

COLLECTING AND USING SURVEY
INFORMATION ON HOUSEHOLD
ASSETS: SOME LESSONS FROM
IRISH EXPERIENCE

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1. Introduction

Collecting data on assets in household surveys is notoriously difficult. This means that researchers often rely where they can on other sources of data, such as estate duty or wealth tax records, when seeking to measure the degree of concentration of wealth or trends in wealth distribution over time. Estate duty records provide the basis for long-term time-series wealth concentration estimates for the USA (Smith 1987, Wolff and Marley 1989) and the UK (Atkinson and Harrison 1978, Shorrocks 1987) and wealth tax records have been used for Sweden for the same purpose (Spant 1987). In the case of Ireland, Lyons (1972, 1975) used estate duty records to measure the concentration of wealth in the 1960s, and Sandford and Morrissey (1985) explored the very limited data published from the short-lived Wealth tax which operated in the early 1970s.

Aside altogether from the problems associated with wealth data from tax records, (discussed at length in the studies just mentioned), generally very little is known about the characteristics of the individuals to whom they refer, and even less about the families or households in which they live. Since it is very often the interrelationships between wealth and a variety of those characteristics which we wish to analyse, this is a major limitation. With household surveys, on the other hand, the value of data on assets is greatly enhanced by the wide range of other information on individuals and households which can be gathered. Some studies have sought to combine the strengths of the two sources by merging and matching tax data onto household surveys in various forms (Wolff 1983, Greenwood 1983), though this too poses particular problems. Here then the focus is on what one can hope to achieve by gathering wealth data in household surveys, discussed in the context of our efforts to do so in Ireland.

The difficulties faced when trying to gather information on assets in a household survey are well-known. The information provided by respondents may often be partial and inaccurate, and the upper tail of the wealth distribution, holding much of aggregate wealth, may be significantly underrepresented. It may in some circumstances

be possible to use stratified samples based on independent information (usually from tax records) to oversample the rich, as in the 1983 and 1989 US Survey of Consumer Finances (Avery, Eliehausen and Kennickel, 1988, Wolff, 1994). Much can be learned from such enhanced samples, although even then response error and non-response rates appear to be particularly high among the wealthy. More often however one has to rely on a random sample, and work within the constraints of a general household survey where wealth is only one of a considerable range of topics to be covered. This has certainly been the case in Ireland, where a serious effort to gather data on assets and debts was made in the general household survey carried out by the Economic and Social Research Institute (ESRI) in 1987. The aim of this paper is to draw some general lessons from that experience.

Section 2 describes the 1987 Irish household survey and the questions on wealth it included, and discusses response and coverage. Section 3 looks at the results, in terms asset holding patterns. Section 4 illustrates how valuable the wealth data has been, despite its undoubted limitations, in a variety of different contexts. Section 5 has some cautionary tales about data on inheritance from the 1987 survey as well as information produced by a more limited set of wealth questions in a survey carried out in 1994. Section 6 summarises the main points.

2. Assets Information in the 1987 ESRI Survey

In 1987 the ESRI carried out *the Survey of Income Distribution, Poverty and Usage of State Services*. The sampling frame was the Register of Electors and the survey was designed to provide a national sample from the population resident in private households. Responses were obtained from 3,294 households, with a response rate of 64% of valid addresses contacted. The sample has been reweighted to correct for non-response and the individual nature of the sampling frame, on the basis of a cross-tabulation of number of adults in the household, urban/rural location, age and socio-economic group of household head using external information from the much larger Labour Force Survey. The overall representativeness of this sample has been validated by comparison with a variety of external information (from the Census of Population, Labour Force Survey, income tax and social security administrative statistics), and it has been used extensively in research on

poverty and tax and social welfare policy in Ireland. (A full description of the survey is in Callan, Nolan *et al.*, 1989, and an overview of that research is in Nolan and Callan 1994).

