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# DEPENDENCE AND POPULATION AGEING

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## Abstract

Population ageing has often been summarised through rising old-age dependence ratios. Age is therefore perceived as a source of dependence, which supposedly causes economic problems. While these perceptions seem intuitive, they are open to query and may be misleading. The current chapter looks at how we define dependence, how it relates to ageing, and whether it should be regarded as bad for the economy.

**Keywords:** dependence, population ageing, capability, economic activity, unemployment

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## **Introduction**

A population is ageing when its average age increases and the elderly become a larger proportion of the total. Population ageing is a comparatively rare and recent trend, observed on a wide scale only in developed countries since the late nineteenth century. It is expected to continue until well into the twenty-first century, eventually culminating in a permanently larger proportion of elderly people (OECD 1988). At present the developed countries are half-way through a long-term transition towards a more aged population.

The onset of population ageing provoked surprisingly little comment, despite its unprecedented nature. Policy debate in the United Kingdom dates largely from the Beveridge Report (Beveridge 1942), several decades after population ageing first appeared. Since then there have been two main periods of interest: in the 1940s and 1950s following on from the Beveridge Report (Royal Commission on Population 1949; Hopkin 1953; Paish and Peacock 1954; Titmuss 1955), and in the 1980s (Ermisch 1981, 1983; Fogarty 1982; Hemming and Kay 1982; Phillipson and Walker 1986; Wells and Freer 1988). The debate has never been prompted by the population statistics alone, and the lull in interest in the 1960s and 1970s was a reaction as much to the economic and political climate as to demographic change.

The idea of dependence often features prominently when population ageing is discussed. The elderly are portrayed as 'dependent' on the working population, 'supported' by them, and imposing a 'burden' on them; population ageing may lead to a 'crisis' of growing dependence, in which it is increasingly difficult to meet the needs of the retired and disabled elderly. If dependence is to be the cornerstone of the discussion of ageing, it has to be a well-defined characteristic, related positively to age, and relevant to the objectives of policy. None of these properties is obvious, and they merit closer inspection.

## **Defining dependence**

The word 'dependence' has been used inconsistently in both academic and popular discourse, acquiring many interpretations (Walker 1982). In aggregated studies the most frequent method is to dichotomise the population, on the basis of a single, observable indicator of dependence. The higher the 'dependence ratio' of dependent to independent, the greater are the per capita demands on the independent population.

Economic definitions of dependence commonly centre on the formal production of goods and services, as recorded in the national accounting procedures. One possibility is to equate dependence with the receipt of goods and services produced by other people; that is, with the absence of self-sufficiency. Outside a hypothetical, autarkic (non-)society, all individuals are dependent according to this definition. The vast majority of goods and services consumed in an industrial economy are produced by others, an interdependence tolerated as a harmless by-product of specialisation and a sign of high productivity. The dependent/independent distinction is scarcely feasible at the individual level, and applications have to be collective. Those who undertake formal production are classified as employed, allowing them to be identified as the 'producers' of goods and services. The employed can then be deemed a collectively independent group, on which all non-working groups are dependent. Such a 'real' definition of dependence, resting on involvement in formal production, is liable to be correlated with financial dependence on the state through the receipt of transfer payments. Financial and real dependence are not identical, however, and in the current discussion dependence denotes the lack of formal employment.

With dependence so defined, one can calculate dependence ratios from economic and demographic data. The simplest versions assume a perfect age-dependence relation, dividing the population by the statutory school-leaving and retirement ages; more sophisticated versions introduce other information, for example, age-specific activity or employment rates (Falkingham

1989). The belief that age indicates dependence sustains all demographic dependence ratios, and its validity is considered below.

## **A scheme of analysis**

Unlike dependence, age is an individual rather than social characteristic. The relation between age and dependence is not immediate, and nothing in the definition of dependence implies that an elderly person has to be dependent.

