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Working Paper

Income and Wealth in the Irish Longitudinal Study on Ageing

IZA Discussion Papers, No. 7393

Provided in Cooperation with:

IZA – Institute of Labor Economics

Suggested Citation: O'Sullivan, Vincent; Nolan, Brian; Barrett, Alan (2013) : Income and Wealth in the Irish Longitudinal Study on Ageing, IZA Discussion Papers, No. 7393, Institute for the Study of Labor (IZA), Bonn

This Version is available at:

<https://hdl.handle.net/10419/80638>

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May 2013

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ABSTRACT

Income and Wealth in the Irish Longitudinal Study on Ageing^{*}

Between 2009 and 2011, data were collected under the first wave of The Irish Longitudinal Study on Ageing (TILDA). Over 8,500 people aged 50 and over and living in Ireland were interviewed on a wide range of topics covering socioeconomic and health issues. Our primary goals in this paper are (a) to present details on two of the variables which will be of particular interest to economists, namely income and wealth and (b) to discuss issues in relation to their use, in particular with respect to missing data. We describe how the income and wealth data were collected. We assess the quality of the income data by comparing them to those obtained through the European Union Statistics on Income and Living Conditions (EU-SILC). We find that the distribution of income in the TILDA sample resembles closely that found in a comparable sample from the EU-SILC. We undertake two pieces of analysis, by way of demonstrating potential applications of the data. First, we examine the joint distribution of income and assets and find that there is a small but non-negligible number of people who have low levels of income but high levels of assets and another similarly sized group in the opposite situation. Second, we consider the relationship between income/wealth and life satisfaction, another variable captured in TILDA. We find that income and housing wealth both affect life satisfaction but that the influence of income is much larger.

JEL Classification: D31, J14

Keywords: income, wealth, ageing

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^{*} We gratefully acknowledge valuable comments from participants at TILDA's Scientific Advisory Board Meeting 2012.

Section 1: Introduction

Between late 2009 and early 2011, fieldwork was conducted on Wave 1 of The Irish Longitudinal Study on Ageing, TILDA. The fieldwork involved the collection of data on a nationally-representative sample of over 8,500 people aged 50 and over and living in Ireland. The data were collected through three routes – a computer-assisted personal interview (CAPI), a self-completed questionnaire (SCQ) and an extensive health assessment (HA). Through TILDA, Ireland has joined a growing international trend through which the issues associated with an ageing population are studied in part through a longitudinal study of the older population.

Given that data are collected through three routes, the amount of data which is available for each individual in the sample is large and covers a wide range of topics. The CAPI questionnaire was used to collect information on a full range of socio-demographic issues, including topics such as education, labour force status, income and wealth. Questions were also asked about family structure, migration history, health status (mental and physical), retirement planning and healthcare utilisation. The SCQ covered more sensitive topics such as alcohol consumption, quality of relationships and childhood traumas including physical and sexual abuse. Finally, the health assessments were used to collect objective information on the health status of each individual and included tests related to cardiovascular health, optical health, cognition and gait and balance. The existence of this new data, and its augmentation through the collection of subsequent waves, opens up a range of important research opportunities across a range of disciplines.

In this paper, our first objective is to present details on two of the variables which will be of particular interest to economists, namely income and wealth. While income is collected in the EU Survey of Income and Living Conditions (EU-SILC), wealth data at the individual or household level has not been collected in Ireland since the late 1980s. This makes the TILDA wealth data rare within Ireland. More broadly, as the TILDA data also contain huge amounts of information on health status and life satisfaction, the potential to use the data to analyse the links between economic circumstances and health and well-being is enormous.

The paper is structured as follows. In Section 2, we describe how the income and wealth data were collected, covering the questions asked and describing the use of unfolding brackets as a way of reducing non-response. We also discuss which measure of household income within the survey appears to work best, given the difficulties which arise due to non-response. In that section, we report on tests of the validity of the data. The validity is tested

by comparing descriptive statistics from the TILDA data with those from external sources and by exploring whether the TILDA data produces reasonable measures of quantities such as Gini coefficients. Our aim in this section is partly to inform other researchers in Ireland, and elsewhere, of the existence and quality of the income and wealth data.

