

## **Economic measures in the Health and Retirement Study**

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### **Overview**

This review paper provides an evaluation of the economic measures collected in the HRS, covering issues such as income, assets, employment and pay, pensions and consumption. These measures are central to a large part of the research agenda of the HRS team and account for a substantial proportion of the core questionnaire.

It is hard to find fault with the economic measures that have been developed and implemented by the HRS team, and this is a theme that will recur throughout this review. As far as economists are concerned HRS is (currently) the premier aging survey in the world so my review is bound to be fairly favourable. At the conceptual level the various dimensions are clearly thought through and the relation of each dimension to the research questions that the survey addresses is immediately apparent. With regard to the quality of the broad measures and the individual questionnaire items there have been many important innovations made by the HRS team in the methodology of data collection for such measures and it appears that these have resulted in particularly high quality data in domains where quality of measurements has traditionally been a genuine challenge. Finally, the measurements are on the whole efficiently taken, in the sense that most of the broad dimensions appear to be measured with close to the minimum number of questionnaire items possible without sacrificing data quality. Taking all this together the economic part of the HRS core questionnaire is a model to which other interdisciplinary surveys, and particularly those focusing on older populations, should aspire. The ELSA economics team have pored over the HRS economic measures questions over the last two years and could find little reason to depart from them for reasons other than international institutional variation or the fact that different time was available for various dimensions.

One further yardstick by which one could evaluate the broad impact of the economic measures in the HRS is by a simple measure of publications in top economic journals and other learned volumes. By this measure HRS scores well, having been used in a substantial number of important and influential pieces of economic analysis as evidenced in the official bibliography. However, such a measure fails to control for the undoubtedly large number of empirical articles written on the same topics which do not use the HRS. My feeling on this is that many of these latter articles use other surveys (such as SIPP, SCF, CPS or even PSID) because of a particular focus of the research question, whether this be cross-sectional descriptive analysis (where the more detailed coverage in representative cross-sectional surveys can be exploited, e.g. wealth or assets in the SCF), detailed analysis of the timing of movements on and off particular programmes (SIPP) or analysis of longer-term changes in economic position that can only be measured with long T panels (PSID). Such factors would rule out the use of the HRS not on quality or the extent of the survey coverage, but

more on the appropriateness to the question at hand. With the movement towards steady state design meaning that the HRS now provides a representative sample of the population aged 50 and over, and the fact that the time-series nature of the data now spans over 10 years, one can only expect the number of situations where HRS is the preferred data set for analysis of economic (and non-economic) issues to increase further.

The rest of this review discusses specific issues with parts of the questionnaire pertaining to the measurement of economic position. Within each of the broad categories identified below I outline the main strengths and weaknesses of the core questionnaire and broader HRS activities as I see them.

One note of caution should be kept in mind throughout what follows, and indeed when reading and potentially acting on the comments of other reviewers — investigators change measures in panel data at their peril. The temptation to tinker with measures, or innovate too radically or too frequently should be resisted because of potential adverse effects on time-series comparability of measures, or on respondent burden which may ultimately lead to attrition problems. Paramount to the value of the HRS data is the longitudinal nature of the information collected, and as such any changes to the core questionnaire should not be taken lightly. Potential costs and benefits of the changes need to be explored in detail from the perspective of the survey as a whole, taking into account both interdisciplinary and intertemporal issues.

## **I. General issues in measuring economic status in the HRS**

### *a. Unfolding brackets*

One of the undoubted strengths of the HRS has been the methodological innovations introduced in the measures of economic position. In particular, the development of the unfolding bracket methodology with randomised entry points has revolutionised data collection for items where non-response (either through recall, uncertainty or through refusal) is an issue. The resulting data quality, for traditionally hard to measure items such as components of wealth and components of income (particularly asset income) is impressive and the HRS investigators should be commended for such a key advance in an area which is so clearly fundamental to so many of the HRS research questions.