The survey covered a wide range of topics on respondents and their households, including age, sex, marital status, education, labour force participation and career, income from different sources, attitudes, style of living indicators, social support and psychological distress, and nature of the accommodation and tenure type. It also sought information on the following types of property, assets and savings:

- (i) The value of the house in which the household lived, their tenure status, and details of mortgage if any;
- (ii) For the self-employed, the value of the business;
- (iii) For farmers, the value of the farm;
- (iv) The value of any houses, land or other property, apart from the house/land occupied by the household or included in the farm, together with details of any mortgage outstanding on that property;
- (v) Financial assets: a detailed set of questions sought separate information on each of the following:

the level of balances in bank deposit accounts or credit unions;

the level of balances in building society accounts;

the level of balances in Post Office Savings Bank or Trustee Savings Bank accounts

the level of savings in (State-backed) Savings Certificates or Index-Linked Savings Bonds;

the level of savings in National Instalment Savings;

the value of Prize Bonds owned;

the value of government stocks owned;

the value of shares or securities owned;

the level of savings held in deposit or investment bonds, guaranteed income bonds, growth bonds or other unit linked funds.

The market value of the house was estimated both by a household member and by the interviewer. All the other assets questions were on a personal questionnaire asked of each adult in the household, with the financial assets covered in a separate section at the end of the questionnaire (reproduced as Annex 1 to this paper). In asking

about deposit accounts, joint accounts with other household members were distinguished. respondents were asked their own estimate of the current value of stocks, shares and investments in various types of bonds; where they could not put a value on the latter, details of amounts invested and timing of those investments were sought. While this data provides an opportunity to look at asset-holdings at individual level, here we concentrate on household-level aggregates.

Where some but incomplete information was provided by respondents, imputations of asset values were made where possible. For example, some self-employed did not give a value for their business but did annual profit and/or turnover, and the approximate value of the business could be estimated assuming a profit/value relationship similar to that observed for full-responding cases. Similarly a small number of farmers did not give a value for their farm, but this could be estimated on the basis of acreage, activity, output etc. Out of 3,294 households responding to the survey, 102 or 3% refused to respond to the entire section on financial assets (though most of these did provide house value and, where relevant, value of farm or business).¹ A further 103 or 3% did not or could not respond to at least one of the questions on financial assets, although responding to some. Table 1 shows the position of these refusing or non-responding households in the household income distribution.

This shows that those refusing the entire section are disproportionately drawn from the upper income deciles, with about 34% in the top two deciles and 61% in the top half of the distribution, though they are by no means simply concentrated at the top. Those failing to respond fully to the financial assets questions are more evenly distributed throughout the income distribution, with 26% in the top two deciles and 51% in the top half, though 17% are in the second decile from the bottom which has a high proportion of elderly people.

¹ Where one spouse provided information on financial assets and the other did not, a judgement was made on a household-by-household basis as to whether the information provided could reasonably be taken to represent the position of the household.

Table 1: Position in the Income Distribution of Households Refusing or Failing to Respond to Questions on Financial Assets

Decile	Refused entire financial assets section	Refused/Didn't know on one or more questions
	%	%
Bottom	5.7	3.2
2	10.9	16.6
3	5.2	8.4
4	6.0	9.5
5	10.9	11.7
6	4.3	8.7
7	11.6	5.4
8	11.7	10.2
9	20.2	10.7
Top	13.5	15.6
All	100.0	100.0
Number of cases	102	103

Source: Nolan (1991) Table 2.3, p. 15.

Assessing the reliability and representativeness of the survey responses on property and savings/financial assets is difficult because of the paucity of external information against which it can be validated. Beginning with the data on house values provided by respondents, the percentage of house-owners in the survey is similar to that in other surveys and in the Census of Population - with almost 80% of households owner-occupiers. Comparing respondent's valuations with those made by interviewers the two are generally quite close: respondents on average gave estimates which were about 6% higher, but much of this difference was at very high values where respondents should be better informed than interviewers. For farm land, the distribution of farms by size in the sample can be compared with external information from a national farm survey and is very close. The very largest farms are however underrepresented in the survey, with only 0.5% of sample farms being over 100 hectares compared with 1.5% in the national statistics. No external information exists against which the value of non-farm businesses can be assessed.