In Section 3, we move onto our second objective which is to illustrate some potential uses of the data through two applications. The first application involves an exploration of the joint distributions of income and wealth. As the removal of universal entitlements for older people is increasingly discussed, the question arises of how to implement means testing taking account of both income and wealth. The second set of applications explores the relationship between income and wealth on the one hand and well-being and health on the other. Since Easterlin (1974), economists have become more interested in the link between material well-being and psychological well-being. Similarly, work by Smith and others (for example, see Smith, 2007) has shown a link between material well-being and health. The TILDA data is ideally suited to expanding this work, given that information on income and wealth is included and also various measures of well-being, mental health and physical health.

Section 2: Data description

Collection of Income

Before describing how income and wealth data were collected in TILDA, it is important to outline one key feature of how the sample was generated. As no population register exists in Ireland, it was necessary to call on houses to establish if there was a person aged 50 or older resident. If there was, this household was eligible and all people aged 50 or over in the household were interviewed (where possible), along with spouses or partners aged under 50. In this way, the TILDA sample includes multiple people from the same households and this is relevant to generating data on household income.

During the TILDA CAPI interview, all respondents were asked a series of questions about their sources of income covering income from employment, social welfare, pensions, investment incomes and other sources. The questions were taken directly from the recent versions of the European Union Statistics on Income and Living Conditions (EU-SILC) questionnaire. EU-SILC is a pan-European survey conducted annually in most EU countries which collects extremely detailed information about different sources of income and also a limited number of demographic variables such as household structure and education levels.

By using the same questions as in EU-SILC, it is possible to compare the data that is generated and we exploit this below.

From the perspective of the household, information on income at that unit of analysis can be arrived at in two ways. First, the income information provided by each individual in the household can be aggregated. Second, as a single comprehensive question was asked about net household income, it is also possible to use this as the measure of household income. Given the two possible routes to a measure of household income, the question arises of which should be used and the choice is not simple. With the latter approach, the non-response problem is far less severe. However, and as discussed at greater length below, using the single comprehensive household income question seriously under-estimates disposable household income when compared with external data.

The alternative approach to the single comprehensive household income question is to take every source of individual level gross income. The final amount of household disposable income is then calculated by aggregating gross income from all sources across all of the individuals in the household and then estimating income net of tax and social insurance contributions. The different sources of gross income are: employee income, self-employment income, pension income (both private and from occupational schemes), investment income, rental income as well as income from all social welfare schemes in operation in Ireland.

The Irish tax system is not fully individualised so in order to calculate net household income it is crucial to have income information on both partners in the case of couples. Other information pertinent to the tax system was also used in the calculation of household income net of tax and social insurance contributions. For example, TILDA collects detailed information on pension contributions which are tax deductible. Furthermore, household structure, housing tenure type and employment type enabled us to assign the appropriate tax credits. For example, PAYE workers receive a tax credit in contrast to self-employed people.

For both approaches to measuring household income, a final equivalised household disposable income was created to account for differences in household size. Equivalisation takes economies of scale in consumption into account when describing the per person standard of living within a household. Different equivalisation weighting schemes are used internationally. Here we used the scheme most often used in Ireland which assigns a weight of 1 to the head of household, 0.66 to all subsequent household members aged fourteen or older and 0.33 to those aged younger than fourteen years.

Wealth data

Wealth is collected in a much more straightforward manner than income. To shorten the interview and under the assumption that wealth is pooled within the household, the wealth questions were asked only to a nominated “financial respondent” who declares that they are the best informed member of the household on matters relating to wealth. In slightly over 60% of households with two respondents the financial respondent is the male partner.

Initially the financial respondent is asked if they or their partner hold certain types of assets. The assets are: owner occupied residential property, savings on deposits, financial assets, cars, non owner-occupied housing and other types of assets such as a business or land. Flash cards are used so that respondents are sure as to what to include. They are then asked to put values on different categories of assets that they or their partner own. Questions relating to debt are also asked and the distinction between mortgage and non-mortgage debt is made so information on both types of debt is collected.