I have two minor comments on the unfolding bracket algorithms. Firstly, maybe it is time to revisit the choice of bracket values to account for inflation, real wealth and income increases, and the movement to the steady state design which will have changed the characteristics of the ‘average’ HRS respondent. Presumably the bracket values are selected to divide the sample into some desired fractions, and as time passes they will need to be reviewed with this in mind. Second, it seems from the box and arrow documentation that bracket values for flows of income are expressed in values corresponding to only one frequency (either hourly, weekly, monthly or yearly depending on the particular question), even when in the original (point value) questions respondents are allowed to report values at various different frequencies, or often even report a lump sum. One possibility worth investigating might be to allow respondents to report hourly, weekly, monthly or annual bracketed values to parallel the options in the initial point value question.

*b. Subjective probabilities and expectations measurements*

An equally important innovation has been the development of questions designed to elicit subjective probabilities of various events in the expectations module. Expectations (whether of economic or non-economic circumstances) are key to retirement planning, and the quantitative nature of the resulting responses to these questions is a major strength of the HRS data. The methodology has a number of attractive features from the point of view of analysis and the HRS investigators had shown how analysis of these variables can provide important quantitative variation in expectations across groups. Particular dimensions of the expectations module are discussed below, but one very minor issue with the methodology is whether respondents still need to have the methodology explained (at some length) and then the example question relating to the weather. Presumably after all these years of answering the HRS core questionnaire they are now familiar with the methodology and some time savings could be made.

*c. Financial respondent design*

A number of blocks within the HRS are delivered only to the designated 'Financial Respondent' (FR) who reports incomes and assets on behalf of the couple. This is undoubtedly a time-saving innovation and recognises that the predominant approach taken by researchers when confronting the data is to treat assets, incomes and decisions relating to these variables as joint within the couple. The fact that the interview takes place over the telephone exacerbates the separation of questions across individuals since there is no chance that the other adult is 'present' when the questions are addressed to the FR, as would often be the case in a face to face interview. As a result, the design relies on the FR being fully informed about the finances of the couple, and willing to report all measures. There is undoubtedly a neatness about the design in the sense that the survey does not have to ask about individual items and then disentangle any joint holdings, and the marginal benefit of the spare questionnaire minutes that have consequently been freed up for other topics has probably outweighed any costs of this design to date.

Thinking forward though, I wonder whether some thought could be put into whether this design is sufficiently flexible to investigate all the potential issues pertaining to the analysis of joint versus sole ownership of assets, differences within the couple regarding information and financial education, or even joint household decisions and preferences for wealth accumulation in various different forms. Certainly it is the case that this design does not seem appropriate when couples manage their finances separately or one member of the couple may have assets held distinctly in his or her name where privacy issues may lead to underreporting of this asset. I assume such arrangements are becoming more prevalent in the US, so building in some ability for each adult within the couple to be able to select to answer their own assets and income questions may be important to consider. Maybe some supplementary questions could be delivered to the non-financial respondent in the first instance, to explore the potential importance and prevalence of such issues.

#### *d. Lack of documentation of methodological developments*

The three previous sections point out major methodological innovations that other surveys could or should adopt, yet dissemination is perhaps hampered by a relative lack of analysis documenting the methodological developments underlying the core HRS questionnaire. Often one hears that that many variants of question wordings, module design or broader questionnaire and interview structure (including interview time and respondent incentives) have been piloted and evaluated as part of the broader HRS project and, as is usual for HRS investigators, the evaluations have proceeded in a very scientific manner. Such evidence would be invaluable for those designing other surveys both in the US and abroad, and would not only make their (our) job easier but would also increase the chances of such surveys following HRS methodology, hence increasing the comparative possibilities for HRS data.

Further examples are the debates and experiments that have been had carried out relating to various methodologies for feeding forward data across waves in a panel study as well as imputation procedures (and in particular whether imputation should use information from other waves of the panel if it exists). Statistical literature often deals with this in only the general case, and the experience of the HRS investigators in confronting such choices for particular economic measures (assets, income, etc.) could be valuable to pass on to other surveys facing the same choices.

## **II. Income and assets**

The integrated income and assets module lies at the heart of the economic measures within the HRS core and is a very impressive piece of survey design that should not be modified, both for longitudinal consistency reasons, and because modifications do not seem necessary. The measurement of asset income in particular has been shown to be superior to other surveys where it was collected as part of income questions instead of as a follow up to asset questions as is the case in HRS.

