the GHS to other years and other surveys (see Office of Population Censuses and Surveys [OPCS] 1992).

To supplement our discussion of pensions and asset wealth around the point of retirement we use the Retirement Survey (see Bone et al. 1992), which was carried out in 1988 and interviewed only individuals at or around retirement age. The survey covers just over 3,500 individuals between the ages of 55 and 69 and provides detailed coverage of pensions, work histories, saving, and health that we will refer to in section 4.5 below.

The FES has no serious top-coding or censoring problems apart from the above-mentioned underrepresentation of high-income households. The extent of this has varied from year to year and has affected the way in which the FES totals match aggregate figures themselves. Attanasio and Weber (1992) show that in the late 1980s income growth in the FES is greater than that in the national accounts, while both series exhibit consumption growth. Thus the FES does not display the large drop in the saving ratio that is thought to have occurred in the United Kingdom between 1986 and 1989. The reason given for this is an increase in the representation of high-income households in the survey, generating high average income growth from one year to the next but not being reflected in equivalent increases in consumption.[2] In the past, FES num-

2. Indeed the representation of high incomes in 1987–88 was such that from 1988 to 1989 there was no observed average income growth in the FES.

bers have typically been grossed-up to national totals with regard to household types only. The above scenario suggests that some kind of income distribution grossing-up factors could be important in recent years. Given the nature and scope of this paper, however, we choose not to pursue the issue of grossing-up any further. Instead in the cross-sectional analysis that follows we concentrate on sample statistics that are unadjusted for the prevalence of either demographic groups or income groups in the U.K. population as a whole.

In contrast to the above, wealth data at the household level are scarce in the United Kingdom. Indeed, apart from some questions regarding wealth at time of retirement in the retirement survey, no public-use data exist that facilitate household-level analysis of total (either housing or nonhousing) wealth. An analysis by Saunders and Webb (1988) utilized a private survey of financial wealth of U.K. households. We have managed to obtain a summary of the microdata from this survey for the period 1988–92 and will give some brief evidence of financial wealth profiles from this data set for 1990. The Financial Research Survey (FRS)[3] is a cross-sectional survey of about 40,000 individuals per year which asks detailed questions regarding holdings of financial assets. Of these individuals, approximately 10 percent are called back to answer questions regarding the value of their asset holdings. It is this "value data" sample (7,162 households in 1990) that we will draw on briefly in this paper.

In most of what follows we will use the FES from 1969 to 1990 to describe income and consumption profiles by age—occasionally drawing on other data sources for comparison. We construct a time series of cross sections from 1969 to 1990 FES data to estimate "pseudocohort" models for consumption. This model uses over 152,000 household observations over the 22-year period to identify age and cohort effects in life-cycle profiles. We construct annual averages over cohorts defined by the date of birth of the head of the household (falling in five-year bands). See the appendix for details of the cohort aggregation.

4.2.2 Cross-Sectional Saving Patterns in 1990

In the following section we present cross-sectional saving profiles from the most recent year of FES data available for comparison with similar data from the other countries in this volume. Tables 4.1 and 4.2 present medians of income, expenditure, and saving by age of the head of the household and by income quartile, respectively. Income is defined as total net-of-tax weekly income of the household (1990 prices), not including any imputed income from owner occupation of housing or capital gains on financial assets; our definition of expenditure (for this section at least) relates to all purchases, including durable and housing expenditures. Saving is defined as the residual between income and expenditure, and in addition we provide two measures of the saving rate—using both income and expenditure as the denominator.

3. The FRS is carried out privately by National Opinion Polls (NOP) Corporate and Financial.

Table 4.1 **Median Saving by Age (£ per week, 1990 prices)**

Age of Head	Income	Expenditure	Saving	Saving/ Income	Saving/ Expenditure	*N*
<25	164.64	172.92	2.70	0.02	0.02	346
25–29	244.81	208.37	16.24	0.08	0.09	658
30–34	251.62	226.76	14.91	0.08	0.08	686
35–39	273.45	238.24	30.27	0.12	0.14	672
40–44	317.29	285.08	28.17	0.12	0.13	676
45–49	326.43	288.02	32.13	0.11	0.13	567
50–54	295.62	258.33	18.54	0.10	0.11	491
55–59	239.92	209.33	22.04	0.13	0.15	514
60–64	181.24	176.68	7.02	0.06	0.06	537
65–69	131.10	141.71	1.25	0.02	0.02	603
70+	91.21	90.55	7.30	0.09	0.10	1,292
All	217.01	195.44	12.28	0.09	0.09	7,042

Source: FES for 1990.

Table 4.2 **Median Saving by Income Quartile (£ per week, 1990 prices)**

Quartile of Income	Income	Expenditure	Saving	Saving/ Income	Saving/ Expenditure	*N*
1	75.45	91.78	−7.88	−0.10	−0.09	1,765
2	190.32	172.40	4.53	0.03	0.03	1,760
3	281.89	229.10	28.68	0.13	0.15	1,763
4	441.90	332.27	97.93	0.24	0.32	1,754
All	217.01	195.44	12.28	0.09	0.09	7,042

Source: FES for 1990.

As one might expect there are systematic differences in saving, both by income and by age. Median saving is negative for the bottom quartile of income but rises to a rate of 24 percent of income in the top quartile. Median saving in the whole sample is 9 percent of income (some 12 pounds per week). The corresponding ratio from the aggregate statistics for 1990 was 9.9 percent for the period January–June and 7.6 percent for July–December. When broken down by age, the main feature of this cross-sectional data is the hump-shaped profile of both income and earnings. Median saving, however, is positive in all old-age bands despite the fact that income falls rapidly for retired households. These profiles also present a rather surprising feature. The "very old" households (ages 70+) save more than the households of around retirement age. We will return to this later to establish whether this is purely a date-of-birth cohort effect or a more general life-cycle pattern of saving in the United Kingdom. Saving rates fall to 2 percent at retirement age and then rise to 9 or 10 percent for those households over age 70.

The size of the FES sample also facilitates a more detailed breakdown of

the three measures of saving—by age and income simultaneously. In tables 4.3, 4.4, and 4.5 we construct quartiles of income conditional on the age band of the head of the household and compute cell medians for the level of saving and the saving rate. The broad income and age trends apparent in the single-variable breakdown above are maintained even with this more disaggregate analysis. Saving increases for the oldest households in all quartiles. Indeed it is only in the 70+ age group that households in the (age-conditional) bottom quartile of income actually have a positive median saving rate.

Table 4.3 **Median Saving by Quartile of Income, Conditional on Age**

	Quartile of Household Income				
Age of Head	1	2	3	4	Quartile Cell Size
<25	−15.27	−3.48	10.66	58.02	86
25–29	−22.41	12.24	65.71	122.94	164
30–34	−17.16	1.88	40.36	139.88	170
35–39	−15.14	14.00	60.99	138.66	168
40–44	−16.71	16.84	62.03	147.94	168
45–49	−7.12	22.06	50.67	120.13	141
50–54	−8.28	27.43	29.19	139.12	122
55–59	−7.32	5.05	55.37	137.95	128
60–64	−6.09	−3.95	29.39	93.15	134
65–69	−3.94	−6.38	−4.06	47.40	150
70+	1.84	0.39	9.79	46.75	323
All	−7.88	4.53	28.68	97.93	1,754

Source: FES for 1990.

Table 4.4 **Median Saving/Income by Quartile of Income, Conditional on Age**

	Quartile of Household Income				
Age of Head	1	2	3	4	Quartile Cell Size
<25	−0.25	−0.03	0.06	0.18	86
25–29	−0.25	0.06	0.23	0.32	164
30–34	−0.19	0.00	0.15	0.31	170
35–39	−0.13	0.06	0.19	0.29	168
40–44	−0.11	0.06	0.18	0.25	168
45–49	−0.07	0.08	0.13	0.20	141
50–54	−0.06	0.11	0.09	0.25	122
55–59	−0.09	0.03	0.20	0.28	128
60–64	−0.08	−0.03	0.12	0.23	134
65–69	−0.07	−0.06	−0.03	0.17	150
70+	0.04	0.00	0.09	0.19	323
All	−0.10	0.03	0.13	0.24	1,754

Source: FES for 1990.

Table 4.5 **Median Saving/Expenditure by Quartile of Income, Conditional on Age**

	Quartile of Household Income				
Age of Head	1	2	3	4	Quartile Cell Size
<24	−0.20	−0.03	0.06	0.22	86
25–29	−0.20	0.06	0.31	0.46	164
30–34	−0.16	0.00	0.17	0.44	170
35–39	−0.12	0.07	0.24	0.41	168
40–44	−0.10	0.06	0.21	0.33	168
45–49	−0.07	0.09	0.15	0.24	141
50–54	−0.05	0.12	0.10	0.34	122
55–59	−0.08	0.03	0.25	0.39	128
60–64	−0.07	−0.03	0.13	0.30	134
65–69	−0.07	−0.06	−0.03	0.21	150
70+	0.04	0.00	0.10	0.24	323
All	−0.09	0.03	0.15	0.32	1,754

Source: FES for 1990.