A major problem with income and particularly wealth data is the level of non-response. To reduce non-response to the income and wealth questions the technique of “unfolding brackets” was used. Those who refused or claimed not to know the relevant amount in relation to an income or wealth question were asked a follow up question which gave the option of providing a banded answer rather than a point estimate. Table 1 shows that the use of unfolding brackets was a relatively successful interview strategy as the non-response was reduced significantly, especially in relation to housing wealth¹. The results presented in this paper use the mid-points of the unfolding brackets as the inputted data points for those who did not answer the original questions. Furthermore, income from assets has been inferred by applying a rate of interest to relevant wealth stocks when interest earned is unknown.

Extending the idea of using incomplete/partial information further, there are a number of other imputation options open to the researcher who wishes to reduce the occurrence of missing values. Cameron and Trevedi (2005) provide an introduction to imputation methods such as single and multiple imputation. One should be aware that these techniques often rely on un-testable and, in the case of income and wealth, perhaps questionable assumptions that the missing values are occurring at random and are unrelated to the true value of the observation. This present paper does not use these imputation method but prospective researchers should consider them.

¹ An error in the questionnaire omitted the unfolding bracket in relation to savings on deposit. This results in a much higher rate of missingness for this item than would have otherwise been. The mistake has been rectified for wave 2.

Finally it is worth noting that the income and wealth questions are located towards the end of the CAPI interview. There is a concern that respondents may be less willing to discuss this topic, which for some is sensitive, at the end of a very lengthy interview. However, the feedback from focus groups of respondents and interviewers is that by the end of the interview the interviewer has built up a rapport with the respondents and that sensitive topics are more easily discussed.

Defining the sample for the analyses presented below

In order to assess the quality of the data (relative to EU-SILC), and so that we can undertake some applications of the data, we need to define the specific sub-sample which will be used. We want to restrict the analyses to cases where we have no missing data so we need to explore which measure of household income to use. As mentioned above, the single comprehensive household income question has a far lower rate of missing observations than when using the aggregated sources of gross income approach as the latter approach is highly data intensive. Using the single comprehensive household income question results in a sample of 5342 that is very similar in its demographic characteristics to the original sample (see the first and last column of Table 2). However, as we shall see in the next section, the single comprehensive household income question tends to underestimate household disposable income.

Using the aggregated sources of income approach, a large number of observations are lost and for a number of reasons. First, in many cases households were eliminated from the sub-sample used here as only one eligible person decided to respond to the questionnaire while their partner chose not to participate. In those cases, we do not have enough information about the missing spouse's circumstances to construct a measure of household income through the aggregation route. Also a small number of observations (150) were dropped where there are more than two people aged fifty and over in the household. These are generally households where children and parents, all of whom are fifty years old or older, are living together. Calculating their tax bill is problematic and would involve making assumptions that could not be tested.

Second, not all respondents answered the individually-based financial information questions in the survey be they in relation to income or wealth. Thirdly, in a small number of cases, clearly implausible answers were given and so these observations are not used in our analysis. These were mostly people who claimed to be making pension contributions in

excess of their income. Given that pension contributions are taken into account when calculating disposable income we felt it appropriate to drop these observations².

Despite the large number of lost observations, one can see from the first column and second last columns of Table 2 that the final sample from the aggregated sources of income approach closely resembles the nationally representative original TILDA sample when looking at the distribution of key demographic variables such as education, age group, geographic location and gender. However in relation to household structure there are some differences as our sample under-represents married couples due to the lack of full information on household finances within some married couples.

No detailed income information was collected in relation to household members other than those aged fifty or over and their spouses. The final column of Table 2 shows that children are present in one third of households in the sample. In 59% of the cases, these children are out of the labour force as they are unemployed or in education. For those unemployed, an individual income equivalent to the 2010 rate of job seeker's benefit was imputed. For the remaining minority (41%) of those who are living with their parents and who are employed, an income of €355 (for non-university graduates) and €496 (for university graduates) was fitted as these were the net incomes for those of similar ages and education levels and who are still living with their parents (where one of whom is over the age of fifty) in the EU-SILC sample from that year.

External Validity of the Income Data

From Table 3 one can see that the medians and means of equivalized weekly household income from the TILDA and EU-SILC samples are very similar when we use the aggregated sources of gross income approach. One should note that the EU-SILC sample used here is a sub-sample with the same inclusion criteria as the TILDA sample – households with at least one person aged fifty or over. Figure 1 shows the distribution of disposable income from TILDA (Aggregated Sources of Gross Income) and EU-SILC are very closely aligned.

