Economics of an aging population

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SUMMARY Throughout this century, as in many other countries, the proportion of the British population in the older age groups has increased. The effect this has on the economy is discussed. Topics covered include the determinants of the economic status of old people; the reasons for the choice of retirement ages; the burden of the aged on younger generations; the costs of pension schemes; the disincentive effects of pensions on savings; and poverty in old age.

The changing composition of the population with an increase in the relative and absolute number of old people has been reflected in economists' growing attention to the economics of an aging population and issues related to old age. Among these are the problems of age related pension design and the impact on the rest of the system of financing these pensions; poverty among the aged and their relationship to younger generations; the costs of providing public services for the aged and the tax burden associated with this; and the economic dimensions of the retirement decision itself. Just like the poor, the old are always with us. Some of the issues raised by an aging population which have interested economists are reviewed. The review is by no means complete, and much of the analysis remains in a preliminary stage, but the references will direct the attention of those readers who wish to pursue some of the themes in greater depth.

The picture

In 1900 there were 1·8 million people in the United Kingdom who were classified as "old", that is, over the age of 65 years. By 1984 this number had grown to 8·4 million. Of all households in 1979, 23% consisted of either one retired adult or two retired adults. Between mid 1980 and mid 1996 the number of people over pensionable age (65 for men, 60 for women) will rise from 9·7 million to 9·8 million. This is just a 1% rise. As a proportion of the population those of pensionable age will fall from 17·3% to 16·9% between 1980 and 1996.

The composition of the retired population will, however, change over the period, and this is important for discussions of social policy. Between 1980 and 1996 those aged below 75 years but over 65

will fall from 6·6 million to 6·2 million, while those over 75 years will rise from 3·1 million to 3·6 million (+ 16%). Since the costs to society, through pensions and various public services, of someone over the age of 75 are greater than of those aged between 65 and 75 then this change in the composition of the older population has significance for discussions of future trends in public/social service provisions and public spending.

This picture of a relatively aged population is not confined to the UK, it is common throughout Europe (table 1).

The issues

There are basically two extreme views that are held about the economic status of the aged in modern societies such as those of the UK and the United States of America. First, the elderly are seen as destitute, enfeebled, neglected, and hungry. Against this is the stereotype of the "welllderly" which stresses that most older citizens live in houses that

Table 1 *Aged in Europe*

Country	Population		
	Total	Over 65	Over 65 as %
Belgium	9·9 million	1·4 million	14·2
Denmark	5·1 million	0·7 million	14·6
France	54·1 million	7·3 million	13·5
Germany	61·7 million	9·5 million	15·5
Ireland	2·9 million	0·3 million	11·0
Netherlands	14·1 million	1·6 million	11·5
UK	56·0 million	8·4 million	15·2

Source: *OECD Statistics*

they own, on adequate incomes, in good health, and with sufficient companionship. Which view is correct? The answer must be that both are. There are elderly people who can be found to fall into either group. One of the first lessons to be learned is that it is not useful for policy analysis to treat old people as a single homogeneous section of the population. A more useful approach is to examine how different categories of old people adjust and adapt to a common set of problems. Indeed do all old people face the same problems?

What then determines the economic status of old people? Why are some among the poorest in society? How much inequality or relative poverty exists within the class of elderly people? It is said that a society should be judged according to what it does for its old people, but perhaps this is the wrong way of viewing the issue. Perhaps it would be more relevant to judge a society in terms of the number of old people it makes *dependent* upon the state for their principal source of income. This approach would appeal to those on the political right, who would see reduced dependency in terms of reduced public spending, and would also appeal to those on the left who want less of a dependency relationship.

Another issue relates to the question of what determines the definition of "old age". This is related to the nature of the retirement decision which is itself an important economic element in the individual's life cycle. Frequently old age is socially defined as reaching retirement age; but this must be recognised as a social convention with little real meaning attached to it. The old are powerless in many cases to prevent themselves being made "unemployed" when they reach the statutory age of retirement. It is possible to distinguish between retirement and unemployment in name only. Many regard this as the "tyranny" of age barrier retirement.