Evidence about household wealth accumulation (both financial assets and housing wealth) is scarce. Indeed, in the absence of mandatory tax returns for basic-rate tax payers, even official statistics at the aggregate level are sparse and computed under very specific assumptions. In what follows we use the FRS for the calendar year 1990 to provide the age and income profiles corresponding to those above from the FES. The FRS data contain asset values for all individual holdings in banded values. Although we hope to use these data extensively in the future, in the current paper we are simply able to give some idea of the extent of wealth holdings by presenting median asset value bands by age, income, and housing tenure. It is beyond the scope of this paper to attribute expected values of holdings to individuals conditional on the band in which they are observed, but we do provide some initial evidence regarding some important financial assets.

Tables 4.6, 4.7, and 4.8 show how holdings and values of three widely held financial assets change with income, age, and household tenure type, respectively, in the 1990 FRS cross section. Building society accounts are by far the most widely held of these three instruments, with almost 70 percent of the survey holding an account. Such accounts always pay interest, although there are a range of interest rate–liquidity combinations available from most building societies. Bank deposit (or "time") accounts are less common, although the take-up rate is still about one-third. Consequently the median values for all households (not conditional on holding the asset) are zero in all age and income groups. This is also the case for equity, which is held only very sparsely in U.K. households (despite the attempts to promote wider share ownership in the late 1980s). It is important to emphasize that it is not possible to add up across asset holdings for each income (or age) band since the median band is

Table 4.6 **Median Asset Value Bands by Band of Household Income**

Income Band (thousand £)	Building Society Account			Bank Deposit Account			Equity		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
None	67.9	1–100	501–1,000	35.1	0	201–500	14.2	0	101–200
<2.5	58.3	1–100	501–1,000	38.5	0	201–500	8.3	0	101–200
2.5–4.5	58.2	1–100	501–1,000	33.9	0	101–200	10.1	0	1–100
4.5–6.5	62.2	1–100	501–1,000	30.1	0	201–500	11.5	0	101–200
6.5–7.5	69.8	201–500	501–1,000	30.6	0	201–500	14.2	0	101–200
7.5–9.5	67.1	101–200	501–1,000	35.6	0	201–500	17.7	0	1–100
9.5–11.5	69.0	101–200	501–1,000	31.7	0	201–500	15.9	0	101–200
11.5–13.5	72.7	201–500	501–1,000	29.5	0	201–500	17.7	0	1–100
13.5–15.5	72.1	201–500	501–1,000	30.3	0	201–500	18.4	0	101–200
15.5–17	76.2	201–500	501–1,000	32.8	0	501–1,000	19.1	0	101–200
17–25	79.5	201–500	501–1,000	34.0	0	201–500	22.8	0	101–200
25+	78.6	501–1,000	501–1,000	36.5	0	501–1,000	32.3	0	201–500
Refused	65.2	101–200	501–1,000	33.2	0	201–500	12.9	0	101–200
All	69.7	101–200	501–1,000	33.6	0	201–500	16.9	0	101–200

Source: FRS for 1990.

Note: Col. (1) for each asset gives the proportion of the group holding at least one of that asset. Col. (2) gives the median asset band for all individuals in the group. Col. (3) gives the median asset band for those individuals that hold the asset. All values are in 1990 prices.

Table 4.7 **Median Asset Value Bands by Age Band**

Age Band	Building Society Account			Bank Deposit Account			Equity		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
<25	67.5	1–100	101–200	33.3	0	101–200	8.4	0	1–100
25–29	72.0	1–100	201–500	27.2	0	101–200	12.2	0	101–200
30–34	72.2	101–200	201–500	27.3	0	201–500	16.2	0	101–200
35–39	72.0	101–200	201–500	31.1	0	201–500	18.9	0	201–200
40–44	71.3	201–500	501–1,000	36.8	0	201–500	17.8	0	101–200
45–49	65.8	201–500	501–1,000	38.7	0	201–500	20.6	0	101–200
50–54	68.0	201–500	1,000–2,000	38.3	0	501–1,000	22.1	0	101–200
55–59	68.5	201–500	1,000–2,000	38.1	0	501–1,000	24.6	0	101–200
60–64	72.6	501–1,200	2,000–5,000	37.5	0	501–1,000	22.8	0	101–200
65–69	68.2	501–1,200	2,000–5,000	34.7	0	501–1,000	21.1	0	101–200
70+	65.0	201–500	1,000–2,000	35.0	0	501–1,000	13.5	0	101–200
All	69.7	101–200	501–1,000	33.6	0	201–500	16.9	0	101–200

Source: FRS for 1990.

Note: See table 4.6 note.

Table 4.8 **Median Asset Value Bands by Tenure Type**

	Building Society Account			Bank Deposit Account			Equity		
Tenure Type	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Other	58.3	1–100	201–500	34.6	0	101–200	7.6	0	1–100
Mortgage	72.0	101–200	501–1,000	31.8	0	201–500	18.7	0	101–200
Owner	73.1	501–1,000	1,000–2,000	37.1	0	501–1,000	22.3	0	101–200
All	69.7	101–200	501–1,000	33.6	0	201–500	16.9	0	101–200

Source: FRS for 1990.

Note: See table 4.6 note.

computed conditional on the income (or age) band and will not in general correspond to the same individual for any two types of assets.

The major feature of table 4.6 is the increasing presence of equity in the portfolios of rich households, as might be expected. Another feature, however, is that, for those households that hold a building society account, the amount in the account does not appear to depend very heavily on income. The increase in the overall median band (col. [2]) is accounted for instead by an increasing proportion of individuals holding the asset. Table 4.7 shows different patterns of these asset balances by age. The median value band of building society accounts increases with age, but in this case it is the value, not the incidence, which increases as households get older.

Table 4.7 could be seen as presenting some (albeit cross-sectional) evidence for dissaving as households retire. Both holdings and values of building society accounts decline in the last two age bands, and holdings of equity also fall rapidly for older individuals.

The final breakdown of assets is by household tenure and presented in table 4.8. Unsurprisingly this shows the high correlation between owning a house and holding financial assets—with owner-occupiers without mortgages having the highest incidence and the highest values of all three asset types.

In this section we have presented cross-sectional profiles for saving and asset holdings in the United Kingdom in 1990. The main features that emerged were a distinct hump-shaped pattern in both income and expenditure, and a peculiar savings puzzle for retired households. In many age groups behavior appears to be as one might expect, with the exception of those households well into their retirement who have higher saving than we might expect. In terms of asset holdings, although we presented banded data for a single cross section, these data show distinct patterns both over age and income for the extensive and intensive margins for a number of different financial assets. The extent to which these patterns remain once cohort effects are separated from life-cycle effects can only be assessed with data that display both time-series and cross-sectional variation, to which we turn in the next section.

4.3 Evidence from a Time Series of Cross Sections

4.3.1 Income

In this section we present age profiles of real household income. The nature of earnings profiles for the United Kingdom is quite well known—we present results for completeness from a pooled cross section. Capital income and pension contribution/income profiles are less readily available, and we will need to draw on other resources to identify household-level effects.

Earnings

At the household level we can construct cohort earnings patterns using the time series of FES data. (A description of the cohort definitions and cell sizes used throughout this report is given in the appendix.) Figure 4.1 shows log earnings for the head and second adult, combined over the life cycle. The figure plots cohort cell medians[4] against the average age of the head of household, joining each cohort with a separate line (alternately thick and thin). As we have 22 years of data there are some ages at which we observe four different cohorts. This allows us, to some extent, to distinguish visually between cohort, age, and business-cycle effects. At any particular age a vertical difference between two lines shows a "cohort" or generational effect—different cohorts experience differing circumstances at the same stage in their lives. If we follow one line, however, we can see the time series for that particular cohort—this path will indicate a combination of business-cycle and life-cycle effects. A macroshock that hits everybody equally will show up at the same point on each cohort profile, i.e., not at the same age.

The high earnings/income growth in the FES since 1987 is clearly evident—with successive cohorts becoming significantly richer than their predecessors. It is also clear that, despite this, the single cross-section patterns tabulated in section 4.2 are strongly affected by cohort effects—the last point on each line in figure 4.2 corresponds to the 1990 Age-Earnings Profile in the FES. However, for each cohort, earnings do not fall over the lifetime until people in the cohort begin to retire. Hump-shaped earnings profiles are artificially generated by looking at a single year of data. Indeed, from now on we will use the full 22-year FES data set to identify profiles, since we believe it is necessary to control for cohort effects in almost all the analyses that follows.

Capital Income

The best estimate we are able to make of household capital income comes again from the FES. We construct the sum of rent from property, interest from

4. Given the discussion of income growth and the matching of national aggregates in the FES in the late 1980s we have used median earnings by age and cohort in this figure to try and reduce the impact of outlying observations. In all the other figures that follow, we present cell means.