It was also found that the proportion at risk of poverty estimated using TILDA (0.157 with a 95% C.I. of 0.141 to 0.173) is very similar although slightly higher than that of a similarly defined sample from EU-SILC (0.137 with a 9% CI of 0.122 to 0.153) from the same period. Being at risk of poverty is defined as being below 60% of the median of the

² However when the analysis was repeated using these observations, the results were found to be roughly the same.

income distribution. In 2010 this was €10,831 per annum (= €208 per week). One should note that non-age related social welfare payments were set at around 196 euro per week whereas the higher rates of age-related social welfare were set above the poverty threshold (e.g. the full rate of Non-Contributory Pension was €219 per week).

Taking another perspective, the Gini Coefficient for equivalized household income from EU-SILC 2010 for a similarly defined sample was 0.326 (with a 95% C.I. of 0.312 to 0.341) which is very similar to the Gini Coefficient estimated using TILDA (0.347 with a 95% C.I. of 0.331 to 0.363). Putting the Irish Gini Coefficient into international perspective, the Gini Coefficient for Sweden in 2010 (all age groups not just those aged over 50) was 0.23, the EU average was 0.304 in 2010 and the corresponding number for the USA was 0.47 in 2009.

However we find that the single comprehensive household income approach underestimates household disposable income more so than the aggregate sources of gross income approach. Using this measure of income the estimated at risk of poverty rate is 26% and the Gini coefficient is around 0.42. These do not compare favourably with a similarly defined sample from the EU-SILC data. For the observations where both the single comprehensive income question and the aggregated sources of income are recorded, the correlation between these two measures of income is just 0.16. One cannot reject the null of independence between these two measures of income when estimating Spearman's Rank Correlation Coefficient. Therefore one must question the validity of the single comprehensive income question despite the larger sample size that it provides. In Wave Two of TILDA, collected in late 2012, the respondents were asked the comprehensive income question in relation to each household member separately so as to try to reduce the likelihood that the income of some family members is not included in total household income.

For the remainder of the paper, the measure of income used is the aggregate sources of gross income approach. However the results are qualitatively similar when using the single comprehensive question approach.

External Validity of the Wealth Data

Relative to the widespread availability of income data, it is rare for wealth data to be collected and even rarer for both wealth and income data to be collected in a large sample. Not since 1987 has detailed wealth data been collected on such a large sample in Ireland. We classify the asset holdings of the TILDA respondents into two categories: non-liquid assets

and liquid assets. Table 4 shows the percentage of respondents holding different types of assets and the average self-assessed value of these assets.

Non-liquid assets consist of owner-occupied housing, non-owner occupied housing and other fixed assets which include land, a firm or business, an inheritance or money owed to the respondent. The level of home ownership is 85% which is high relative to other countries. According to the 2011 census, around 70% of all Irish households own their dwelling outright or are paying off a mortgage.

Liquid assets are savings in deposit accounts, financial assets (current cash value of life insurance, mutual funds, bonds or shares) and cars. The level of ownership of financial assets at 28% is low compared to the US [cite]. 79% of TILDA respondents say they own at least one car although 9% give a value of zero to the car. This is very similar to the 2006 census figure which showed that 80% of Irish households owned at least one car³.

TILDA also collected information about levels of debt. Debt is classified as mortgage debt on owner occupied housing or other types of debt such as credit card debt. The number of people in debt is low and the amounts owed are generally low. It can be shown that the position of households relative wealth distribution does not vary much if one examines the net asset distribution or the gross asset distribution.

The Gini Coefficient in relation to wealth is 0.529 which is much greater than when looking at inequality in relation to income. This is perhaps expected as wealth measures the accumulation of resources over the lifetime of the individual and inequality tends to accumulate over time. It is more difficult to provide international context for the estimated wealth Gini Coefficient as there are very few surveys which record wealth (and even fewer that record both income and wealth). The last available estimate for Ireland was 0.581 in 1987. The UK had a wealth Gini Coefficient of 0.697 in 2000, Sweden's was 0.742 in 2002 and the USA's was 0.801 in 2001. The ranking of wealth inequality by country can differ greatly relative to the same country's ranking in relation to income inequality. This is due to the level of home ownership and other incentives to accumulate wealth in a given economy. Ireland's level of wealth inequality is low when compared internationally and this may reflect the high level of home ownership amongst the TILDA sample.