Although the basic period of assessment is the previous calendar year, certain sources of public transfer income (Food Stamps, SSI) are collected in more detail such that researchers can see exactly when in the two years between waves such income sources were present for the household. This is helpful for modelling movements on and off benefits where timing matters, but to my knowledge this is not a use to which HRS is often put. I am not sure this should not be used as a rationale for dropping such items — my reading of the evidence is that benefit receipt data is more reliably collected this way, and the precise timing of movements off benefits and correlations with other economic and health changes, in particular disability benefits, is a big research question that the HRS ought to have the capacity to address.

It is worth noting that a complete income breakdown over the period between waves is not currently possible without assuming something about the persistence of income flows since most income components are only available for the last calendar year. From an instantaneous measurement point of view it is clear that a calendar year income measure is probably most reliable and most relevant (although there may be research questions surrounding seasonality of income within the year for certain regions). With more details

now being collected on active and passive saving and on receipt of lump sums between waves, it may be worth considering that, in principle at least, subsidiary questions which gave a guide to total income since the last interview would allow an estimate to be made of total expenditure.

The innovation of the exit interview for picking up bequests should also be acknowledged as a major strength of the HRS asset questions that adds considerably to the value of the data for certain research questions and is a model that I expect other studies to follow where possible.

Finally, the new questions on asset changes (active and passive saving) and the related Weird Asset Callback Module are exciting new areas of research and may offer important insights into the dynamics of wealth accumulation and the measurement of wealth in panel studies respectively. As yet, it is too early to say how successful they have been, but I would encourage the early dissemination of any findings that are obtained, since such issues are clearly of interest to other surveys where measurement of economic position, and more particularly wealth, is a factor.

### **III. Employment, pay and pensions**

Details of employment and pay are complete and cover everything one might think to be interesting, from an economic perspective, about the nature of work undertaken and the resulting remuneration. But as routes into retirement become more diverse there may be a long term question of whether the HRS instrument contains enough detail on the role and nature of secondary activities (both in terms of paid part-time employment, self-employment and voluntary work) to set out all the issues raised by such a trend.

In contrast to the income and assets, housing and expectations modules, however, the employment, job details and job search modules seems relatively extensive as one reads through them. Admittedly most respondents will be routed out of the majority of questions, but an exercise which audited how much some of the more detailed items on job search, job requirements (in terms of education and experience) and reservation wages have been used might be useful. In addition it appears, if I have understood the routing correctly, that many of the questions on the physical nature of work and on the employers attitudes to older workers are asked every wave. Are these really expected to change when respondents keep the same job, or could they only be collected when respondents change jobs?

The pensions questions in HRS look like they have been some of the most complex to design and conceptualise, and again the resulting information is impressive. The ability to link to pension scheme and social security data is a major strength of the HRS methodology. In addition, having summary information on plan arrangements (DB or DC etc.) is of genuine value. Differences that arise between calculated and self-reported assessments of pension wealth and expectations should not be seen as evidence supporting the case for dropping one or other of the measures. Methodology for calculation of wealth or expected benefits could be refined to incorporate more details of individual labor market and earnings histories and estimates would improve as a result. Second, the role of subjective measures may be important in driving behaviour, regardless of the 'objective'

measure. Finally, differences between subjective and objective assessments are an object of interest themselves from the point of financial education and the public perception of pension policy.

There are a number of questions located in the employment block relating to retirement planning and pension income expectations where respondents are asked for point assessments of expectations for the future – either of age expected to receive benefits, or of amount of benefits to be received. These items are inconsistent with the (superior) methodology of the expectations questions and could be brought into line. Particularly since there are well known interpretation problems with questions of the form (“What age do you expect to ...”) which underlie the reason the chances methodology was developed in the first place. Pension and social security income expectations in particular are not well measured and, since they could be considered crucial to the research agenda for pre-retired households but are clearly not particularly well known by respondents, one might even think of a methodology more expansive than that of the expectations module. In particular I am thinking of the Manski methodology which, by asking a short series of chances questions for various different values (defined by their relation to an initial question asking for the minimum and maximum possible outcomes) allows one to understand the dispersion as well as the central tendency in expectations at the individual level. Knowledge and understanding of pension and social security income is a big economic issue and such items, when collected along with the HRS covariates, would add considerably to the debate.