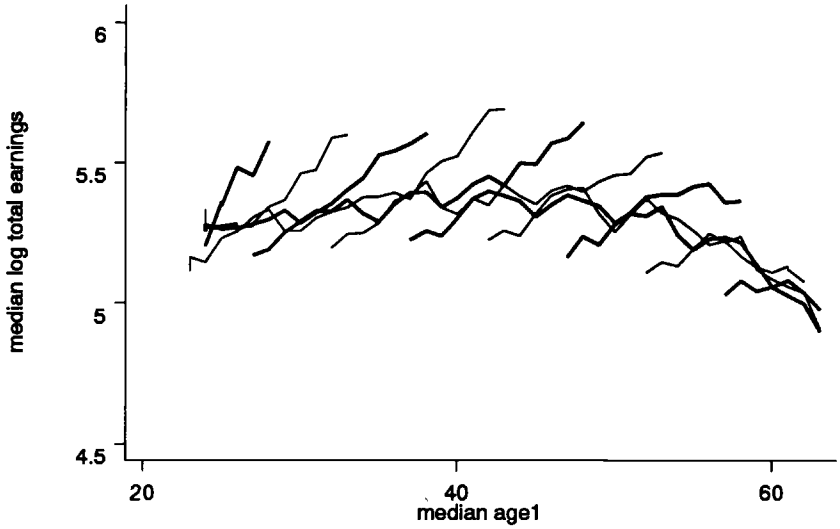

Fig. 4.1 Earnings by age and cohort

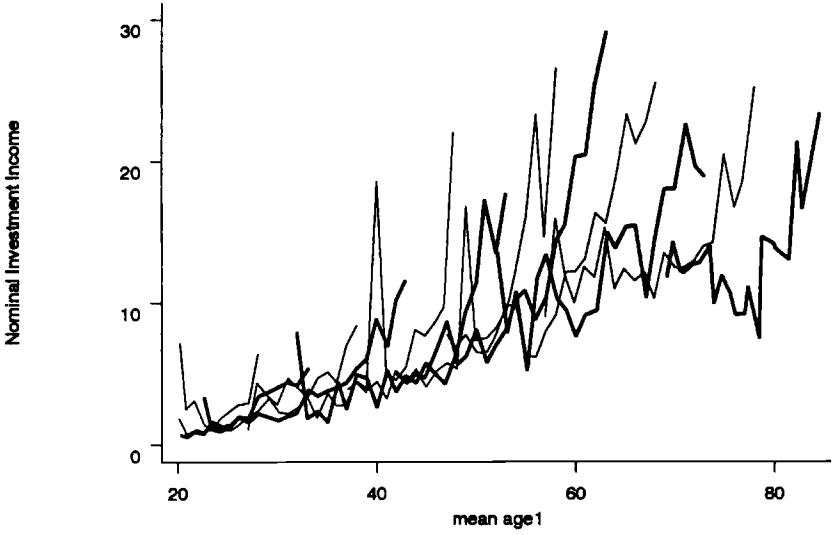

Fig. 4.2 Nominal investment income by age and cohort

savings accounts, interest and dividends from stocks, gilts, and shares (gross), and bank/building society interest (again gross). These data display both life-cycle and cohort effects as seen in figure 4.2.

In an extremely ad hoc way we try to index these gains to inflation,[5] since for much of the first half of our sample there were negative real interest rates in the United Kingdom. Figure 4.3 shows an approximate measure of real capital income by cohort and age. The older cohorts made capital losses in the 1970s—when U.K. households were saving despite the (ex post) adverse conditions. This is particularly the case for the oldest three cohorts who were at or around retirement age at this time and had, possibly, larger amounts of wealth than at other times in their life cycle. Younger cohorts have experienced rising positive capital incomes. It is worth remembering that these incomes are still incomes before tax since we have used a "gross" interest rate—the three-month Treasury Bill rate—to construct these asset income profiles.

In the absence of a panel-data survey, and given the exact nature of the financial questions in the FES, there is very little way of adding to these figures an estimate of realized capital gains, since we can never reliably know the purchase value of the asset in question.

Pensions

The analysis of pension contributions and payments is complicated in the United Kingdom by the number of regimes in which employees can choose to be. If employees take no action at all regarding pensions they will, by default, pay National Insurance contributions which will entitle them to the basic state pension plus an earnings-related element (through SERPS—the State Earnings Related Pension Scheme). In this sense many pension contributions are simply proportional to earnings (subject to the upper and lower earnings limit), and pension receipts are also proportional in some way to earnings (although again there is a fixed basic minimum). However, employees can choose to "contract out" of SERPS, in which case these profiles will change. These contracts can be occupational pension schemes or (since 1986) private pension plans, or both. Occupational schemes have had a coverage of about one-half the working population over our entire sample period and are the most relevant to this study. Personal pensions, while having had an enormously rapid take-up (see Disney and Whitehouse 1992) are really too new to facilitate reliable analysis of contribution structures (it is, of course, much too early to model payment profiles, as the majority of schemes will not begin to be redeemed until at least 2015). At the present time the take-up of personal pensions in the United Kingdom is well documented, but values and contributions remain to

5. For the purpose of this exercise we simply impute capital values as income divided by nominal interest rate (we use the three-month treasury bill rate) and then recalculate them by the same interest rate indexed by a Stone price index calculated at the household level. We use the Stone deflator throughout, although similar results are obtained using the standard aggregate price index (RPI).

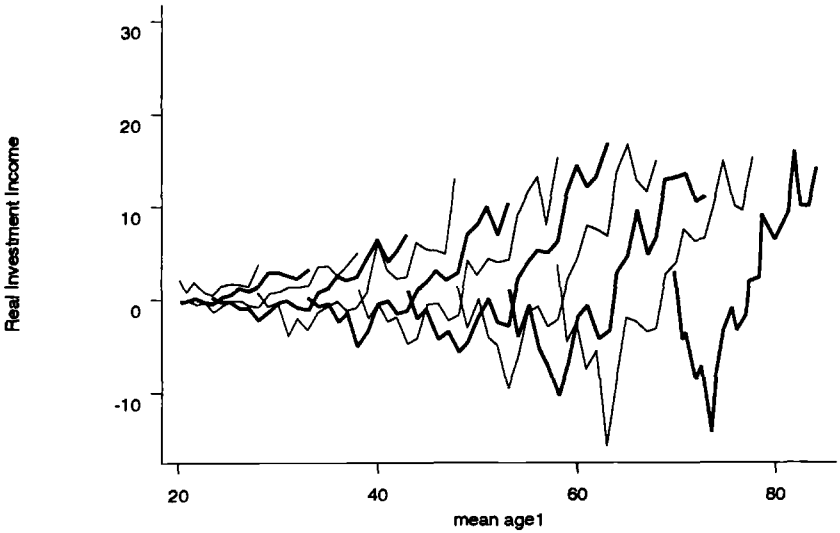

Fig. 4.3 Real investment income by age and cohort

be analyzed (although Personal Pension Plan contributions are included in the FES from 1991 onward).

While the number of individuals with occupational pensions has remained roughly constant over the last 20 years, contributions to such pension funds are proportional to income, so trends in contributions may be apparent. In addition, the majority of occupational pensions in the United Kingdom are such that the employee has little or no choice over whether to contract out and what proportion of their income to put into the scheme. However, there are no data from a single source that can reliably shed light on such issues, so in what follows we prefer to cite the work of Richard Disney and Edward Whitehouse who have concentrated on the detailed merging of all available household-level information on pensions in the United Kingdom.

Table 4.9 shows proportions of individuals currently contributing into occupational pension schemes by age and decile of earnings. Data are for all males and females and are drawn from the 1990–91 GHS. The overall take-up rate of occupational pensions is 49.86 percent, and as might be expected, the incidence of contributions rises uniformly, both with earnings and age. Occupational pensions, however, are not portable, and consequently contributions now will not always imply a significant stream of postretirement benefits for that individual. Indeed there appears to be evidence of a substantial "expectations gap" for U.K. households as they approach retirement. Disney and Whitehouse (1993) have linked 22 years of FES data to the GHS and data from the Government Actuary to estimate accrued occupational pension rights in the United Kingdom in 1987. They computed the expected value of the pension at the

Table 4.9 **Occupational Pensions by Age and by Earnings**

	Proportion Contributing (%)
Age	
20–24	28.23
25–29	48.67
30–34	53.73
35–39	52.35
40–44	56.13
45–49	57.70
50–54	58.50
55–59	55.89
60–64	61.76
Decile	
1	4.63
2	14.14
3	23.93
4	40.30
5	51.88
6	62.95
7	67.33
8	73.80
9	79.22
10	80.45

Source: GHS for 1990–91.

normal (scheme-specific) retirement age conditional on the individual's expected duration within the scheme (calculated from a job tenure model). These results are presented in table 4.10 (values are discounted to 1987 prices). The table shows clearly that current occupational pension contributions for young men and especially women will not lead to large flows of retirement income due to the high probability of a change in job tenure. Such a change in job tenure would lead to the accumulation in the fund being frozen until retirement (although in the United Kingdom such preserved benefits are indexed at least with inflation by law).