Section 3: Two applications

The joint distribution of income and wealth

³ The 2011 Census Data in relation to cars will be released in December 2012.

In the context of austerity and the longer-run issue of population ageing, there is an on-going debate over whether benefits to elderly people should be means tested. Ideally, such means-tests should involve the assessment of both income and wealth but a failure to account for either could skew the distribution of resources in an unfavourable way if there are people who have high incomes but low wealth and vice versa. The TILDA data allow us to assess the extent to which such groups exist.

Table 5 shows the joint distribution of wealth and income. Around 37% of people are in the bottom two quartiles of both distributions. Around 28% are in the top two quartiles of the two distributions. Around 16% are in the top two quartiles of the income distribution but in the bottom two quartiles of the wealth distribution. Similarly around 16% are in the top half of the income distribution but in the bottom half of the wealth distribution.

The upper panel of Table 5 shows the proportion of those holding different type of assets across different quintiles of income. Home ownership is near ubiquitous in the top three quintiles. Ownership of second or homes is concentrated in the upper two quintiles. The proportion of those with other assets (including land and business assets) rises linearly across the quintiles. One should note that the bottom income quintile includes self-employed people who have made a loss (coded to zero income). Car ownership in the bottom two quintiles of income is very high compared to the bottom three quintiles. The proportion of those with savings increases linearly across the quintiles. However holdings of financial assets are much higher in the top two quintiles than in the bottom two quintiles. Mortgage debt is higher amongst those with higher incomes. This mortgage debt relates to the principal residence so the greater debt of those with higher incomes is not related to the second homes owned by this group. Rather the greater level of debt may reflect the fact that those in the top income quintiles are those who are still receiving full salaries rather than pensions and are thus younger and still repaying mortgages.

The middle panel of table 6 shows the composition of the asset portfolios across different income quintiles. The composition of the portfolio of those in the bottom three quintiles, and to a less extent the 4th quintile, is broadly similar. Around three quarters of their gross wealth is held as housing. However in the top quintile, less than two thirds of wealth is held as housing and a larger proportion held as savings.

The bottom panel of table 6 shows the median asset holdings of different types of assets across the income distribution. Median levels of housing rise in a roughly linear fashion across the quintiles. However business assets, savings and financial assets are much larger for those in the top two quintiles than those in the bottom three quintiles.

The effect of income and wealth on life satisfaction

Economists and other are showing an increasing interest in “well-being” and its determinants. The effects of income and wealth are frequently explored in this context. With income being a flow variable and wealth being a stock variable, these variables may affect different outcomes in different ways. Furthermore debt may carry a burden in such a way that controlling for debt and gross assets separately may better explain outcomes than a single measure of net wealth. As an illustration of the potential usefulness of TILDA, in this section we examine the relationship between life satisfaction, income, gross assets and debt⁴.

Life satisfaction is measured in TILDA using a seven points scale (Diener et al 1985): “ In a scale from 1 to 7, where ‘1’ means strongly agree and ‘7’ means strongly disagree, please say how much you agree or disagree with the following statement: I am satisfied with my life”

This instrument has been used widely (e.g Oswald and Pwodthavee 2006). One can see in Table 6 that the most satisfied are those who lie in the top quartiles of both the income and wealth distribution and the least satisfied are those with low levels of both income and wealth.

Table 7 shows the marginal effects of income, wealth and debt on the probability of being in the most satisfied category resulting from ordered probit models being estimated. These models also control for gender, education, a cubic function of age, marital status, geographic location, economic status, being disabled, household size, number of children, any recent illnesses. Being less educated, being married, not having a disability, having children and being retired were all found to have statically significant positive effects on the probability of being in the most satisfied group.

In column 1 of Table 7 we see that the log of weekly disposable equivalized income has a statistically significant effect on the probability of being in the most satisfied group. However the effect is small: a 1% increase income results in just a 0.055 of a percentage point increase in the probability of being in the most satisfied group. Column 2 reports that the marginal effect of net assets (when not controlling for income) is similarly small but statistically significant. Column 3 shows that both income and net assets have small but significant effects when controlling for both simultaneously. However the effect of income is relatively larger than the effect of net assets.