Table 2: Distribution of Farms by Size, ESRI 1987 Sample and National

size (hectares)	1987 ESRI sample %	national %
< 10	20.1	18.4
10 < 20	26.0	28.0
20 > 30	18.0	16.3
30 < 50	14.5	13.6
50 < 100	6.7	6.9
> 100	0.5	1.4
hill farms	14.1	15.3
All	100.0	100.0

Source: Nolan (1991) Table 2.1, p. 9.

Turning to financial assets, external information on total household holdings is available only for bank deposits. Central Bank statistics show that 40% of bank deposits are held by the personal sector, most of which will be households. It is believed that a higher proportion of deposits in building societies and the Post Office and Trustee Savings banks are personal rather than corporate sector. On the basis of published data on aggregate deposits, taking 40% of bank deposits and making assumptions about the proportion of other deposits attributable to households, a figure of about IR£5,000 million appears to represent a reasonable estimate of total personal deposits at the time of the survey. Grossing up the sample responses to the implied totals for all households produces a figure of IR£ 2060 million, about 41% of the external total as shown in Table 3. There may be some imprecision in the definition of

Table 3: Comparison of Grossed-up 1987 ESRI Sample Survey Aggregates for Holdings of Financial Assets with External Totals

Financial asset type	Grossed-up sample total	External total	sample as % of external
	£m	£m	%
Bank, building society, Post Office and Trustee Savings Bank deposits	2060	5000 ^c	41
Savings Certificates and Index- linked Savings Bonds	200	901	22
National Instalment Savings	38	108	35
Prize bonds	25	78	32
Government securities	94	340 ^c	28
total	2417	6427 ^c	38

note: shares and investment bonds etc. not included

Source: Nolan (1991) Table 2.2, p. 11.

personal versus business accounts, but even taking such factors into account the sample appears to cover less than half of all household savings in the form of bank/building society deposits.

External totals are published for amounts in Government savings schemes, namely Savings Certificates, Index-linked Savings Bonds, National Instalment Savings and Prize Bonds, most of which are likely to be held by the personal sector. As Table 3 shows, grossed-up sample totals represent a smaller fraction of these savings than they did of bank deposits. The only other asset type which can be validated in this way is government securities. Published data shows the breakdown of total domestic holdings of gilts by sector, and as Table 3 shows the grossed-up sample figure for the value of gilts held by households is about 28% of total personal sector holdings. No such published data is available on the value of personal sector holdings of stocks and shares, or of investments by the personal sector in unit linked funds and similar savings media. Some downward bias in sample respondents' valuations could be expected due to failure to take accrued interest or increases in values over time into account. However, the fact that the data has been obtained through a general household survey is clearly the primary reason for the low coverage, and it is not particularly surprising in the light of experience elsewhere.

Without attempting an in-depth survey, some comparative figures from experience internationally help to illustrate the point. Avery, Eliehausen and Kennickel (1988) document that in the 1983 US Survey of Consumer Finances, when carried out as a standard general household survey, grossed-up sample totals for deposits in savings accounts came to 44% of independent totals, stocks and shares to 47%, and Government Savings Bonds and other Government bonds to 31% of independent totals. Similar findings were produced by surveys of asset-holdings in the US and UK during the 1950s (see Ferber 1965, Hill, Klein and Shaw 1955, Lydall and Tipping 1969, Atkinson and Harrison 1978). For example, the 1953 Oxford Savings Survey produced grossed-up estimates of bank and Post Office deposits which came to 52% of external totals, building society deposits came to only 24%, and National Savings Certificates came to 50% of external totals.

This under-representation comes about first because of the concentration of wealth, particularly certain forms of wealth, in the hands of a very small number right

at the top of the distribution. A general sample survey will have difficulty adequately representing any small group. Secondly, non-response appears to be relatively high among the self-employed, the retired and the wealthy, compounding the problem of adequately capturing the upper wealth groups. There is also considerable evidence of under-statement and mis-statement of wealth holdings by those who do respond. This may arise from a deliberate desire to withhold information, or from genuine difficulties which arise in remembering accurately and making an accurate valuation. Ferber (1965) compared survey responses with external information on the households surveyed, and found that failure to report holdings entirely was a much more significant problem than understatement or errors by those who do report holdings of particular asset types.