A recent study by Johnson (1992) explored many issues concerning the incomes of those in retirement. Occupational pension *receipts* by cohort and sex are reproduced as table 4.11. This evidence (also calculated from the 1970–90 FES and reported at 1989 prices) shows clear cohort effects on pension receipts for men and single women. Additionally, Johnson (1992) documents the distribution of payments by year; both the 25th percentile and the median have risen—from £9 to about £13 and from £25 to £35, respectively—but there has been a massive increase in the upper quartile point from £50 to £90 per week. A good deal of the increase in the average occupational pension by cohort is therefore attributed to rapid growth in the largest pensions, while many occupational pension payments have remained quite low.

Table 4.10 **Accrued Pension Rights by Age and Sex, 1987**

	Men			Women		
Age	Number (million)	Amount (billion £)	Average (£)	Number (milion)	Amount (billion £)	Average (£)
< 24	0.57	3.0	5,200	0.70	2.3	3,400
24–34	1.86	23.6	12,700	1.11	11.2	10,120
34–44	1.95	61.0	31,300	0.84	13.1	15,710
45–54	1.65	66.5	40,300	0.78	20.2	26,010
55–65	0.92	37.6	40,900	0.26	10.1	39,100

Source: Disney and Whitehouse (1993).

Table 4.11 **Average Occupational Pension Receipts by Cohort and Sex (£ per week)**

Date of Birth	Men	Married Women	Single Women
1990–04	40	–	–
1905–09	45	34	30
1910–14	44	29	36
1915–20	57	29	35
1920–24	65	29	40
1925–29	–	29	47

Source: Johnson (1992).

4.3.2 Consumption

In this section we start by constructing consumption (or more specifically expenditure) profiles for all goods and for all goods excluding housing and durables. Both total expenditure and nondurable expenditure display hump-shaped profiles, and age effects seem to be far more important than cohort effects in determining the profiles from FES data. As visual evidence of this figure 4.4 presents age profiles of the log of nondurable expenditure. The life-cycle pattern appears to be extremely well defined for all date-of-birth cohorts. Business-cycle effects (or any noise in the data) seem to be much less prevalent than in our previous earnings plots. (On this basis we will follow many studies and try to infer as much as possible about saving behavior from consumption information and demographics alone.)

With an apparent absence of strong cohort effects we can also present raw means by age band of the 22 years of real expenditure data for both total expenditure and nondurable nonhousing expenditure. Both expenditure profiles display humps by age, with the maximum being 136 percent of the mean for total expenditure and 140 percent for nondurable expenditure. Nondurable expenditure as a proportion of total expenditure by age band varies from 73 to 76 percent for the nonretired; this ratio varies between 70 and 73 percent for retired age groups.

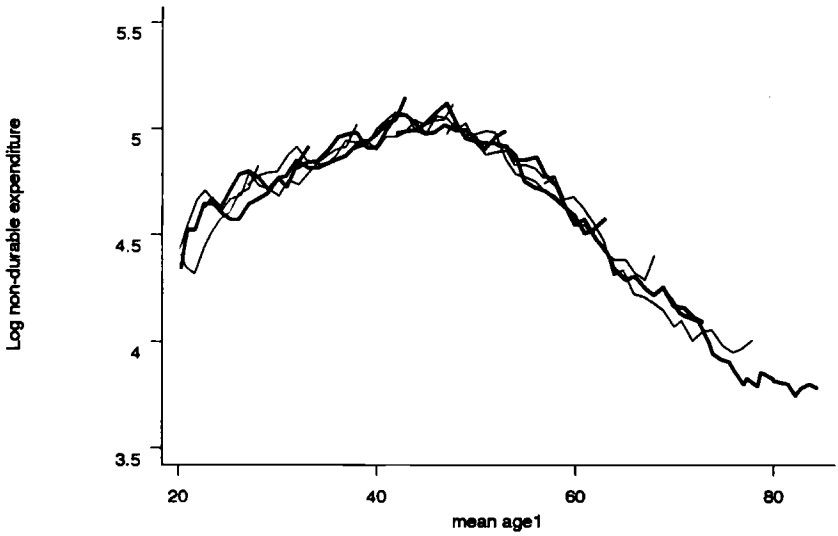

Fig. 4.4 Nondurable expenditure by age and cohort

In table 4.12 we use the adult-equivalence scales for children of McClements (1977)[6] to construct the "equivalized" expenditure columns. These profiles prove to be significantly flatter (rising to only 117 percent of the mean at their highest point). This finding (see Banks, Blundell, and Preston 1994 for more detail) is indicative of the theme of much of the recent literature on microeconomic consumption behavior in the United Kingdom—that demographics (especially children and labor market status) explain a large proportion of the life-cycle hump in consumption. Blundell, Browning, and Meghir (1994) find these variables to be particularly important in determining the intertemporal elasticity of substitution or a consumption Euler equation for 1970–86 data. We summarize the effect of equivalizing expenditure graphically in figure 4.5.

This figure corresponds exactly to figure 4.4 apart from the fact that we have plotted equivalent nondurable expenditure over the life cycle. As the two graphs are on the same scale, it can be clearly seen that equivalizing raises the incomes of young households and significantly smooths out the hump-shaped profile. However, cohort effects begin to become apparent at the end of the sample (this is even more the case when using housing and durable expenditures as well), and this reflects strong cohort effects in the demographics by which we are equivalizing expenditures (see fig. 4.9 below).

Incidentally these cohort plots can also show the series of expenditures over time rather than age of the head (although these patterns are fundamentally

6. These scales, although far from uncontroversial, are those used in the official statistics on poverty and income distribution. Under these sets of adult/child relativities, the base household is a married couple with no children (see Banks and Johnson 1993 for a fuller analysis of the effects of using different scales).

Table 4.12 **Expenditure by Age (£ per week, 1987 prices)**

Age Band	Total Expenditure	Total Nondurable Expenditure	Equivalent Total Expenditure	Equivalent Nondurable Expenditure
< 25	148.16	108.26	149.02	108.16
25–29	174.60	127.55	163.60	118.40
30–34	190.11	139.01	158.45	114.91
35–39	208.87	154.13	158.87	116.27
40–44	229.50	173.48	168.34	126.16
45–49	236.06	180.10	175.82	132.70
50–54	220.12	166.20	178.52	133.05
54–59	190.54	141.54	170.68	125.08
60–64	155.07	113.38	152.34	109.93
65–69	120.85	86.86	127.51	90.58
70–74	101.04	73.32	113.80	81.45
74+	82.99	58.17	100.31	70.27
All	173.01	127.95	151.76	110.73

Source: FES for 1969–90.

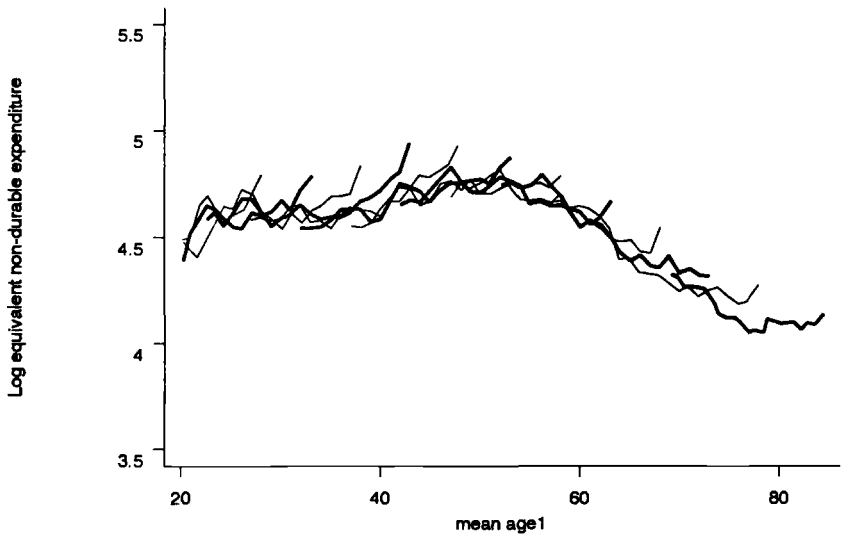

Fig. 4.5 Equivalent nondurable expenditure by age and cohort

inherent in the age plots anyway). Figure 4.6 shows time-series plots of expenditure and income from 1969 to 1990 for a single cohort of our sample that is observed for the entire period (those born between 1930 and 1934). The divergence between income and consumption for this cohort in the FES over recent years is clear.