⁴ It can be argued that there could be reverse causality between well-being and income and wealth and that this should be addressed. However, here we are merely illustrating the potential use of the data.

Column 4 shows the effect of income, gross assets and debt. The effect of debt is not statistically significant and indeed the coefficient is extremely small. In column 5, we can see that once gross assets are disaggregated into different asset components, housing wealth has a statistically significant but small effect. The effect of log income remains small but is still four times larger than that of housing wealth. None of the other types of assets or indeed debt, are statistically significant.

In Column 6 we control for the quartile of income and wealth in which the respondent lies. Being in the top income quartile has a large effect on being in the most satisfied category. In columns 7 we control for both the relative position of the individual in both the income and wealth distribution as well as the levels of income and wealth. Interestingly we see that for wealth, the relative position does not matter as much as the absolute level of wealth whereas for income, the relative position matter more than the absolute level of income.

Section 4: Conclusions

Our main objective in this paper has been to introduce researchers to both the existence, and potential usefulness, of the income and wealth data in TILDA. In presenting the data, we have drawn attention to some of the complex issues which arise due to the presence of missing data. This is a problem which afflicts all surveys, especially relating to financial issues. The approach which we have taken in this paper is relatively simple. However, and as noted above, the potential exists to employ more sophisticated imputation methods.

Regardless of any limitations due to missing observations, the data hold out great potential. The TILDA data is unusually strong, even in an international context, in combining both health and socioeconomic data. The health data in both subjective and objective and cover both physical and mental health. Even in the cross section, this offers enormous research potential. As the longitudinal dimension of the study develops, the potential will be all the greater.

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Figures

Figure 1: The distribution of weekly equivalized household disposable income.

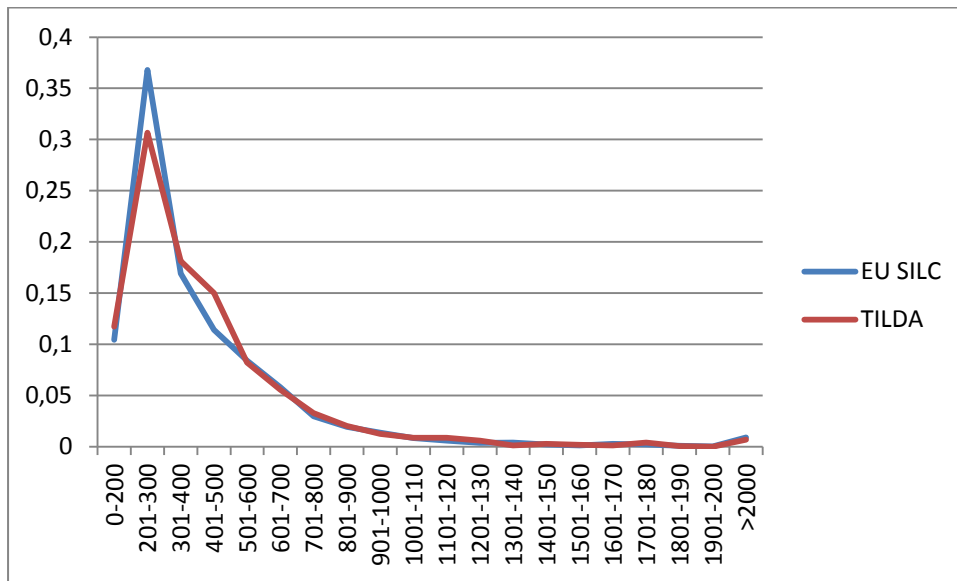


Table 1: Missing Cases for Income and Asset Questions

	% of missing cases without using unfolding brackets	% of missing cases using unfolding brackets
Employee Income	0.11	0.04
Self Employment Profit or Loss, Directors Fees	0.38	0.24
Asset Income from interest, dividends, rent, other	0.36	0.16
Farm Income	0.17	0.08
Income From Private or Occupational Pensions	0.15	0.15
Social Benefits/Allowances	0.06	0.06
Catch-all question on total net household income	0.24	0.07
Housing	0.28	0.06
Savings	0.30	0.23
Financial Assets	0.19	0.09
Cars	0.13	0.13
Property	0.05	0.05
Other Assets	0.10	0.06