Both economic states, retirement and unemployment, are situations to which individuals have to adjust. Also, it is possible for governments to adjust their unemployment figures through devices such as early retirement by not counting those taking early retirement as being unemployed as did the 1979/83 Thatcher government in the UK. Many public sector organisations have managed to balance their budgets through schemes such as voluntary early retirement. By setting the economic incentives at the correct level, individuals can be persuaded to take retirement. This process sounds more socially and politically acceptable than would a process of "redundancy".

Why does society wish to retire people at age 65? It was a convention established by the architects of the welfare state. In recent times, however, that convention has been rationalised by other

arguments, for example, older workers' marginal productivity is lower than that of younger workers because their skills have been depreciated. This is a curious logic since it cannot apply to those individuals who are continually learning by doing, updating their knowledge, and learning new skills. Moreover, the stock and wealth of accumulated knowledge and experience is greater in many older workers. In an hierarchical organisation older workers block the career prospects of younger workers. Clearing older workers out of positions of seniority at a specific time relieves the system but that is only one of a number of conventions that could be used. For example, another rule might be that no individual can occupy a position of top level decision making within an organisation for more than five years. While this would allow a circulation of expertise within an organisation, it does nevertheless cut across the whole structure of social status within modern societies.

These attitudes towards the aged influence many other economic decisions. For example, in cost benefit studies of road investments, or fire regulations, or any project involving a reduction in the risk of human deaths, a monetary value has to be placed on a human life. Whether or not that is desirable or a meaningful thing to do is a separate issue. What is of interest is whether or not all lives are equal in terms of monetary value. For example, £1000 is to be invested in some new piece of medical equipment, and the choices facing the decision maker are to invest in either a project that saves the life of young people or one that saves the lives of older people, how can that decision be made? Some might argue that no one should be placed in such a dilemma to make decisions of that type, and that sufficient resources should be allocated to all life saving projects. That argument is meaningless because there are insufficient resources available to satisfy all the needs of such possible projects. Choices have to be made: but how?

Cost benefit analysis is a technique that compares the monetary value of the benefits of a project with its costs. If these costs and benefits are spread over time, then they have to be discounted by some appropriate rate of interest in order to make the costs and benefits in different time periods compatible. One of the major benefits in a project, which has the potential of saving lives, is the discounted present value of life itself. By convention the value that is considered is the value of that life to society. This is measured by considering the value of output that the individual would have contributed to society (on average) over his/her lifetime. Thus a young person aged 25 would have had 40 years of productive effort to contribute to society whereas some men aged 64 would have

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only one year. The *economic* value of the young life is thus 40 times that of the older life.

This is an over simplified account of how the calculation is actually made. The sophistication of the calculation does not, however, detract from the essence of making the decision. Leaving aside all of the ethical questions—which are of obvious importance—decision making based on this kind of logic has important implications for the allocation of resources between age groups in society. If it is always shown on cost benefit terms that the benefits greatly exceed the costs on projects for the young but that there is a deficit of costs over benefits on projects for the old, then the old will always be disadvantaged.

Perhaps this is the implicit calculation that many make when deciding whether some scarce medical treatment (eg, renal dialysis) should be allocated to a young or an old person.

Finally, are the old a “burden” on younger generations? In the climate of the current debate it is frequently argued that maintenance of the aged will place a heavy economic burden on the resources of younger generations today and in the foreseeable future. This burden is the basis of the forthcoming “crisis” in the welfare state in the early part of the 21st century. The resources will not be available to finance pensions and old age related social services. It is appropriate to ask if this is a reasonable view of things to come, especially since it is not a particularly new debate but old wine placed in new bottles.

The costs of providing services to those over the age of 75 years are proportionally greater than to those who are younger. In 1979 the Public Expenditure White Paper showed that spending per head on health and social security services for those over the age of 15 was £339 per annum whereas for those who were 75 years plus it was £555 per annum. The number aged 75 and above is expected to rise by 16% between 1983 and 1996, from 3.1 million to 3.6 million. On the basis of these figures it is felt that the aged will become an increasing burden.

It should, however, be realised that this increase in social spending on the aged would require only a 1% per annum increase in productivity (on average) for the whole economy. There is every reason on past performance to suppose that this is realisable, especially given that the number of individuals who will be joining the labour force will be increasing up to the end of the century, without taking technological change into account.