Apart from the "pure" demographic effects on preferences and needs, how-

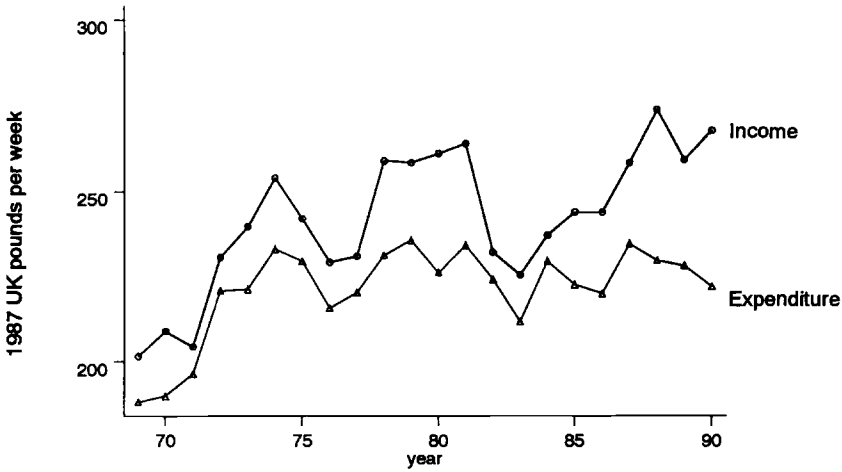

Fig. 4.6 Income and expenditure by year: households with head born in 1930–34

ever, the issue of adjusting for household size is important when comparing any U.K. microdata over the last 20 years, since this period has seen a change in the structure of households. The number of "small" households (with one or two people) has risen from about 50 percent to more than 60 percent of the total number of households in the FES (see Banks and Johnson 1993). This is a significant change and must be borne in mind whenever one compares any long time series of U.K. microdata.

Home Ownership

Unfortunately, little is known about the composition of home-purchase payments themselves in the United Kingdom. The advent of the British Household Panel Survey (the first wave of which should become available toward the end of 1993) might go some way toward rectifying this. What is clear, however, is that home ownership is much more prevalent at a much earlier age in the United Kingdom than in many other countries. Figure 4.7 shows the proportion of households that own their own home (either outright or through mortgage purchase). The two striking features are the high levels of home ownership in general and the marked increases in ownership both through successive cohorts of the data and, within each cohort, over the period of our sample. Unfortunately, very little is known about down payments for mortgages, or indeed about borrowing to obtain such down payments. Typically, down payments will need to be at least 5 percent of the house value to obtain a mortgage in the United Kingdom (although this will depend on the characteristics of the household). Despite this, it was possible in the 1980s to finance a house purchase with, in effect, a 100 percent mortgage by simultaneously borrowing the 5 percent deposit as a secured loan from the mortgage company.

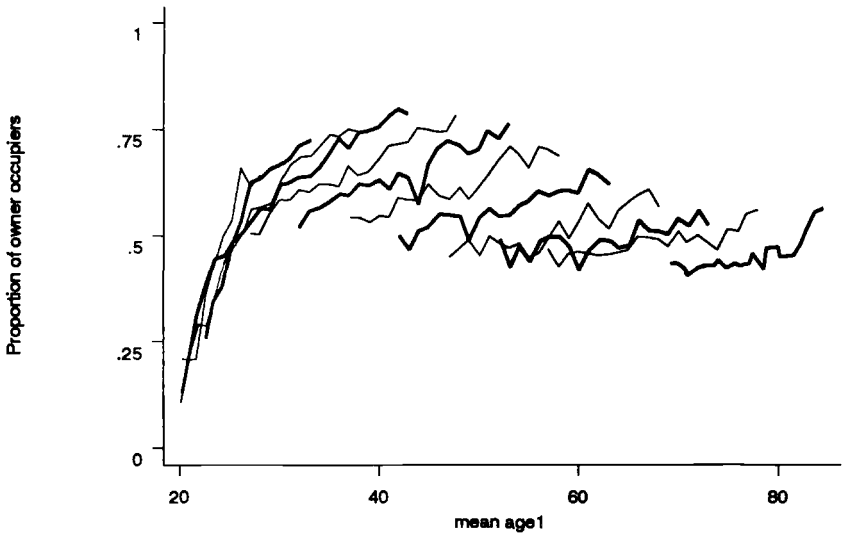

Fig. 4.7 Owner occupation by age and cohort

Health Expenditure

The subject of uninsured health expenditure and precautionary saving is impossible to analyze for the United Kingdom. What little information there is comes from the GHS, which asks a battery of questions regarding the health of the respondents. However, there is no information regarding the expenditure associated with health problems, and in general these expenditures will be small—representing the costs of prescriptions both privately and through the National Health Service (an average expenditure of £1.38 per week in the 1990 FES). And indeed some of these costs will be borne by the benefit system (in particular for children, pensioners, families on Income Support, and individuals with particular health needs).

4.3.3 Saving and Wealth

As mentioned in the introduction, there are very few data that focus on household saving levels in the United Kingdom. Attanasio and Weber (1992) have shown that simply computing residuals from FES income and expenditure codes will be problematic when using recent years, due to unusually high income growth in the FES from 1987 onward. Informal checks (at IFS) on these data have also suggested that this may be due, to a large extent, to a small number of very large self-employment incomes. In the absence of other information, however, the next section considers what we can learn from the FES about household saving profiles, and then we go on to consider issues concerning wealth, and particularly wealth/saving around the time of retire-

ment—an area of the life cycle about which, at present, economists still seem to know comparatively little.

Household Saving: Evidence from the FES

If we can assume that the income growth observed in the last four years of the FES that is not picked up in the U.K. national accounts is mostly attributable to a few large income observations, then looking at the cohort median saving rates should give us at least some idea of the age structure of saving. Indeed it is quite plausible that median saving rates may be a better guide anyway. Figure 4.8 presents these cohort median age-saving profiles for the 22-year sample. Even though we use cohort medians there is still a large amount of noise in the FES data, although an age pattern does emerge—saving appears to be hump-shaped in age until retirement and then begins to rise again. We will investigate this phenomenon in more detail in the sections that follow.

It is interesting to look at these saving profiles alongside the numbers of dependent children in FES households over the same period. Figure 4.9 is taken from Banks and Johnson (1993) and shows extremely well defined cohort effects as well as the expected life-cycle profile. In this figure the cohort number marks the exact average, and profiles are then smoothed by cubic splines.

We can decompose this analysis further by household type and focus more specifically on the impact of children on saving profiles. In table 4.13 we report median saving levels and saving rates (both out of expenditure and out of in-

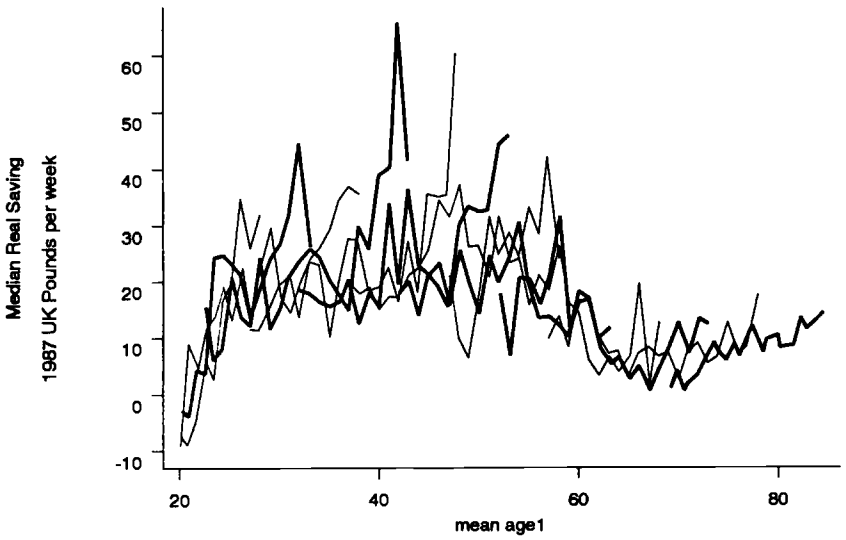

Fig. 4.8 Saving by age and cohort

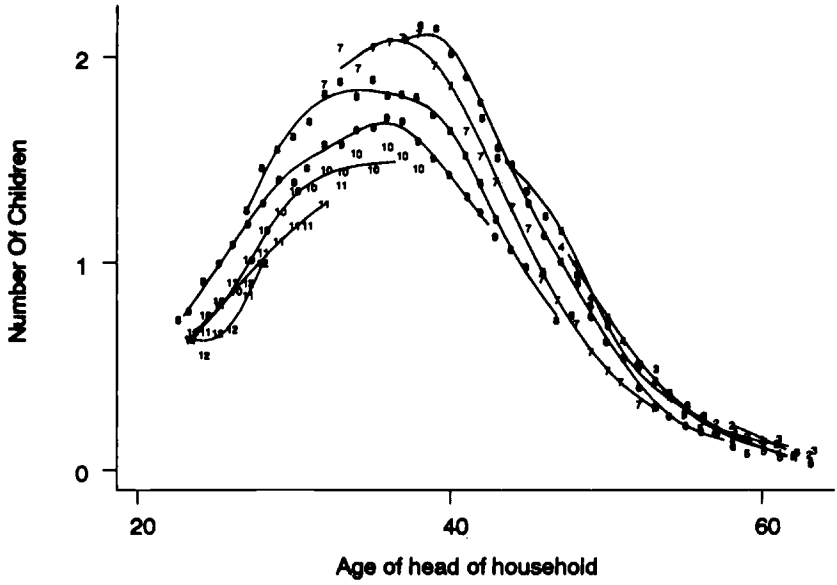

Fig. 4.9 Number of dependent children in household
Source: Banks and Johnson (1993).

come) for households of "child-rearing" age by number of children. These summary statistics are calculated over two adjacent cohorts for all households with one male and one female. Two patterns emerge. Children clearly have an effect on household saving (and households with one child appear to save less than those with more than one). However, as the head of the household gets older, given a certain household composition, saving begins to rise again.

