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Symposium on Assets, Incomes and Retirement

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I. INTRODUCTION

In most developed countries, an increase in the retirement-aged population has put considerable financial pressure on public pension systems. In response, a number of countries have reformed their systems and have encouraged a substitution toward private pensions and tax-sheltered saving. As the baby-boom cohort reaches retirement age, it is likely that further policy change will be required; however, knowledge about the behaviour of people as they approach and reach retirement age and how they might react to policy change is vital for the formulation of good policy. In the UK, for example, the fiscal treatment of pensions has changed, leading to changes in the way people save for retirement. We would like to know if this has altered retirement behaviour and changed economic resources following retirement. We would like to learn how further policy changes may affect future behaviour. It is fortunate that we have available a new dataset — the Retirement Survey — that can be used to answer these kinds of questions. The three papers in this symposium analyse some of the data from this survey.

The Retirement Survey is the first major survey in the UK to follow individuals over time and report on their labour force activity, on their income and assets and on a broad range of personal characteristics. Previous studies have provided a cross-section (where we only observe individuals at one point in time) but have not included a panel element (where we follow the same individual over several time periods).

Although cross-section data are well-suited for characterising a population, they may not be particularly useful in understanding behaviour. Retirement is a good example. To understand the economic determinants of retirement, we need

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to observe the economic environment of a worker at approximately the time he or she is making a decision about retirement. However, in cross-section, we would have to rely on retrospection: for example, to find out about retirement at age 62, we would have to ask 63-year-olds, some of whom retired in the previous year and some of whom did not, what their wage rates had been, what their assets were and what the characteristics of their pensions were. We would need to know similar details about their health status and family situation. Estimations would then be based on comparing their behaviour as a function of their economic circumstances. This kind of recollection is bound to cause considerable observation error in the explanatory variables.

To find rates of retirement at each single year of age, one might extend such calculations to all ages: that is, query subjects of age t+1 about their economic environment at age t and their retirement choices between t and t+1. The resulting retirement rates by single years of age would represent workers from different cohorts, and, as such, one could not separate out any cohort effects or drift in that part of retirement not explained by observed variables. That is, we could not separate out the differences in behaviour of people of a certain age from those born in a certain year. This defect could partly be overcome by asking 63-year-olds about their circumstances when they were, say, 55 and relating their retirement behaviour between ages 55 and 56 to the economic environment as reconstructed from memory. On the face of it, this seems like an impossible task: for example, it is difficult to measure assets accurately in the present but it is not likely to be even feasible in retrospect.

In panel data, we can observe processes as they happen. We can ask a subject about his or her job, the wage rate, health status and other details of the economic environment and then observe work choices. The economic variables can be thought of as risk factors, and the retirement hazards are rates of transition in response to these factors.

Wealth holdings are important indicators of economic status and they help policymakers understand about the current economic status of a cohort. But to understand future economic status, we need to understand about the behaviour that will determine the future trajectory of wealth holdings. The life-cycle model is the leading theoretical explanation of the determinants of consumption choice and therefore of wealth change, and we would like to test the predictions of the life-cycle model to establish its empirical relevance and to quantify its effects so that we can make quantitative predictions about rates of wealth change.

In principle, one might relate observed wealth holdings in cross-section to the determinants of saving behaviour over the lifetime of each cohort: the level of wealth, being the result of saving behaviour, should be governed by the life-cycle model in the same way as the change in wealth. However, it is very difficult in cross-section to learn about life-cycle models from wealth holdings because one cannot adequately control for lifetime resources and variations in rates of return. An alternative is to study the age profiles of wealth with the hope of learning

about changes in wealth as individuals age. However, each cohort has had different lifetime resources, which usually vary in a systematic way from cohort to cohort and which, therefore, vary by age in cross-section. Furthermore, the life-cycle model makes particularly strong predictions about saving behaviour among individuals who face substantial mortality risk. But, as has been found in many datasets, mortality risk is higher among those of lower economic status whether measured as wealth, income, education or type of employment.[1] Therefore, as a cohort ages, average wealth of the survivors could rise even if each surviving cohort member dissaves. The implication is that, if we want to study wealth change, we need data on wealth change of households and individuals: cross-sectional wealth variation by age will not provide the information we need.