Why, then, is age so often seen as causing dependence? An answer must begin with physiological ageing, the fundamental biological constraint on the life cycle of individuals. For the constraint to bear on dependence it has to pass through three intermediate stages, shown schematically thus:

Age → Capability → Economic activity → Employment → Independence

Age directly influences 'capability', in the sense of the capability to perform physical and mental activities (resembling its usage by Sen 1980). Capability is zero at birth, increases during the early part of the life cycle, and declines towards zero at death. A certain minimum capability permits economic activity, construed as the availability for employment through membership of the registered labour force. Economic activity is in turn a precondition for employment, which is synonymous with independence. Following the arrows in the scheme gives a 'common-sense' answer to the initial question. Increasing age means a higher chance of becoming incapable, which rules out economic activity, prevents employment, and produces dependence. Age thereby 'causes' dependence.

The true age-dependence relation is less straightforward. The next two sections discuss the scheme of analysis in more detail.

## **Age and economic activity**

The link between age and capability underlies any consideration of ageing, expressing the biological processes of birth, growth, decay and death. Ageing always ends in a loss of capability, yet the speed and timing of the loss remain variable. Capability declines principally through worsening health, the elderly being more vulnerable to chronic, debilitating disease than the young. There is no consensus on a definitive age-health profile, and future prospects are uncertain. Optimists claim that preventive and curative medicine will bring about a 'compression of morbidity' and completion of the 'natural' life span (Fries and Crapo 1981); others take a less sanguine line (Brody 1985). Studies of work performance have not confirmed the predicted effects of age, finding that in some respects the aged perform better than the young (Welford 1958). From casual observation, large differences in individual capabilities are apparent within an age-group. The experience of ageing is fashioned by external factors, such as income, living standards, social and medical services, and a person's general environment. Hence, while founded on human biology, the age-capability link is far from absolute. 'Capability' itself is hard to define as a single entity, and people can have different capabilities for different activities, all varying continuously over time. Capabilities must decline with age, but their decline is not fully synchronised, even for a single individual; the range of variation increases when diverse individuals and societies are compared. Generalisation about an age-capability link is difficult.

The next link joins capability and economic activity. Although exceptions are possible, a minimum capability is usually necessary for economic activity: the registered labour force has to be available for, and capable of, employment. The number of capable individuals in the

population is an upper bound to economic activity, the pool of potential contributors to recorded production. In practice the relevance of capability to economic activity is reduced by the many capable individuals who are economically inactive. They can be divided between those of normal working ages and those who are retired.

Within the normal working ages some capable individuals who are expected to be economically active are not part of the registered labour force. A relatively small group has enough unearned income to make economic activity superfluous. Numerically greater are members of households with one or more individuals already working, whose employment is not needed as the household's sole income source. This group is mostly female and undertakes extensive informal economic activity, including informal care of the elderly. The absence of informal care from national accounts can give a biased impression of the consequences of population ageing, overemphasising formal provision (Williams 1985). Much of the 'burden' of the elderly is carried by capable individuals who are themselves dependent according to an employment-based definition; ironically, their economic inactivity stems from an activity highly pertinent to the matter in hand. A wider perspective of economic activity is essential for a comprehensive treatment of population ageing.

The other major group of capable, economically inactive individuals lies outside the normal working ages. Statutory school-leaving and retirement ages are institutional arrangements, devoid of physical meaning. A person does not lose the capability of employment on the day of retirement, and many retired people could easily be economically active. Modern formal retirement practices are exclusively age-related, bypassing physical criteria and the notion of capability. The institutional structure strengthens the age-economic activity relation, without representing any biological compulsion. The last hundred years have witnessed a trend towards earlier retirement (Johnson 1985) inexplicable by declining capabilities at a given age. Instead, individuals encounter a common institutional setting which encourages, or in some cases enforces, a common pattern of economic activity. The role of the state and society in the age-economic activity relation has been termed the 'structured' dependence of the elderly

(Walker 1980; Townsend 1981): coupled with low pensions, involuntary retirement creates dependence in old age and promotes a supposition that the elderly are incapable. Debate over the retirement age has habitually neglected its impact on the individual, focusing on its macroeconomic function as a regulator of aggregate labour supply. In the post-war period of low unemployment the tendency was to advocate later retirement, as an increase in the supply of labour; in more recent years high unemployment has enhanced the attractions of earlier retirement, as a reduction in recorded unemployment. Changing attitudes to retirement, which often have little to do with individual or population ageing, can alter substantially the fortunes of the elderly. Ageing is a social as well as physical process, contingent on specific social and economic circumstances.