This section has demonstrated just how much cross-sectional variation there is in U.K. savings levels and saving rates from the FES at any particular time. We go on to investigate how wealth levels might be affected by this and, given the variation in saving as measured by the residual between income and consumption, whether looking at consumption growth alone across the sample across time can improve our understanding of household saving behavior.

Saving, Wealth, and Retirement

The Retirement Survey (Bone et al. 1992) provides some evidence on the degree to which households hold wealth as they approach retirement and indeed, to a certain extent, on how wealth and saving change thereafter. The Retirement Survey was a single cross-sectional study of work and earnings histories providing detailed information on over 3,500 individuals between ages 55 and 69 in 1988. The survey provides valuable information, not least in that it allows us to analyze respondents according to their *self-assessed* retirement status rather than by age or by some imposed economic position variable.

Table 4.13 Median Saving by Age and Number of Children

Age Band	No Children	One Child	Two Children	Three or More Children	All
			Household Saving		
25–29	64.96	4.06	10.07	7.41	23.63
30–34	77.97	20.86	22.10	18.04	29.37
35–39	60.51	25.46	31.41	26.96	32.96
40–44	36.42	31.42	46.82	46.02	41.10
All	61.45	19.28	27.68	24.78	31.38
			Saving as a Proportion of Total Household Income		
25–29	0.301	0.022	0.065	0.046	0.118
30–34	0.316	0.119	0.123	0.098	0.146
35–39	0.252	0.140	0.150	0.138	0.158
40–44	0.142	0.144	0.185	0.181	0.166
All	0.263	0.101	0.133	0.120	0.147
			Saving as a Proportion of Total Expenditure		
25–29	0.432	0.022	0.070	0.048	0.157
30–34	0.461	0.135	0.140	0.109	0.180
35–39	0.337	0.163	0.176	0.160	0.190
40–44	0.165	0.168	0.227	0.221	0.200
All	0.366	0.116	0.156	0.139	0.182
			Cell Sizes		
25–29	1235	1225	1403	495	4358
30–34	859	1209	2551	1141	5760
35–39	687	973	2586	1270	5516
40–44	715	883	1530	636	3764
All	3496	4290	8070	3542	19398

Source: FES for 1969–90.

Note: Figures for households with one male and one female and head born between 1935 and 1944.

For this exercise, however, we can use the survey to look at the result of asset and wealth accumulation for one large cohort (born between 1919 and 1933) over their working lifetimes.

Table 4.14 shows the total value of nonpension nonhousing savings and investments by age for men and women in the Retirement Survey. At this point we are only trying to look at the wealth rather than the incomes of those in retirement. Income sources after retirement will be considered in more detail in section 4.6 of this paper.

Almost one-quarter of individuals had no assets or savings (excluding pensions and housing) at the time of the interview, and the proportions of people in each value band differed little when split by whether or not they had already retired (Bone et al. 1992). On the other hand, the survey shows a positive correlation between those who had retired early or planned to retire early and the value of their assets and savings. Unsurprisingly, the greatest difference in asset holdings is observed between those who were in employment as they approached retirement and those who were not. The proportion of all men who

Table 4.14 **Nonpension Nonhousing Asset Value by Age and Sex (%)**

	Age 55–57		Age 58–60		Age 61–63		Age 64–66		Age 67–69		All	
Value	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
None	26	21	25	26	20	24	23	24	17	22	22	24
<3,000	31	37	32	35	32	36	32	37	32	38	32	36
3,000–6,000	14	10	14	10	7	10	8	10	8	11	10	10
6,000–8,000	3	4	3	4	6	5	5	2	6	8	4	4
8,000–10,000	3	4	4	3	3	4	4	4	5	3	4	4
10,000–20,000	7	8	9	8	10	8	9	8	9	4	9	7
20,000–30,000	4	2	3	4	7	3	4	2	4	1	4	2
30,000+	8	5	5	6	8	5	8	4	12	8	8	6
No answer	4	8	5	5	6	6	6	8	8	5	6	7

Source: Bone et al. (1992).

had no savings or investments, for example, was 22 percent, whereas 46 percent of those who were not working when they retired fell into this category.

The survey also provides information on tenure type and house values (for owner-occupiers; table 4.15). About one-third of the survey participants were living in rented accommodation and would correspondingly have no primary housing wealth. Of owner-occupiers, housing wealth values are concentrated between £25,000 and £100,000, with little difference between retirement status or sex.

The final analysis from the Retirement Survey that we want to present in this section concerns how these stocks of saving and wealth are affected by the individual's retirement. Figure 4.10 shows changes in savings since retirement, for those households that had already retired. Only 32 percent of all individuals in the survey had begun to run down their wealth (37 percent for people whose main life job was nonmanual).

Figure 4.11 seems to suggest that households might adjust their behavior at retirement rather than simply smooth consumption over the anticipated change of retirement status, but this does not take any account of income (from pensions, other assets, or benefits) during retirement. To try to pursue further the issue of dissaving during retirement, we can look at FES consumption and income profiles in detail for old households only. We use consumption and income together rather than saving, given the problems that we have outlined earlier in the paper. Table 4.16 presents means of consumption and income by age for two cohorts that are observed to be around retirement age throughout the 22 years of our sample. The income measure we use is the simple FES aggregate of net weekly household income from all sources at the household level, and we correspondingly use total real expenditure at the household level for comparability. For brevity we report every other mean by age, although we should still stress that these are not two-year banded averages.

Table 4.15 **Tenure Type and Housing Wealth by Retirement Status and Sex (%)**

	Men			Women		
	Retired	Not Retired	All	Retired	Not Retired	All
Tenure Type						
Rented	37	28	33	40	28	36
Owned with mortgage	13	30	21	9	26	14
Owned outright	50	42	46	51	27	50
Housing wealth band (owner-occupiers only)						
<25,000	7	7		8	7	
25,000 to 50,000	29	22		28	23	
50,000 to 100,000	34	39		40	39	
100,000 to 150,000	16	17		13	15	
150,000+	13	13		9	14	

Source: Bone et al. (1992).

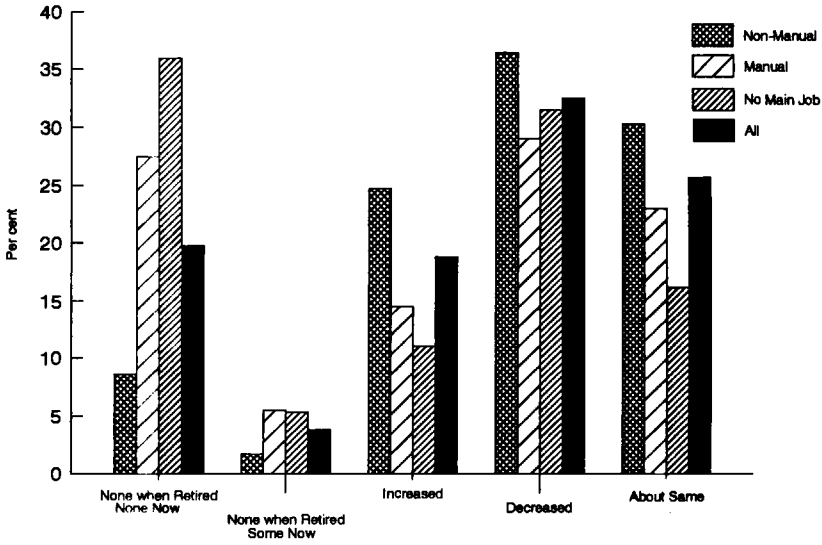

Fig. 4.10 Changes in savings and asset holdings since retirement, by main job type

Source: 1988 Retirement Survey data, see Bone et al. (1992).

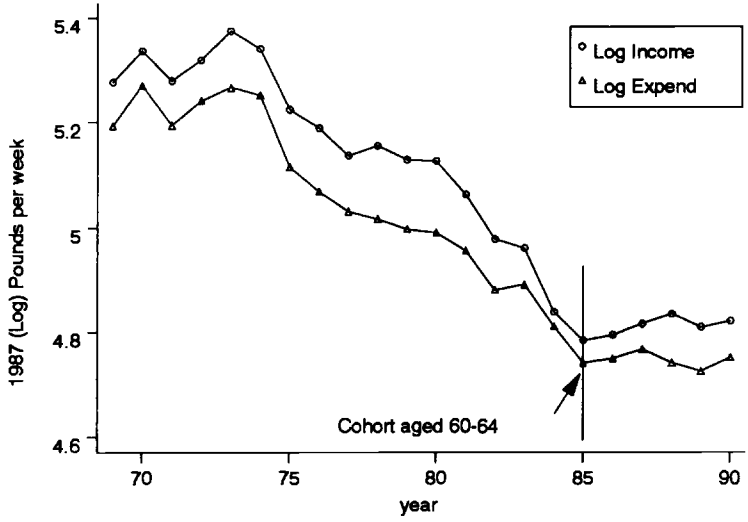

Fig. 4.11 Income and consumption over time: households with head born in 1920–24

Table 4.16 provides strong evidence that consumption tracks income as income falls when households retire. For the breakdown by retirement in the last three rows of the table, we use the FES employment status code to categorize households as either retired or not retired. The drop in both income and expenditure is clearly defined as the retirement proportion jumps upward at the male retirement age. This feature is also apparent in figure 4.11, which presents the time series of the log of income and the log of expenditure for households in a particular cohort. Male heads in the cohort begin to retire in 1985 (females five years earlier), and income and expenditure are very similar around this time. However from then on expenditure falls again and households continue to save. This confirms that the pattern of behavior seen in table 4.1 was not simply a legacy of single cross-sectional data but holds up even when conditioning on the date-of-birth cohort of the household.