In 1969, the Social Security Administration of the US fielded the Retirement History Survey (RHS), a biennial panel survey of the cohorts of 1906–11. Subjects were queried about a wide range of indicators and determinants of economic behaviour including details of employment, assets, health and so forth. At baseline, subjects were about ages 58–63 and they were interviewed six times, the last time in 1979 when they were 68–73. The availability and richness of this dataset played a very substantial role in establishing the field of the economics of ageing in the US. The data are the source of a good deal of what we know about retirement and the events of the first years after retirement. In particular, the RHS has been the most reliable source of information about wealth change. Further, the design of the Health and Retirement Study (HRS), a biennial panel of 51- to 61-year-olds which was begun in 1992, depended heavily on the knowledge gained from the RHS. The HRS will undoubtedly be the most important data for the study of retirement behaviour in the US over the next several decades, and some of the credit for its importance is due to the RHS.

Empirical research in Europe has been hampered by a lack of comparable panel data. Because good empirical research is informed by knowledge of the institutions of a particular country and the tastes of the population of that country, both of which help determine behaviour, empirical researchers have a comparative advantage when they use data from their own country. Therefore European empirical researchers have been disadvantaged relative to researchers from the US. A second consequence is that policymakers in Europe have not been able to rely on well-founded quantitative information about behaviour and the likely reaction of a population to policy changes.

For these reasons, the two waves of the Retirement Survey (RS) are likely to provide an important national resource. If the RHS is a useful model, the RS will lead to a large expansion in research on the economics of ageing. Because of the

[1]See Kitagawa and Hauser (1973), Shorrocks (1975), Hurd and Wise (1989), Jianakoplos, Menchik and Irvine (1989) and Feinstein (1992).

changing age composition of Great Britain, this area of research is vitally important for policymakers.

This *Fiscal Studies* symposium highlights some results from using the RS. It will take many years before research will show the full range and depth of questions that the RS can address, but judging from the RHS, it is likely that hundreds of research papers will be based on it.

II. SAMPLE DESIGN[2]

The Retirement Survey is based on a sample design in which a questionnaire was sent to about 15,000 residential addresses.[3] The questionnaire asked about the ages of persons living at the address with the objective of locating persons aged 55–69 on 1 December 1988. Thus the survey is approximately representative of the cohorts of 1919–33. Seventy-five per cent of the questionnaires were returned; 11 per cent were estimated to have been sent to ineligible addresses. One in four of the non-responding addresses was then followed up and 91 per cent of these responded. Thus the response rate at this stage was about 88 per cent.

The number of households identified as containing at least one eligible person was 2,917, and interviews were sought from all sample addresses containing someone of the target age. Interviews were achieved in 88 per cent (2,565) of these, which covered 3,543 people in the eligible age range. In addition, 609 partners outside the eligible age range were interviewed. Non-response was not greatly different by age, gender or marital status.

There was a single interview with respondents and their spouses carried out between November 1988 and January 1989 using four structured questionnaires. Questionnaires covered the current financial situation, changes expected or experienced around the time of retirement, detail on pensions and job history, and information on actual or expected age at retirement.

After completion of Wave 1, households were contacted annually to maintain contact for the second wave. In Wave 2, carried out in 1994, attempts were made to contact all who appeared in Wave 1. The achieved interview rate was 63.4 per cent, with a recorded death rate of 10.8 per cent and a non-response rate of 25.8 per cent. Non-response was somewhat greater among lower social classes, among those with lower incomes and among those with higher levels of disability. The final sample contained 2,247 individuals.

The second wave was a single face-to-face survey covering similar material to the original survey. It asked for detailed information on current income and health. Work and pension histories were updated from Wave 1.

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[2]Many thanks to Paul Johnson for supplying the information on sample design.

[3]Face-to-face interviews were conducted in central London and Clydeside.

III. RETIREMENT BEHAVIOUR IN THE RS

A leading objective of studies of retirement behaviour is to explain the large decline in the labour force participation rates of older men that are seen in Figure 1 of the paper by Sarah Tanner. In the US, the decline began in the late 1960s at approximately the time that social security benefits began to increase sharply.[4] By the mid-1980s, social security benefits had stabilised, and the participation rate of men had approximately stabilised. These facts suggest that, in the US, the generosity and structure of the social security system was at least partially responsible for the change in participation of men. This stabilisation does not seem to have happened in the UK. For example, in Figure 4 of Tanner, survivorship in the labour force (not retired) is higher in older cohorts than in younger cohorts. Understanding what caused the difference is an objective of cross-country comparisons of economic behaviour.