The study by Avery *et al* (1988) was able to shed valuable light on the factors leading to under-representation of wealth holdings in household surveys by over-sampling in the 1983 Survey of Consumer Finances those at the very top of the distribution, on the basis of data from income tax files. The resulting sample was then reweighted so that those high-income households were attributed their appropriate weight in the population as a whole, and the wealth holdings of this enhanced sample compared with the standard survey without enhancement. The results showed that the enhanced sample captured a substantially greater proportion of external totals for those assets concentrated towards the top. Enhanced and standard samples gave very similar estimates of the total value of housing wealth which actually exceeded external totals, and the enhanced sample continued to under-represent deposits very substantially. However, the enhanced sample provided an estimate of total household holdings of stocks and shares which was 70% higher than the standard sample and quite close to the external total. Holdings of Government stock were 38% higher in the enhanced sample, and State and local government bond holdings were over twice as high as in the standard sample. A slightly higher proportion of the value of businesses of the self-employed was captured in the enhanced sample, though here much of the problem appears to be the inherent difficulty in valuing such businesses and distinguishing personal from business assets. Avery *et al* conclude that their survey with enhancement at the top of the distribution generates adequately representative totals and distributions of household wealth, but that without such enhancement the survey

would seriously underestimate total wealth and give a misleading picture of its distribution, significantly underestimating its concentration at the top.

This evidence needs to be kept to the forefront in using and interpreting wealth data from a general survey such as the 1987 ESRI one, which did not have any over-sampling at the top. Information on some types of asset data will be more reliable and these assets will be more adequately represented in the survey than others, with housing and land a good deal more reliable than financial assets, and with the substantial proportion of aggregate wealth held by those at the very top very seriously underestimated. With this in mind we now discuss briefly the asset-holding patterns shown by the 1987 survey. The aggregate wealth concept employed is gross assets minus principal residence debt (as in Nolan 1991). Some additional data not described here was also obtained on non-mortgage debt, life assurance-related assets and occupational pension entitlements, which has allowed alternative wealth concepts to be analysed elsewhere (Honohan and Nolan 1992).

3. Asset Holdings in the 1987 ESRI Survey

Table 4 shows first the composition of the wealth holdings reported by households in the 1987 survey, and the percentage of households reporting holdings of each asset type. The value of housing wealth is calculated net of outstanding mortgage, with that debt estimated on the basis of details provided about the amount originally borrowed, repayments and term. With almost 80% of Irish households purchasing rather than renting, the value of investment in their principal residence comprises 55% of total wealth reported in the survey. Farm land is held by 15% and constitutes 26% of total reported wealth. About 5% of households had a self-employed member with a business, and the reported value of these businesses comprised 7% of total reported wealth. Other property, such as housing other than the principal residence and land other than that being farmed by the household, was reported by 5% of households and comprised 4% of the total in value.

Financial assets in total came to 8% of total reported wealth. Just over half of all households reported having bank or other deposits, and 43% reported some form of state-backed savings scheme but with the average amount held being much lower than the average deposit. Less than 2% of all households reported holding gilts, 4%

reported holding equities, and 2% reported having investment bonds etc. Despite having relatively high mean value for holders compared with deposits, stocks, shares and investment bonds etc. accounted for only 2% of total reported wealth in the survey. Overall, just under 90% of sample households reported some form of asset holding.

Table 4: Composition of Reported Wealth and Percentage of Households Reporting Holdings, by Asset Type, 1987 ESRI Sample

Asset type	% of households reporting holding	mean value for those reporting IR£	% of total reported wealth
Property			
Principal residence	78.5	26,221	55.0
Business	5.2	50,520	7.0
Farm land	15.2	63,154	25.7
Other property	5.5	28,074	4.1
Financial Assets			
deposits	42.7	605	5.4
government savings	1.7	5,035	0.7
gilts	4.2	8,301	0.2
equities	2.0	15,654	0.9
investment bonds, etc.	5.0	930	0.8
Total	88.5	42,310	100.0

Source: Nolan (1991) Tables 3.1 and 3.2, p. 21-22.