The natural extension of this analysis is the more formal consideration of what happens to consumption growth as households retire. Given the nature of this paper we pursue a simple empirical specification without much discussion—more as a way of describing the observed data than a structural model of any significance. Using the time series of pooled cross sections aggregated by date-of-birth cohort, we estimate an exactly aggregated stochastic Euler equation for the log of nondurable consumption growth in which the intertemporal substitution elasticity is made dependent on the demographics of the

Table 4.16 **Income and Total Expenditure by Age and Cohort for Households around Retirement Age**

	Cohort 2				Cohort 3			
Age	Total Income	Total Expenditure	Proportion Retired	Cell Size	Total Income	Total Expenditure	Proportion Retired	Cell Size
55	206.95	199.38	0.00	123	216.82	200.28	0.00	514
57	184.15	179.88	0.02	381	207.40	190.80	0.00	599
59	177.98	164.68	0.01	663	187.69	173.52	0.02	551
61	172.92	165.37	0.10	612	167.85	156.40	0.11	528
63	150.10	139.38	0.14	633	151.27	141.05	0.19	467
65	120.70	116.81	0.63	652	124.85	127.39	0.72	579
67	123.10	114.60	0.67	671	129.29	122.77	0.75	572
69	112.30	105.81	0.71	606	124.44	122.79	0.78	488
71	108.74	107.00	0.75	572	134.14	125.50	0.83	473
73	102.02	90.28	0.80	499	123.23	114.44	0.81	292
75	114.98	100.35	0.86	462	96.69	85.00	0.77	69
All ages 55–75 inclusive:								
Ret=0	162.24	149.40	0.00	6,395	179.28	163.83	0.00	5,861
Ret=1	112.82	109.11	1.00	4,996	122.43	120.84	1.00	4,051
Total	140.11	131.73	0.56	11,391	156.15	146.26	0.59	9,912

Source: FES for 1969–90.

Note: Cohort 2 consists of households with heads born between 1910 and 1914; cohort 3 consists of households with heads born between 1915 and 1920.

household (for a comparison of working age households see Banks, Blundell, and Preston 1994; or Blundell, Browning, and Meghir 1994). Table 4.17 presents our results. The dependent variable is the change in the log of real consumption, and the first group of variables in the table are the changes in the aggregated interactions of demographics and the log of consumption. Other variables are the real interest rate[7] and a dummy to capture the effect of the 1980s.[8] Past consumption growth and its interactions, all lagged two periods (i.e., years), are used as instruments[9] to identify the effect on consumption growth of *anticipated* changes in demographics and in the real interest rate.

The intertemporal elasticity of substitution in this model is simply the parameter on the real interest rate divided by one minus the sum of the parameters on the relevant interactions. Thus for a base household (employed, blue-collar, two or fewer adults, and no children of school age) the elasticity is 0.296. A positive sign on an interaction increases the substitution elasticity from this base number. Predictable changes in retirement status or employment status clearly reduce the level of substitution, whereas households with white-collar heads, multiple adults, or schoolchildren tend to substitute more. This is consistent with our lifetime consumption profiles in section 4.3.1, which were clearly flattened when controlling for household size and numbers of children.

From table 4.17 it could be argued that the retirement variable simply captures an "out of the labor market effect" as the parameter on the interaction of head—retired is very close to that on the interaction with head—unemployed. To try and establish whether this consumption growth effect is due to age or retirement we re-estimate an Euler equation with age and retirement separately affecting the substitution elasticity. The results of this are shown in table 4.18. The retirement effect on intertemporal substitution is still negative (and similar to the unemployed effect), and the age effect is insignificant for households that are both old and retired. Anticipated retirement has much the same effect on consumption growth as an anticipated spell out of the labor market. Therefore the large fall in expenditure at retirement must be partly a consequence of an unanticipated fall in income or some other unanticipated changes in circumstances.

There might be a number of factors that could lead to our observation of less consumption smoothing after retirement. For example, nonzero death probabilities or endogenous attrition within the cohort could well be important when estimating these models. Alternatively, there might be some consumption costs of being employed or an increased focus on health costs as house-

7. For the purposes of this exercise, we use household-specific after-tax interest rates—equal to the building society lending rate if the household has a mortgage, or the building society borrowing rate if the household does not—deflated by a cohort-specific inflation measure (equal to the change in the cohort aggregate of the individual specific Stone log price indices).

8. Blundell, Browning, and Meghir (1994) suggest that this is necessary to capture a decrease in the precautionary motive for saving during this period.

9. Extra instruments are just education, age, and a dummy for white-collar head (lagged twice).

Table 4.17 **Consumption Euler Equation**

Variable	Coefficient	*t*-ratio
dc * child_5_18	0.066	2.120
dc * multiple_ad_household	0.215	2.411
dc * head_retired	−0.189	−2.731
dc * head_white_collar	0.271	2.463
dc * head_unemployed	−0.185	−1.922
real_interest_rate	0.296	2.743
thatcher (1980–89 dummy)	−0.033	−3.985
constant	0.012	1.723

Source: FES for 1969–90.

Table 4.18 **Consumption Euler Equation: Age and Retirement Separate**

Variable	Coefficient	*t*-ratio
dc * child_5_18	0.056	1.713
dc * multiple_ad_household	0.198	1.789
dc * head_retired	−0.244	−2.557
dc * head_white_collar	0.256	2.176
dc * head_unemployed	−0.194	−2.001
dc * head_is_over_65	0.036	0.820
real_interest_rate	0.264	1.966
thatcher (1980–89 dummy)	−0.023	−2.347
constant	0.012	1.171

Source: FES for 1969–90.

holds get older (although in the United Kingdom, as we have said, there is universal coverage by the state for health costs).

Saving Patterns

In the absence of any microdata on the nature of the composition of savings levels for households, we cannot say very much about patterns of saving by household type or income group. The most recent and relevant study for the United Kingdom is that of Saunders and Webb (1988), which used the FRS data set from 1987–88 designed explicitly to investigate household financial behavior. We have used the results of this study as a valuable source in Banks and Blundell (1994), but for completeness we reproduce their results on the pattern of household saving by household wealth level in table 4.19.

4.4 Retirement Income

In this section we consider the incomes of retired households in the United Kingdom. The composition of these incomes will be a clear indication of the

Table 4.19 **Holdings of Financial Assets by Investor's Wealth**

	Investor's Level of Wealth				
	Top			Middle	Bottom
Percentage of Savings Held in:	1%	2%–5%	6%–25%	26%–75%	25%
Bank and building society accounts	34.2	68.4	76.9	83.8	83.5
Equity	42.0	21.1	13.9	6.4	7.5
Gilts and local authority bonds	16.6	1.2	0.3	0.0	0.0
Tax-free National Savings	3.6	2.7	2.4	1.0	0.8
Other National Savings and savings clubs	3.6	6.7	6.6	8.7	8.2

Source: Saunders and Webb (1988).

financial behavior they have engaged in during their working lifetimes. Initially, we look at the structure of total retirement income by age at the beginning and end of our sample—drawing from the analysis of Johnson (1992). Figure 4.12 shows the breakdown of income into four sources. Earnings for the 50–74 age group as a whole was 57 percent of income in 1989, compared with 70 percent in 1971. The biggest drops in this proportion have occurred for those over age 60.

The figure has a number of other interesting features. First, although income from the state continuously rises with age, since 1971 it has become more important for those under age 70 and less important for those over age 70. On the other hand, all age groups have experienced a rise in the proportion of income coming from investments and private pensions. In 1989, these two sources contributed over 40 percent of total income for those over age 65. Johnson (1992) shows that 1971 and 1989 were not atypical years to analyze and, indeed, that these trends were remarkably smooth over the intervening years. Over the same period, total real incomes grew from £206 to £294 for 50–54-year-olds and £71 to £118 for 70–74-year-olds.

Pension income for the retired could be from any of three components. All pensioners are entitled to the basic state pension (subject to having contributed a minimum level of National Insurance) and may receive some earnings-related element also (see Banks and Blundell 1994 for a brief summary of the state pension regulations). If they have contracted out of SERPS at any time, then they could also be receiving private pension payments (either occupational pensions or even, in the future, personal pensions). The basic state pension currently stands at £54 per week in 1992, or £88.70 for a married couple on the husband's insurance only. Occupational pensions can, in theory, provide up to two-thirds of final salary, although they rarely do. Currently there are no personal pensions in payment to retired households.