In the US, retirement is concentrated at a few ages, so-called retirement spikes. The ages are 62 — the age at which early, reduced social security retirement benefits can first be taken — and 65 — the age at which full social security benefits can be taken.[5] As shown in Figures 3 and 4 of Tanner, retirement in the UK is substantially concentrated at age 65 with a smaller spike at age 60. The explanation for the spike at 65 is clear and similar to the explanation for the spikes in the retirement rate in the US: 65 is the age at which men become eligible for the state pension in the UK. The spike at 60 is not as easy to explain. However, Figure 6 of Tanner suggests rather strongly that the details of the eligibility for an occupational pension are responsible for part of the spike. Retirement at age 60 is associated with 'usual' retirement age and a full rather than a reduced pension. The graph implies that the detailed structure of an occupational pension influences retirement. This finding is similar to results based on data from the US. For example, workers will delay retirement until they are eligible for a pension benefit and then retire at a high rate once they have become eligible: among workers aged 55–58 in 1992, the two-year retirement hazard rate was 13 per cent among those lacking a private pension, 9 per cent among those with a pension but not yet eligible for benefits, and 26 per cent among those with a pension and eligible for benefits (Hurd, 1996). Thus the overall effect of pensions on labour force participation is to increase participation of workers in their early to late 50s (before pension eligibility) and to reduce participation by workers in their early 60s (after pension eligibility).

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[4]The US social security system provides a retirement pension to about 95 per cent of the retired elderly in the US. These benefits can be augmented by employer-provided pensions. About half of the retired elderly receive private pension income, but social security benefits are the most important source of income for a substantial fraction of retirees.

[5]Also, a retiree becomes eligible for Medicare benefits at age 65. Medicare is the public system that provides health-care insurance for retirees.

The effects of occupational pensions on retirement interact with age through eligibility for the state pension. This is shown in Table 6 of Tanner. Among those aged 55–59 in Wave 1 who were eligible for an occupational pension, 30 per cent retired by Wave 2 compared with 18 per cent of those of the same age lacking an occupational pension. As we have seen, some of that retirement is associated with eligibility for full pension benefits at age 60. Among those aged 60–64 at Wave 1, the retirement rates are almost the same — about 70 per cent — regardless of eligibility for an occupational pension. The likely explanation is that both groups become eligible for the state pension at age 65, so that a large fraction of both groups retire, independently of an occupational pension. This interaction of age and pension eligibility is similar to what is found in US data. For example, among workers aged 60–61 (who will over the next two years become eligible for social security benefits), the two-year retirement hazard was just 3 percentage points higher among those eligible for private pension benefits than among those lacking a private pension.

From the comparison of the retirement behaviour of workers with occupational pensions and those without them, Tanner concludes that the continuing trend toward earlier retirement may be partly explained by a continuing growth in the coverage and levels of occupational pensions. There still remains the question about the retirement behaviour of workers who do not qualify for an occupational pension. Their participation rate has continued to fall, and they exhibit a retirement spike at age 60. One possible explanation would involve unemployment: the most striking difference in the circumstances and behaviour of the two groups is associated with the state of being unemployed (Table 6 of Tanner). At Wave 1, about 20 per cent of those lacking an occupational pension were unemployed, and, between the waves, 57 per cent moved into the state ‘other’, which is states of not working but not retired (self-assessed). However, it will have to be an objective of future research to find how such circumstances and behaviour could lead to the trends that are observed in the data.

IV. TRAJECTORIES OF INCOME AND WEALTH

The study of the trajectories of income and assets at pre-retirement ages emphasises income and especially earnings. Topics include wage growth over the lifetime, labour force participation and hours of work, and unemployment. Among a relatively small fraction of the population, transitions onto and off social support programmes are important. Levels and changes in asset income are relatively unimportant compared with earnings, although, of course, the trajectory of assets is of considerable interest because it is an indicator of saving behaviour.

At retirement, the composition of income changes. Earnings fall, possibly to zero, and they are partly replaced with pension income from both public and

private sources. In a life-cycle model, a decline in income at retirement is not necessarily an indication of economic distress: the mix of resources available to finance consumption during the retirement years can vary between those that are measured by their income flows such as pensions and those that are measured by their stocks such as housing. For example, two individuals may be equally well prepared financially for retirement; yet one could have very low income as a result of having substantial financial assets and housing, whereas the other could have high income as a result of having annuity income. To assess economic status, it is necessary to study income and assets jointly.

Housing should be considered separately from other assets: it provides a flow of consumption services; it is a store of value that can be converted to other types of consumption; transition costs are substantial; individuals have sentimental attachment to a particular house; and the rate of return on housing can be quite different from the rate of return on other types of assets. Although the life-cycle model predicts that, as people age, they will reduce housing consumption and want to decumulate housing as an asset, the particular features of housing will complicate the situation. In US data, housing transitions are associated with retirement as people are no longer geographically constrained by their employment. There also seems to be a re-optimisation with respect to size and quality of housing in anticipation of a number of years of residential stability. Another housing transition is observed at widowhood because of changes in space requirements, changes in economic circumstances and changes in the necessity of social support from the family. A similar transition is found in the RS: the paper by Richard Disney, Paul Johnson and Gary Stears reports that a transition to widowhood is associated with a 10 per cent decline in nominal housing wealth. Overall, however, there has not been any clear evidence about whether housing is decumulated as called for by the life-cycle model because we have not had data with sufficient age density to study housing transitions at ages substantially past retirement.