Table 5 shows the way in which wealth holdings differed across the income distribution, categorising households by disposable income decile (without any adjustment for household size etc. via equivalence scales). The absence of an upward trend in the share of total wealth held as one moves up the income distribution, at least until the third decile from the top, is striking. The lowest share of total wealth, 5%, is held by the third decile from the bottom, with the bottom two deciles having as great a share as the fourth and fifth deciles. The top decile does however hold 22% of total wealth.

The table also shows the composition of the wealth held by the different deciles. Housing (i.e. principal residence) is the most important form of wealth holding for all the deciles, and accounts for over half the total wealth of the decile for all

except the top. Farm land is the next most important form of wealth holding throughout the distribution, but accounts for a larger share of the wealth of the bottom decile than any other. Taken together, owner-occupied housing and farm land account for 93% of the wealth held by the bottom decile and 80% or more of that held by each of deciles 2-8. For the top two deciles these forms of wealth holding, though dominant, account for only 76% and 65% of total reported wealth.

Wealth held in the form of businesses is most important at the top, accounting for almost 20% of the wealth of the top decile. Savings in the form of bank and other deposits or government small savings media account for 5-8% of total wealth throughout most of the income distribution. Gilts, equities and investment-linked funds are more important in the top two deciles than elsewhere, but even there account for only 3.5-4.5% of total reported wealth.

Table 5: Distribution of Reported Wealth and Its Composition by Income Decile, 1987 ESRI Sample

income decile	mean wealth IR£	% of total wealth	composition of decile's wealth: %				
			home	business	farm	deposits, govt. savings	gilts, equities
Bottom	32,484	8.7	54.5	3.1	38.3	3.0	0.1
2	29,983	8.0	57.0	0.5	27.5	7.5	0.6
3	20,066	5.4	65.3	1.2	23.3	4.9	0.9
4	25,575	6.8	58.2	0.9	32.7	5.8	0.2
5	31,699	8.5	53.1	6.4	31.2	5.4	1.9
6	35,371	9.4	57.4	3.8	23.1	5.7	2.0
7	32,922	8.8	66.4	4.4	20.3	5.6	0.8
8	39,983	10.7	60.1	3.3	25.5	6.6	1.7
9	46,155	12.3	58.5	5.9	17.9	8.4	4.6
top	81,713	21.8	41.0	19.6	23.8	6.7	3.4
all	37,441	100.0	55.0	7.0	25.7	6.1	1.9

Source: Nolan (1991) Tables 3.3 and 3.4, p. 24 and 25.

The weakness of the income/wealth relationship may be surprising. Income here is being measured over the past week or month, except for income from self-employment and investments where the average over a year is taken. Wealth holdings will be influenced by many other factors over a long period, and the implications of the observed income/wealth relationship for current living standards are among the issues

discussed in the next section. First, though, it is useful to look at the pattern of wealth holding by age and social class, and at the overall concentration of reported wealth.

Table 6 shows mean wealth rising sharply with the age of the household head, peaking in the 45-64 age groups, and then declining sharply. As a result, households with a head aged between 45 and 74 have 60% of reported wealth though they account for half of all households. In terms of composition by asset type, housing makes up about 55% of wealth for all age groups except 75 and over, where it accounts for more than two-thirds of reported wealth. Farm land is least important for that elderly group, wealth in the form of businesses is most important for the 25-54 age range, and financial assets are most important for the older age ranges.

Table 6: Distribution of Reported Wealth and Its Composition by Age Group, 1987 ESRI Sample

age category	mean wealth IR£	% of total wealth (% of sample in brackets)	composition of age group's wealth: %				
			home	business	farm	deposits, govt. savings	gilts, equities
under 25	12,024	0.6 (2.0)	55.6	-	25.7	7.8	-
25-34	23,333	13.9 (22.3)	52.2	10.3	23.7	5.7	1.0
35-44	39,790	19.7 (18.5)	52.7	8.8	27.9	4.7	2.4
45-54	47,314	21.1 (16.7)	55.4	8.4	25.2	4.3	1.1
55-64	46,687	22.2 (17.8)	54.7	6.6	27.2	7.1	2.0
65-74	42,053	17.2 (15.3)	55.7	3.0	25.0	8.6	3.7
75 or over	26,651	5.2 (7.3)	67.8	1.3	20.0	8.0	1.3
all	37,441	100.0	55.0	7.0	25.7	6.1	1.9

Source: Nolan (1991), Tables 3.5 and 3.6, p. 28.