*also includes inferring asset returns using 5% interest rate where interest income is unknown but principal is known or where principal is unknown but interest income is known

Table 2: Characteristics of groups omitted/included in final sample

	Original Sample	Partner Did Not Respond*	Missing Income Info	Contradictory Answers	Missing Asset Data	Final Sample using Agg Sources of Income Approach	Final Sample using Single Comprehensive Income Question
Level of Education:							
Primary	0.38	0.36	0.33	0.15	0.43	0.42	0.38
Secondary	0.43	0.45	0.41	0.54	0.41	0.43	0.44
Third	0.19	0.19	0.26	0.30	0.16	0.15	0.18
Age Group:							
50-64	0.58	0.65	0.54	0.95	0.51	0.56	0.59
65-74	0.23	0.21	0.26	0.05	0.24	0.25	0.24
>=75	0.18	0.14	0.20	0.00	0.25	0.19	0.18
Gender:							
Male	0.48	0.43	0.52	0.62	0.46	0.48	0.50
Female	0.52	0.57	0.48	0.38	0.54	0.52	0.50
Location:							
Dublin	0.22	0.23	0.23	0.19	0.18	0.24	0.24
Urban outside of Dublin	0.28	0.29	0.29	0.22	0.31	0.27	0.27
Rural	0.49	0.49	0.48	0.59	0.51	0.48	0.49
Marital Status:							
Married	0.68	1.00	0.72	0.84	0.60	0.56	0.65
Single	0.10	0.00	0.09	0.08	0.11	0.12	0.11
Divored/Seperated/Widow(er)	0.22	0.00	0.19	0.08	0.30	0.32	0.24
No. of Children Present:							
No Children	0.52	0.07	0.65	0.43	0.66	0.67	0.55

One Child	0.24	0.48	0.18	0.21	0.18	0.18	0.23
Two Children	0.12	0.21	0.10	0.17	0.09	0.09	0.12
Three or More Children	0.11	0.24	0.07	0.19	0.07	0.07	0.10
_n	8504	1812	1284	408	1399	3590	5342

*includes 150 observations where there are more than two eligible respondents

Table 2: Comparison of Mean and Median Income in TILDA and similarly defined sample in EU-SILC

	Mean			Median		
	TILDA Single Comprehensive Income Question	TILDA Aggregated Sources of income	EU- SILC	TILDA Single Comprehensive Income Question	TILDA Aggregated Sources of income	EU- SILC
Total Net disposable household income after social transfers using national definition of income	644	740	819	480	553	623
(Standard Error)	17	20	19	8	9	14
Equivalized income after social transfers using national definition of income and national equivalence scale	357	428	423	267	316	342
(Standard Error)	9	11	7	2	5	6

n=4041 for EU SILC 2010

Table 3: Descriptive Statistics relating to Assets and Debt

	Proportion with type of asset/debt	Mean of non-zero obs	Std. Error
Owner Occupied Housing	0.85	287,151	14,104
Other Property	0.11	275,210	21,580
Other Fixed Assets	0.17	187,975	18,520
Total Non-Liquid Assets	0.87	351,001	15,876
Savings	0.64	62,796	6,616
Financial Assets	0.28	66,656	7,814
Cars	0.79	7,814	291
Total Liquid Assets	0.81	76,954	6,780
Debt	0.25	32,994	3,789
Mortgage Debt	0.13	75,478	6,734
Total Debt	0.30	55,888	4,461
Total Gross Assets:	0.93	391,581	18,475
Total Net Assets:	0.92	381,373	18,500

Table 4: Joint Distribution of Equivalised Income and Gross Assets

	Equivalized Income Quartile 1	Equivalized Income Quartile 2	Equivalized Income Quartile 3	Equivalized Income Quartile 4
Gross Asset Quartile 1	0.12	0.09	0.05	0.02
Gross Asset Quartile 2	0.08	0.08	0.07	0.03
Gross Asset Quartile 3	0.05	0.07	0.06	0.06
Gross Asset Quartile 4	0.02	0.03	0.06	0.10