Some of the changes in income and assets following retirement are behavioural and some are due to changes in the environment. The behavioural aspects of annuity income include the choice of whether to take a claim to a private pension as cash or as an annuity, and whether to choose an annuity that has survivorship benefits. Of course, not all workers are offered such choices: in particular, public pension systems do not offer those choices, and many private pensions do not offer them. In the US, most private pension programmes offer a choice of survivorship benefits, and that choice will result in lower benefits while the main beneficiary is alive but higher benefits after widowing.

Inflation can change the real value of a pension stream. The two main issues are whether annuities are indexed and whether the index adequately reflects the inflation rate felt by the elderly. In the US, social security is indexed to the consumer price index (CPI), not to a separate price index constructed to reflect the experience of the elderly. However, Laspeyres price indices constructed to

reflect the particular bundle purchased by the elderly have shown few differences from the CPI in rates of inflation. Of greater importance is whether private pensions are indexed. During the high inflation years of the 1970s and 1980s, some private pensions were adjusted on an *ad hoc* basis, but most are not formally indexed. For this reason, newly retiring workers in the US should anticipate a gradual decline in the real value of a private annuity.

In the RS, real pension income was roughly constant on average between the waves, but there was a differential change associated with the type of employment (Table 9 in the paper by Paul Johnson, Gary Stears and Steven Webb): about 40 per cent of semi-skilled or unskilled workers had a decline in pension income between the waves compared with 27 per cent of professional workers.[6] Table 10 of Johnson et al. shows more directly a differential by level of initial pension: those in the lowest interval were considerably more likely to have had a decline in real pension income. Should these differences persist over a number of years, there would be a considerable widening of pension income inequality.

Both the social security system in the US and the state pension system in the UK have survivorship benefits. An important issue is the level of survivorship benefits compared with the level of benefits of the couple. This is important from the point of view of behaviour because a couple should base its consumption level partly on the annuity a surviving spouse will receive. It is important from the point of view of assessing economic status in the design of public programmes: it would not be desirable to make survivorship benefits either too low because of high rates of poverty in widowhood or too high because of high rates of poverty preceding widowhood.

In the US, social security benefits typically fall by one-third at the death of a spouse. The poverty scale that is used to calculate the poverty rate and to compare economic status across households of differing sizes specifies that an elderly couple needs 26 per cent more income than a single person to maintain the same standard of living. This assumes very substantial returns to scale in consumption: if income fell by 21 per cent at widowing, the widow would be deemed to be as well off as the couple had been. The implication is that a couple whose only income was social security could be above the poverty line but the surviving spouse would be below the poverty line. As an empirical matter, this is important because a considerable fraction of couples have incomes only marginally above the poverty level so that the poverty rate increases at the death of a spouse.

In the UK, it is implicitly assumed in social programmes that a couple needs 67 per cent more income than a single person, implying much lower returns to scale than are assumed in the US. Because income from social programmes is

[6]This way of aggregating individual-level observations is like an instrumental variable method, and it will reduce the impact of observation error.

adjusted at the same rate on the death of a spouse as the change in 'needs', a couple whose only income was a public pension would have no change in the standard of living were one spouse to die. Apparently, a substantial fraction of couples that were widowed between the waves were approximately in this position: in Table 2 of Disney et al., just 72 per cent of new widows had any financial assets at baseline and the median holdings among those with financial assets was just £4,600.

A couple with an additional source of income that did not change at the death of one spouse would have an increase in the standard of living at widowing. Overall incomes of new widows fell by 30 per cent (Table 5 of Johnson et al.). Had they fallen by 40 per cent, the widow would have been deemed to be as well off as the couple had been. The implication is that widowhood was accompanied by an increase in the standard of living. This is, of course, a consequence of the assumption about the degree of returns to scale. For example, if returns to scale in consumption were closer to the US standard, widowhood would have been associated with a decline in standard of living.