In table 2 the support ratios (ie, the estimated number of working people needed to support each retired person) are shown. As can be seen, this “burden of the aged” thesis is not supported.

The burden placed on the welfare state comes not only from the number of aged consuming public

Table 2 *Support ratios 1979–2029*

1979	1989	1999	2009	2019	2029
3:34	3:44	3:59	3:62	3:35	2:94

Source: *Government Actuary Quinquennial Review 1982*

services. In recent years stresses have come from the number of registered unemployed who have more than doubled over the past 10 years. A 50% reduction in the number unemployed would be enough to finance any increases in welfare spending arising from the aged. While this will not be easy to achieve there is every prospect that by the end of the century unemployment will have reduced and the burdens that are currently being debated will be seen in a new light. Moreover, the child dependency ratio should fall, given recent demographic trends. In total then there is little evidence to substantiate the notion that intolerable economic burdens will be placed on future generations due to current demographic changes.

The costs of pension schemes

While demographic changes might not, in themselves, give rise to financial burdens, the way in which pension schemes have been formulated might. This seems to be the generally held opinion regarding the State Earnings Related Pension Scheme. It is clear that the expectations of this scheme are that our children will treat us more generously through income transfers than we treat our own parents. The writing of implicit social contracts of this kind is a fascinating topic since it involves massive intergenerational transfers of income without future generations having been consulted when the contract was written. What happens if they decide that they will not or cannot honour them?

The costs of the various pensions, SERPS, and the Basic State Retirement Pension (BSRP) are shown in table 3.

Clearly, from these statistics it is the build up in the cost of SERPS that is giving the greatest concern.

There is, however, another set of costs of interest to the economist and seldom thought about by others. These are the costs of the impact of pension

Table 3 *Pensioners and pensions*

	1985–86	2005–6	2015–6	2025–6
Total pensioners	9.4 million	9.2 m	10.2 m	11.2 m
Cost SERPS (£m)	313	3762	5 971	7 718
Cost BSRP (£m)	12 293	11 974	13 266	14 782

Source: *Government Actuary Quinquennial Review 1982*

and social security decisions on the rest of the economy—the disincentive effects of pensions. For example, if individuals know that a pension will be paid to them in their old age, then they might not save during their working life, and so will consume instead. The savings rate for the economy falls as will also the rate of investment, productivity growth and economic growth generally. These disincentives are a hidden cost to the economy.

In recent years, attempts have been made by economists to estimate the disincentive effects of pensions on savings. Feldstein found evidence for strong disincentives in the USA, but this work has been questioned on the grounds of the data and techniques used.¹ Hemming found no disincentive effects for the UK. Work in this area is ongoing and inconclusive.²

Poverty and the aged

Poverty and deprivation among the aged have been recognised for a long time and continue to be a topic for study.³⁻⁹

Twenty-five percent of old people have incomes equal to or below the poverty line. Table 4 shows the income profile of pensioner families. They are the largest social group who exist in a state of poverty and deprivation (5% of the non-aged live in poverty). A similar pattern is found in North America,¹⁰ and the situation in both absolute and relative terms is worst in developing and third world countries. Walker¹¹ has argued that poverty in old age is a topic that is ignored by gerontological researchers and is often presented as if it is something that governments have already solved—see Green Paper *A Happier Old Age* DHSS 1978.

It is generally believed that low incomes are an inevitable state of old age and one that must be adjusted to. This view is legitimised through the standard social theories of aging, although the economic status of the aged is obviously not unrelated to their status before retirement.¹² Thus pensioners are not equal and should not be treated as an homogeneous group. Inequality among pensioners derives from a variety of causes, but

essentially they are the life chances in earlier employment which determine the stock of economic endowments including (i) the value of one's home, (ii) pensions rights, and (iii) stock of savings. White collar occupations carry occupational pension rights which Titmuss⁸ long ago warned would give rise to inequalities. In the 1930s 2.6 million people contributed to occupational pension schemes compared with 11.5 million, or 50% of the work force, in the 1970s. Manual workers have limited access to occupational pensions and when they do they are on less favourable terms—they are less likely to receive a lump sum on retirement or have their pension tied to final salary. The average amount of a pension for professional and managerial workers is five times that for an unskilled manual worker.