As far as the relationship between wealth and social class is concerned, Table 7 shows the pattern with the six-category social class schema adopted by the Irish

Central Statistics Office.² Mean wealth rises steadily as one proceeds up the class hierarchy, with the highest class having about five times the mean wealth of the lowest one. The semi-skilled and unskilled manual classes do have significant reported wealth, but the top two classes, with 22% of sample households, hold 40% of the reported wealth. The table also shows substantial differences in the composition of wealth holdings across classes. Wealth in the form of housing forms 84% of the wealth of the unskilled manual class and 62-67% for the semi-skilled and skilled manual classes, but only about 46% for the top three classes. Businesses make up a much higher proportion of the wealth of the highest class than any others, and gilts and equities are also most important for that class. Farm land is most important for the lower professional and intermediate non-manual classes. (This reflects the way farmers are classified by social class on the basis of farm size, with only farmers owning over 200 acres placed in the highest class).

Table 7: Distribution of Reported Wealth and Its Composition by Social Class, 1987 ESRI Sample

social class	mean wealth IR£	% of total wealth (% of sample in brackets)	composition of social class's wealth: %				
			home	business	farm	deposits, govt. savings	gilts, equities
unskilled manual	75,347	6.8 (9.9)	84.3	1.4	5.6	4.4	0.7
semi-skilled manual	60,928	12.5 (12.0)	66.8	6.8	18.4	5.7	0.9
skilled manual	48,308	18.7 (17.7)	62.3	7.0	21.8	5.7	0.4
intermediate non-manual	29,582	22.7 (23.8)	47.3	1.8	40.2	5.6	1.3
lower professional	22,980	19.5 (20.5)	44.9	4.8	38.2	6.5	2.2
higher professional	15,949	19.8 (16.1)	48.0	18.4	14.3	6.5	5.6
all	37,441	100.0	55.0	7.0	25.7	6.1	1.9

Source: Nolan (1991) Tables 3.8 and 3.9, p. 30-31.

² Very similar results are seen with the class schema developed by Erikson and Goldthorpe and widely used in cross-country comparative class analysis.

We will not attempt to summarise here the results of detailed analysis of the inter-relationships between wealth and income, age and class, and of the patterns by asset type (see Nolan, 1991). It is of interest though to look at the overall distribution of wealth in the sample. When households are ranked by level of reported wealth, Table 8 shows that the bottom 70% of households hold 28% of total wealth, the next 20% hold 12%, and the top decile by wealth holds 42% of all reported wealth. Looking within the top decile to the top 1% of wealth-holders, these have 10% of total wealth. The composition of wealth varies very substantially with level of wealth itself, as the table also shows. For the bottom 70% of households their house accounts for 87% of total wealth. For the top decile, by contrast, only 27% of wealth is in the form of owner-occupied housing, with farm land significantly more important at 45%. For the top 1% of wealth holders, the net value of their house accounts for only 16% of total wealth, farm land still makes up 46%, but businesses now account for 23%. Even for these top wealth holders in the sample, reported financial assets only make up about 9% of total wealth.

Table 8: Distribution of Reported Wealth and Its Composition by Wealth Quantile, 1987 ESRI Sample

wealth decile	% of total wealth	composition of group's wealth: %				
		home	business	farm	deposits, govt. savings	gilts, equities
bottom 7 deciles	28.5	86.7	1.1	3.9	6.2	0.5
deciles 8 and 9	11.9	64.5	4.2	18.7	7.4	1.3
top 10%	42.3	27.0	12.9	45.2	5.3	3.5
top 1%	10.4	15.5	23.0	45.9	2.9	5.6

Source: Nolan (1991) Tables 9.1 and 9.2, p. 69-70.