#### **IV. Consumption**

Information on consumption has been notably absent from early HRS waves, with the exception of food in, food out and rent or mortgage repayments. This gap has been partially addressed by the 2001 mailout delivered to around one third of the sample. This mailout asks for information on recent purchases of major durable items (vehicles, fridge, washing machine, dishwasher, television, computer), along with normal outlays on eleven categories of utility bills, finance and insurance payments and fifteen expenditure items. The measures are fairly crude recall measures that allow the respondent to report either expenditures last week, last month or last year. Finally a small number of items asks what might happen to spending in a number of situations, most notable on retirement. The recall measures allow information to be collected with limited respondent burden, but are susceptible to the well known problems of heaping, rounding, telescoping and forgetting. In addition respondents whose last month or last week was atypical may adjust their reporting frequency, and if this happens differentially with regard to other covariates (such as education, age or income) then the resulting gradients picked up in the consumption measures may be affected. Nevertheless the measures represent an important opportunity for new analysis and investigation on the HRS.

As such, this mailout represents a step forward in consumption measurement on the HRS sample, but does not to my mind go far enough in giving the issue appropriate importance within the survey as a whole, partly because of the issues outlined above, and partly because there is still no information on consumption for two thirds of the sample. As well as being an important point of tangency between many disciplines within the aging debate, consumption lies at the heart of economic models of provision for retirement, and there are

at least two crucial research questions that the HRS cannot currently answer. Firstly, is consumption smoothed across work and retirement periods to the degree that economic models would predict? Second, how do consumption patterns and consumption needs change with age or with retirement? The latter question is central to the understanding of the adequacy of saving for retirement, and links work on income and assets in retirement to broader measures of economic and non-economic wellbeing. In addition, with the elderly becoming a growing fraction of the population and becoming richer as well, their spending patterns will become an increasingly important driver of demand for goods and services within the economy as a whole. With all its other covariates, particularly on health, activities and expectations, HRS would be in a perfect position to exploit consumption information in investigating all these questions were such information to be collected.

For all but the most infrequently purchased items, a diary is still thought to be the most accurate way of collecting expenditure information but this was not included as part of the mail out (or even as a substitute for the mail out for a random sub sample which would have been one way to trial this form of data collection). If the HRS team really want to take consumption measurement seriously, as I believe they should, this option should be considered. At least one panel – the Spanish expenditure survey - has succeeded in implementing an expenditure diary, whereas to my knowledge no ‘long T’ panel has attempted it (PSID and BHPS both contain summary recall measures of expenditure on food only). Were some methodology (either diary based or otherwise) to be developed and successfully fielded on the HRS sample it would be another major breakthrough in survey research.

Note that it is consumption that is referred to in the research questions above, but expenditure that is typically measured with either a recall or a diary instrument. This points to a further dimension to measure – consumption services from durable goods. To completely measure consumption one needs to measure the stock as well as the flow of durable goods and such measures are also not collected in the HRS. Ownership of a washing machine, for example, (regardless of whether it was bought in the last year) leads to a flow of services and a corresponding reduction in financial needs that should be measured when generating a measure of consumption, or indeed when analysing differences in household expenditures. Again, such measures should be considered for inclusion in future waves.

## **V. Other issues**

### *a. Expectations*

The expectations module is, as far as I know, unique to HRS and adds a huge amount to the value of the survey data. Quantitative information on expectations in a wide number of domains, and particularly economic domains, is another of the HRS strengths. My feeling is that expectations data will become key to future research agendas as economists understand how to use such data, and as, along with the data on cognitive ability, they provide the raw materials necessary to study the nature of individual choices and decision making. As a result, some parts of this module could probably be expanded to cover dimensions in more depth. One example would be expectations of inadequate economic resources defined in some sense relative to needs. Another would be the questions on the expectation of working

at particular ages which currently focus on two ages – 62 and 65 — because of their relevance for social security. As retirement becomes more gradual, and as income other than social security becomes a more important fraction of retirement income, maybe these could be expanded to a broader range of ages to enable researchers to look at expectations for movements out of the labor market more broadly.