Table 5: Characteristics of wealth by income quintiles

	Owner Occupied Housing	Other Housing	Business Assets	Cars	Savings on Deposit	Financial Assets	Mortgage Debt	Other Debt
Proportion Holding Asset								
Income Quintile 1	0.77	0.03	0.13	0.59	0.47	0.16	0.06	0.20
Income Quintile 2	0.82	0.04	0.17	0.61	0.59	0.16	0.05	0.16
Income Quintile 3	0.89	0.08	0.15	0.78	0.67	0.25	0.14	0.25
Income Quintile 4	0.92	0.16	0.19	0.84	0.77	0.34	0.14	0.32
Income Quintile 5	0.95	0.26	0.22	0.89	0.87	0.48	0.17	0.28
Proportion of Total Gross Asset Portfolio								
Income Quintile 1	0.75	0.02	0.04	0.06	0.10	0.03	0.04	0.06
Income Quintile 2	0.74	0.02	0.07	0.05	0.11	0.02	0.02	5.44
Income Quintile 3	0.74	0.03	0.06	0.04	0.09	0.04	0.03	0.04
Income Quintile 4	0.70	0.06	0.06	0.03	0.10	0.05	0.09	0.04
Income Quintile 5	0.62	0.07	0.07	0.02	0.15	0.06	0.03	0.04
Median Holding of Asset								
Income Quintile 1	150,000	100,000	50,000	3,000	8,000	10,000	45,000	5,000
Income Quintile 2	170,000	140,000	55,000	3,000	8,000	10,000	36,000	6,000
Income Quintile 3	200,000	150,000	100,000	5,000	15,000	15,000	43,000	8,000
Income Quintile 4	250,000	250,000	130,000	7,000	25,000	26,000	60,000	10,000
Income Quintile 5	300,000	200,000	110,000	9,000	50,000	30,000	45,000	9,000

Table 6: Levels of Life Satisfaction by asset and income quartiles

	Equivalized Income Quartile 1	Equivalized Income Quartile 2	Equivalized Income Quartile 3	Equivalized Income Quartile 4
Gross Asset Quartile 1	2.45	2.21	2.08	2.08
Gross Asset Quartile 2	2.18	1.89	1.88	1.73
Gross Asset Quartile 3	2.05	1.86	1.85	1.68
Gross Asset Quartile 4	1.71	2.08	1.79	1.68

*Respondent asked to rate life satisfaction as follows: “ In a scale from 1 to 7, where ‘1’ means strongly agree and ‘7’ means strongly disagree, please say how much you agree or disagree with the following statement: I am satisfied with my life”

Table 7: Marginal Effect of Income and Assets on Life Satisfaction

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Log Income	0.055 <i>0.014</i>		0.046 <i>0.014</i>	0.044 <i>0.014</i>	0.042 <i>0.014</i>		0.015 <i>0.019</i>
Log Net Assets		0.013 <i>0.003</i>	0.012 <i>0.003</i>				
Log Gross Assets				0.014 <i>0.003</i>			0.015 <i>0.004</i>
Log Total debt				0.000 <i>0.002</i>			
Log Housing Wealth					0.009 <i>0.002</i>		
Log Savings					0.003 <i>0.002</i>		
Log Financial Assets					0.003 <i>0.002</i>		
Log Values of Cars					-0.003 <i>0.002</i>		
Log Other Assets					0.002 <i>0.002</i>		
Log Other Housing Wealth					0.000 <i>0.002</i>		
Log Debt other					0.000 <i>0.002</i>		
Log Mortgage Debt					0.000 <i>0.003</i>		
2 nd Income Quartile						0.062 <i>0.023</i>	0.047 <i>0.024</i>
3 rd Income Quartile						0.063 <i>0.026</i>	0.038 <i>0.029</i>
4 th Income Quartile						0.122 <i>0.027</i>	0.086 <i>0.038</i>
2 nd Gross Asset Quartile						0.033 <i>0.027</i>	-0.042 <i>0.029</i>
3 rd Gross Asset Quartile						0.065 <i>0.025</i>	-0.012 <i>0.029</i>
4 th Gross Asset Quartile						0.084 <i>0.029</i>	-0.008 <i>0.033</i>