According to the life-cycle model, elderly individuals and couples should dissave at old age, but the age at which that happens will depend on utility function parameters and the interest rate. A good guess is that we should observe dissaving when an individual is in his or her early 70s, and possibly earlier. Among couples, the ages of both spouses are relevant so it is harder to make predictions. In US panel data from the 1960s, 1970s and mid-1980s, we do see asset decumulation. These results can be interpreted as supporting the life-cycle model, but the interpretation requires the assumption that the changes are due to behaviour — in particular, that unanticipated capital gains are not important. In an era of steady returns to investments (both interest and capital gains), that may be a reasonable assumption, but in eras of more volatile asset prices, it is not likely to be. In particular, in the UK, housing prices fell on average by 2.7 per cent (nominal) between Wave 1 and Wave 2 of the RS. Correspondingly, housing wealth fell by 22 per cent in real terms (Table 5 of Disney et al.). To find the behavioural aspects associated with the change in housing wealth, we should study transitions in home-ownership, and, conditional on a transition, the value of housing bought or sold, and responses along other dimensions of choice. Examples could be a delay in the age of retirement and a decline in consumption to compensate for the fall in lifetime wealth. These would not be simple studies, but the RS data have the raw ingredients for such studies.

As far as non-housing assets are concerned, we would expect individuals to save during their 50s, and, because children will have established their own households, the saving rate could be at its lifetime maximum. Even in their late 60s, individuals and couples may not have begun to dissave, but at least the rate of saving should decline with age. This kind of pattern is suggested in Figure 5 of Disney et al. I would conclude that the overall patterns of asset change are not inconsistent with the life-cycle model. What is required is to observe further

asset change as the population ages and mortality risk becomes more important, and to observe asset change in a more normal macro-environment, especially with respect to housing prices.

V. DIFFERENTIAL MORTALITY

A correlation between economic status and health and mortality is evident in all three papers. In Tanner's paper, it appears in the reasons given for retirement (Table 7): among those lacking an occupational pension, about 40 per cent gave a health reason (either their own or another's) for retirement compared with 25 per cent among those with an occupational pension. The implication is that those in worse health have less income. In households where both spouses survived between the waves, 64 per cent owned a house, compared with just 46 per cent in widowed households (Table 1 of Disney et al.). In the surviving households, 75 per cent had some financial assets, compared with 65 per cent in widowed households (Table 2 of Disney et al.). And surviving households had about 43 per cent more income from occupational pensions and investments than widowed households (Table 6 of Johnson et al.).

The relationship between economic status and mortality has a number of implications. To the extent that the mortality differences are known by individuals, the life-cycle model will predict that rates of saving will differ by economic status in a way that goes beyond any differences caused by economic status itself.[7] As a cohort ages, average wealth may increase even if each surviving household dissaves. Income and wealth inequality could decrease as the less-well-to-do die. The overall implication is that to understand behaviour, we need to have panel data where we can control for differential mortality in an economic model.

VI. CONCLUSION

As the papers in this symposium have shown, we have learned a great deal from the two waves of the Retirement Survey, and I am sure we will learn a great deal more. Yet the ultimate value of the RS for scientific and policy research will not be realised for many years. In the US, for example, a paper based on data from the RHS was recently published in a leading economics journal even though the final wave of the RHS was collected 19 years ago.

Even as the RS shows the value of a large panel data collection effort, however, it illustrates the value of continued data collection. I believe that serious consideration should be given to initiating a new RS. I say this based on the US experience where, after considerable discussion, the decision has been

[7]Economic status should influence the rate of saving: for example, the life-cycle model predicts that the rate of saving will depend on the mix between bequeathable wealth and annuity income.

made to attempt ongoing panel data collection from the middle- and old-aged population. The HRS, as currently conceived and subject to budgetary considerations and scientific review, will be an ongoing panel dataset that will be 'refreshed' at the bottom of the age distribution by the addition of new cohorts. For example, this year the cohorts of 1942–47 will be added to the cohorts of 1931–41 and the HRS will represent the ages 51 to 67. It is planned to continue to add younger cohorts in the future so as to keep the youngest age in the HRS at about 51.

I can think of at least three major benefits of ongoing data collection. First, from a purely data descriptive point of view, continued data collection will show cohort or time effects in behaviour and will allow monitoring of these effects to inform policy. Second, from a scientific point of view, we can learn a great deal about behaviour if we have data over a period of important policy change or unanticipated economic change. For example, in the US, the age at which full social security benefits can be taken will increase from 65 to 65 plus two months in 2003, and it will increase further by two months per year until it reaches 66. An important rationale for bringing the cohorts of 1942–47 into the HRS was the ability to observe changes in retirement behaviour in response to this policy change. By being in the field in 2003, we can come close to a controlled experiment. The third reason for considering a new panel is the issue of international scientific competitiveness that I mentioned at the beginning of this introduction. A number of other countries have ongoing panel data collections: research in the UK will be at a disadvantage in the absence of a similar effort.

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