In terms of the degree of concentration of different asset types, this means that the top 1% of wealth holders hold 19% of all sample wealth in the form of farm land, 33% of business assets, and 29% of gilts, equities and investment bonds etc., though only 5% of total reported deposits and 3% of wealth in the form of housing.

It is clear both from experience elsewhere and the validation of the 1987 survey against external aggregates (where possible) that the distribution of wealth in the survey cannot be relied on, but it could perhaps serve as a point of departure in assessing the likely degree of concentration of wealth. One can for example make extreme assumptions about the missing wealth, on the basis of the limited information available. Suppose for example that the survey was reasonably accurate in measuring wealth held in the form of housing and farm land and their distribution, and that it missed one-third of the value of businesses, half of total deposits, and two-thirds of government-backed savings schemes, gilts, equities and investment bonds. If all this missing wealth was held by the top 10%, then the share of that group in total wealth would rise from 42% to about 50%. If it was all (less realistically) attributed to the top 1%, the share of that group would rise from 10% to about 20%. If on the other hand one assumes that the "extra" wealth of each asset type is no more concentrated than the observed wealth of that type in the sample, then the share of the top 10% still rises to about 18%, because this group already hold a high proportion of the asset types which are most heavily under-represented. The share of the top 1%, on the other hand, now rises to only 14%. Although the share of the top 10% is not very sensitive to the assumption about where the "missed" wealth is attributed, it does vary with the scale of that "missed" total, which is based on extremely patchy evidence. It would also be sensitive to the possibility that some wealth in the form of housing and farm land right at the top has been missed.

This highly speculative exercise leaves the share of the top 10% in Ireland at about 50%, and the share of the top 1% in the range 15-over 20%. It is extremely difficult to make meaningful comparisons with results for other countries, because of differences in concepts, coverage, etc., but some household-based estimates may serve some purpose in providing a broad background. Avery *et al's* estimates for the distribution of gross assets minus principal residence debt -closest to the wealth concept measured in the Irish survey - among US households in 1983 show the top 10% with 65% of total wealth and the top 1% with about 30%. Kessler and Masson (1987) show the top 1% of French households in 1977 holding 13-19% of net worth. They also quote figures for the share of the top 1% of households in the early 1970s as 32% for the UK, 28% for Belgium and Germany, 25% in Denmark, 20% in Canada and 16% in Sweden. Wolff (1991) quotes other estimates for the same period as 24%

for the UK, 29% for the USA, and 21% for Sweden, and notes that the share of the top 1% appeared to stabilise or rise in those countries from then to the early 1980s, with rising stock markets a contributory factor. Apart from anything else, differences in timing can therefore be important.

While the illustrative figures on wealth distribution do not look wildly implausible, then, the survey evidence clearly does not provide a firm basis in itself for assessing Ireland's degree of concentration in comparative terms. Although a topic of great interest, that is of course not the only purpose for which wealth data can be employed, and it was not the objective we had in mind in seeking to measure household wealth holdings in the ESRI survey. In the next section we describe some of the areas of research where the survey information on wealth holdings, with all its limitations, has proved very valuable.

4: Using the Wealth Data

In this section we give three examples of uses to which the wealth data gathered in the 1987 ESRI survey has been put. The first is in studying portfolio choice, the second in looking at property tax options, and the third is in analysing household living standards and deprivation levels.

Modelling Portfolio Choice

The wealth data in the 1987 survey was used to analyse the structure of Irish household portfolios and how this varies with household characteristics in Honohan and Nolan (1993). Basing such analysis on a single cross-section has limitations, of course, in particular in being unable to incorporate the impact of changing asset prices, but the value of such exercises has been demonstrated in Uhler and Craggs (1971), Friend and Blume (1975) and Feldstein (1976) using US survey data, and Shorrocks (1982) using estate duty data. The household characteristics included as potential explanatory variables were total wealth, income, age, urban/rural location, sex, socio-economic group and labour force status. The allocation between financial and non-financial wealth, the allocation within financial assets between deposits and "sophisticated" or risky assets, and within "sophisticated" assets between equities and other assets were all studied.