Earnings-related pensions, therefore, maintain pre-retirement inequality after retirement. Moreover, they create inequalities between individuals who retire at different dates if the pension is not indexed. For instance, someone retiring from an earnings related scheme in 1974 will receive a lower pension than someone retiring in 1984. Inflation exaggerates these inequalities, not only between individuals with different classes of pension rights, but between pensioners and non-pensioners. Also, those who were ill during their employment phase or who were unemployed for spells will have made less than the appropriate number of contributions to the scheme. Their pension will therefore, not be so large. Misfortune early in life is thus carried forward into old age. The different categories of pension rights and eligibilities are a complex subject but one that is ripe for study by those concerned about matters of social justice.

The pensions jungle makes people poor. There are many (104 000 in 1981) who received supplementary benefits without a retirement pension. In 1981, 750 000 married women did not receive a pension because their husbands had not retired. Those with deficient contributions do not receive a full pension, and this includes widows whose husbands' contributions were deficient. Married women whose husbands are still alive, receive lower pensions if their husbands' contributions were deficient through ill health, temporary unemployment, etc. On average, a married woman's pension is 60% that of a single person. Whether or not these pensions are optimal let alone just is an open question.

Conclusion

I have managed to do no more than give a brief overview of *some* of the economic issues of an aging population. The topic is comparatively new, if the subject matter is not, and in the next few years

Table 4 *Profile of pensioner incomes*

	Below SB*	At or to 10% above SB	11%–20% above SB	21%–40% above SB	Total with income below 140% SB
Married couple	10.4%	12.1	10.0	23.4	55.9
Single people	15.4%	7.9	9.1	20.0	52.4

SB = supplementary benefit and includes heating additions where applicable.
Source: *Families with Low Incomes*: DHSS—1981

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research results will fill in gaps in our current knowledge. Men and women who retire from the sphere of paid employment may nevertheless remain actively involved as important contributors to the economy. This involvement can take a variety of forms, and its importance should not be underestimated. In addition to part-time work, the elderly also provide child minding services to other members of the family or to friends, thereby releasing additional labour resources. This trend, however, has been halted somewhat in recent years, and the phenomenon of an aging population in a period of high unemployment is historically new.

An understanding of the effects of the demographic shifts, outlined in the paper, on the pattern of demand will assist policy makers when planning social expenditure for the aged, especially in the areas of housing, health, personal social services, and social security. We know with certainty that the aged will be with us, the issue is how best to plan for them. This is simple to state but it raises a number of interesting questions such as what will be the demands for these services over the next 20 to 40 years? Since those currently young and middle aged

will become the consumers of these services do we really know *now* what we will want then?

References

- ¹Feldstein M. Social security, induced retirement, and aggregate capital accumulation. *Journal of Political Economy*, 1974; September/October.
- ²Hemming R. *Poverty and incentives: The economics of social security*. Oxford University Press, 1984.
- ³Booth C. *Pauperism: A picture and the endowment of old age: an argument*. Macmillan, 1892.
- ⁴Booth C. *The aged poor: Condition*, Macmillan, 1892.
- ⁵Townsend P. *Poverty in the United Kingdom*. Allen Lane, 1979.
- ⁶Layard R, Piachaud D, Stewart M. *The causes of poverty*, Paper No. 5. Royal Commission on the Distribution of Income and Wealth, HMSO, 1978.
- ⁷Shanas E, Townsend P, Wedderburn D, Friis H, Milhøj P, Stehouwer J. *Old people in three industrial societies*. Routledge, 1980.
- ⁸Titmus RM. *Essays on the welfare state*. Allen and Unwin, 1963.
- ⁹Wicks M. *Old or cold*. Heinemann, 1978.
- ¹⁰Hendricks J, Hendricks CD. *Aging in mass society*. Cambridge: Winthrop, 1977.
- ¹¹Walker A. Towards a political economy of old age. *Aging in Society*, Vol. 1 (1), March 1981.
- ¹²Goldthorpe J. *Social mobility and class structure in modern Britain*. Oxford University Press, 1980.