In table 4.20 below we show the recipiency patterns of the flat-rate state pension by age and sex. The more even spread of women recipients by age band simply demonstrates the fact that women, in general, retire earlier and live longer than men.

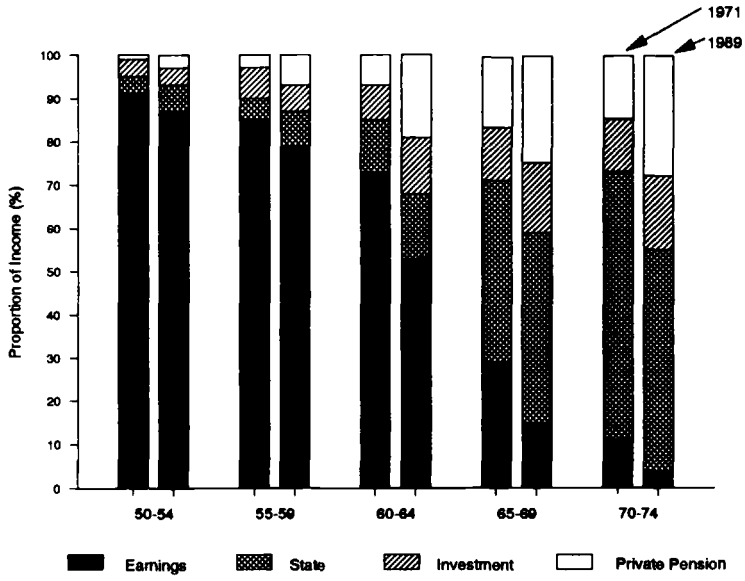

Fig. 4.12 Composition of income by age, 1971 and 1989
Source: Taken from Johnson (1992, table 1.1).

Table 4.20 Age Recipiency Patterns of State Pension, 1990 (%)

Age	Men	Women	Men and Women
60–64	–	16.8	10.9
65–69	31.4	22.4	25.6
70–74	29.1	20.1	23.3
75–79	21.2	17.5	18.8
80–84	12.1	12.9	12.6
85–89	4.8	7.2	6.3
90+	1.3	3.2	2.6

Source: DSS (1992).

Replacement rates for the U.K. state pension naturally decline with earnings since the basic state pension is fixed rather than earnings related. Table 4.21 shows the basic state pension as a percentage of gross earnings for different quantiles of the earnings distribution. Earnings data is from the 1992 New Earnings Survey. Male replacement rates vary from 31.7 percent of average gross male earnings at the bottom decile to just under one-tenth of earnings at the top decile point. Rates are higher for women as average earnings are lower, and higher for married couples on the husband's insurance only as the state pension is higher.

A similar analysis for occupational pensions in payment is undertaken in

Table 4.21 State Pension as a Percentage of Gross Earnings, 1992

Percentile of Gross Earnings	Men	Married Couple on Husband's Insurance	Women
10	31.7	48.9	41.8
25	24.6	38.0	33.5
50	18.2	28.1	25.6
75	13.4	20.7	18.2
90	9.9	15.3	13.9
Mean	15.9	24.3	22.1

table 4.22. We use Retirement Survey data as a source of information on payments and again calculate payments as a proportion of gross earnings from the 1992 New Earnings Survey. Replacement rates are significantly higher for men, even at the median rather than the mean payment, and significantly lower for women.

The number of occupational pension holders as a proportion of the working population has been broadly constant for the last 20 or 30 years—standing at just over 50 percent. In the Retirement Survey, 48 percent of all 55–69-year-olds had some retained rights to at least one occupational scheme and 59 percent had joined an occupational scheme at some time. The major change in the structure of pensions in the current population is the dramatic take-up of personal pensions, which does not appear to have been at the expense of the occupational schemes (of which the proportion of holders has remained constant). Within a very short time (between 1988 and 1990) over 4 million people had taken out personal pension plans. Take-up was highest among young males—approaching 50 percent for 22–26-year-olds—and one-half of all optants were below the age 30. The success of the schemes was undoubtedly attributable in part to the large tax privileges associated with saving in this form and also partly to a sustained advertising campaign by the pension fund providers. Disney and Whitehouse (1992) provide a full summary of the issues and implications of this phenomenon. For whatever reason it did take place, however, the advent of private pension income in the future will be the biggest feature of future retirement incomes in the United Kingdom.

4.5 Conclusions

In this paper we have tried to give the reader a broad overview of household saving behavior in the United Kingdom. In general the data available are of sufficient quality for us to establish a number of results. One of the main points of this paper has been to show that there is evidence of strong date-of-birth cohort effects in much of household financial behavior. Indeed, a lot of the hump-shaped profiles that emerge when looking at single cross-section studies are almost entirely attributable to cohort rather than age effects. We have

Table 4.22 Occupational Pensions as a Percentage of Gross Earnings, 1992

	Men		Women	
Percentile of Gross Earnings	(1)	(2)	(1)	(2)
10	55.1	37.5	34.2	25.0
25	43.9	30.0	28.3	20.7
50	33.4	22.8	22.3	16.3
75	25.1	17.2	16.4	12.0
90	18.9	12.9	12.8	9.4
Mean	29.4	20.1	19.6	14.3

Notes: Col. (1) for each sex reports replacement rates for mean occupational pensions in payment to retired households in 1988 retirement survey (up-rated to 1992 prices) as a percentage of gross earnings in 1992. Col. (2) is similar but uses median pension payments.

placed particular stress on the impact of children and retirement and labor market status on consumption and saving decisions. It is clear that anticipated changes in household composition will affect saving profiles, and also that there is a shift in household saving behavior after retirement that is very similar to that caused by an anticipated spell out of the labor market. However, anticipated changes alone cannot explain the fall in consumption that is observed at this time.

Appendix

Table 4A.1, which follows, shows a cross-tabulation of the numbers of households in each annual FES with the head of household's date of birth falling into a particular range. It includes all households except those resident in Northern Ireland and those that record negative total nondurable expenditures. The process of constructing the pseudocohort data set that we use for the figures in this paper involves taking means (or alternatively medians) within each of these cells. It is important to realize that by doing this we do not need to assume that all the households in each cell are, to some extent, the same. Instead all we require is that the *composition* of the cohort is *constant over the time period involved.* Consequently, we exclude cohorts that may contain very young or very old members.

Table 4A.1 **FES Pseudocohort Data from a Time Series of Cross Sections: Dates of Birth and Cell Sizes over Time**

	Cohort												
Year	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	Total
Earliest	n.a.	1910	1915	1920	1925	1930	1935	1940	1945	1950	1955	1960	
Latest	1909	1914	1919	1924	1929	1934	1939	1944	1949	1954	1959	1964	
Example	Queen Mother	Ronald Reagan	Dennis Healey	George Bush	Margaret Thatcher	Norman Tebbit	John Smith	John Major	Bill Clinton	Graham Gooch	Madonna	Frank Bruno	
1969	2,165	648	614	701	647	611	626	530	284	8	0	0	6,834
1970	1,866	603	493	623	558	594	511	547	404	31	0	0	6,230
1971	2,025	684	583	719	616	592	644	607	523	94	0	0	7,087
1972	1,776	610	565	692	621	610	598	671	569	154	1	0	6,867
1973	1,874	641	534	752	566	569	560	591	655	220	9	0	6,971
1974	1,624	589	537	615	535	549	587	597	618	279	19	0	6,549
1975	1,589	690	534	642	582	582	613	649	713	415	49	0	7,058
1976	1,525	665	557	672	567	559	586	605	704	495	115	1	7,051

1977	1,366	649	566	645	564	580	580	613	785	553	148	6	7,055
1978	1,211	613	548	642	613	529	555	604	752	571	226	8	6,872
1979	1,141	594	460	624	504	507	557	581	708	658	288	29	6,651
1980	1,000	617	525	605	554	539	557	641	741	590	396	45	6,810
1981	999	632	570	695	583	578	603	687	832	670	450	96	7,395
1982	855	599	527	656	614	564	584	626	828	676	575	175	7,279
1983	749	551	522	629	514	525	554	609	736	682	528	237	6,836
1984	676	506	530	685	575	535	530	629	675	698	567	281	6,887
1985	616	545	481	637	555	518	545	569	762	660	604	353	6,845
1986	550	492	511	655	507	501	543	612	706	680	660	497	6,914
1987	473	443	523	682	600	483	546	580	742	692	728	578	7,070
1988	465	458	463	637	540	525	532	587	759	683	650	611	6,910
1989	368	405	482	661	599	534	534	577	721	660	685	663	6,889
1990	328	394	424	587	545	506	500	536	648	623	695	683	6,469
Total	25,241	12,628	11,549	14,456	12,559	12,090	12,445	13,248	14,865	10,792	7,393	4,263	151,529

Note: Cells in which members may be over 65 or under 21 years of age are included in the table for completeness but are dropped in some of the profiles reported earlier (i.e., earnings, pension contributions, and children).

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