Other minor comments I have relate to the later items in this module. The item on chances of social security becoming less generous than now is not specific regarding whether this would be from the point of view of respondent or more generally for the population – presumably transitional arrangements would be put in place were reform to take place, which would mean a respondent could legitimately answer zero chance of their social security benefits changing whilst knowing that reform was inevitable in the system more widely. Finally I am not convinced the Barsky et al question designed to measure risk aversion for the under 65's and the corresponding question on lotteries for the over 65's need be asked in each wave. Firstly do we expect these questions to pick up a parameter that is thought to be changing between waves? Second, these questions are expensive in terms of interview time and my reading of the literature is that there is little agreement over the quality of these questions as measures of risk aversion. In addition, experience from piloting this for ELSA suggested the questions were not well understood by respondents. As a suggestion, since researchers tend to just group the population into four or so bands on the basis of answers to these questions one option would be to explore a much more simple set of questions that was designed to just divide the sample into broad groups according to preferences for risk. Maybe even a vignette-type approach would be suitable here. Furthermore, the role of various types of risk post retirement (whether this is health risk, mortality or morbidity risk, financial risk, divorce or bereavement risk, etc.) is a potentially interesting research area, and requires an investigation that looks at risk in a broader sense than the traditional “coefficient of risk aversion” approach as exemplified by the existing HRS question. New questions could be designed to look at differences in attitudes to, and preferences and understanding of, risk across different types of risk.

#### *b. Housing*

The economic components of the housing module – house value, mortgage and rent details – is well specified and appears to operate well. Given the big unanswered research question of the willingness of older households to downsize their housing wealth, which will only become more important as pressures to finance retirement consumption (both at the individual and the population level) intensify as a result of the aging population, I wonder whether the HRS has all one would need to look study housing wealth in detail. Other issues for investigation that would tie into such research questions would be: (i) expectations of housing wealth changes both active (downsizing) and passive (capital gains) as well as some measure of volatility of housing wealth (not just expectations of moving house as is currently collected); (ii) existence and take-up of ‘equity release’ or reverse mortgage schemes that are becoming more prevalent (obviously questions would need to be carefully drafted to avoid confusion with existing mortgage and annuity questions); (iii) further information on house quality and characteristics and some measure (whether self-reported or constructed from the combination of house value and characteristics) of imputed income from owner occupation, or else.



### *c. Other issues*

I wonder if there might there be room for a simple measure of self-reported relative economic position which tries to capture the respondents own assessment of their overall economic situation relative to others (akin to the ‘ladder’ used in Whitehall and ELSA). This would have the dual role of allowing researchers to investigate the existence and potential effects of self-perceived relative inequality, whilst also being a way of defining a summary measure of economic status over and above the more narrow dimension such as wealth, income or education groups. Such a measure may help particularly given the absence of consumption information, which is often thought to have this slightly broader role as a measure of permanent economic status.

### **Summary recommendations**

The economic measures in the HRS are an impressive piece of survey design that is clearly informed by economic theory. The resulting measures are also directly and identifiably relevant to the major policy and research questions in the economics of aging. Given this, and the importance of maintaining consistency of the time-series information at the individual level, major changes to the economic measures would be detrimental to the survey. Of course, there is always room for some tinkering around the edges of particular issues and this review has highlighted a (small) number of items whose value could be revisited, and a (slightly larger) number of items or topics that could be considered for addition. In summary, I would suggest:

- No major changes to existing economic measures
- Take consumption measurement seriously and on an ongoing basis
- Monitor appropriateness or otherwise of financial respondent design, particularly in the context of the analysis of studying household decision making
- More detailed methodology for expected income from pension and social security, and expected ages of drawing pension benefits, and one that is consistent with expectations module
- Drop risk aversion questions, or redevelop alternative measure. Do not collect every two years but instead collect less frequently
- More writing up of methodological findings and experiences with testing survey methods for measuring economic status
- Consider adding questions on equity release and expectations of downsizing housing
- Review use of various questions on current job characteristics and job search
- Consider adding a summary measure of self-reported relative economic status