## **Economic activity and independence**

When unemployment exists there is a distinction between economic activity and employment, and to be economically active no longer guarantees independence. Population ageing is sometimes discussed under full employment assumptions, because of its long-run character. Past experience does not suggest that full employment will be attained, however, and some consideration of unemployment as a source of dependence is appropriate.

An economy at full employment may be demographically constrained, its production limited by the size of the labour force; an economy with unemployment, by contrast, can have no aggregate labour shortage. If unemployment prevails, then the economy is operating with a true dependence ratio higher than necessary on demographic grounds, leaving some slack in the economic system. Surplus labour is the opposite of the concerns about an inadequate working population: the working population is more than adequate for current requirements. The age composition is here only part of the dependence question, and hardly deserves to be the sole



subject of discussion. Before it becomes truly noteworthy, a demographic constraint has to be rendered binding through the efficient utilisation of labour.

One might ask whether population ageing increases dependence by encouraging unemployment, rather than raising the incidence of retirement. In the 1930s it was feared that decelerating population growth in the industrial economies would cause long-run deflationary pressure from reduced investment, worsening the depression (Keynes 1937; Reddaway 1939; Hansen 1939). An established relation of this sort might justify a demographic method, albeit a different method from a retirement-centred approach. Whether or not the long-run deflationary fears are valid, in the shorter term population size and composition are not the prime determinants of unemployment. In explaining the resulting dependence one has to appeal to factors other than demographic change.

The important point is that dependence does not derive entirely from changing age patterns, but is generated by the workings of the economy. Alongside the economically inactive, the unemployed are a further dependent group, which cannot reasonably be ignored. The rate of change of dependence incurred by unemployment is far greater than that incurred by population trends: for the UK the rise in unemployment in the single year 1980-81 approximately equals the number of additional pensioners expected in the twenty-year period 1980-2000. Anyone concerned about the 'burden' of the elderly should be at least equally concerned about the 'burden' of the jobless. The logic of reducing dependence means minimising unemployment, and a failure to do so sits uncomfortably with alleged concern about other sources of dependence. Once unemployment is removed, population has a greater influence on the economy: an argument invoked, for example, by Easterlin (1980). Until this happens some of the economically active will continue to be dependent and will have to be included in aggregate dependence.

## **The significance of dependence**

Even if demographic change does entail a growing dependent population, there is still doubt over the significance of dependence. To speak of a 'crisis' presumes the undesirability of rising dependence, a conclusion which is not self-evident.

Associated with policy recommendations there must be an objective by which responses to population ageing are assessed. Aggregate dependence measures can help in evaluating policy only if they clarify the analysis. An instant semantic obstacle arises, since the vagueness of the word 'dependence' permits a variety of alternative meanings. 'Dependence' has never had a standardised, technical definition, so formal studies using the word have to supply their own. A further difficulty is the intrusion of implicit values. Dependence has negative overtones, which may or may not be intentional. When dependence is presented as a problem it is not always clear whether it is a bad thing in itself, or merely a cause or symptom of economic and social ills. Some authors, for instance, would regard dependence as intrinsically bad and to be avoided where possible; others would regard it as undesirable if combined with poverty or 'excessive' tax rates, but not itself a problem. The ambiguity of dependence spreads to its normative as well as substantive meaning. A particular definition should be warranted by its relevance to a declared objective, on which any policy conclusions are conditional.

Definitions based on formal employment have the advantage of observability, ensuring that they can be readily applied. Against this must be set the omission of much relevant activity, and an indifference to the types or degrees of dependence. To omit informal economic activity distorts the costs of care, counting a transfer of care from formal to informal sectors as a saving of resources, whatever the true position. The remedy is to introduce informal activity into economic analysis; comparison with formal activity may be troublesome, but it cannot be sidestepped by discarding the whole informal sector. Also problematic is the single dependent/independent classification, which labels individuals as belonging to one group or the other. Dependence can occur in numerous dimensions: a person can be dependent on others

through receipt of money, material goods, personal care, medical services, and so on. The dimensions do not coincide, and may even conflict: for example, an increase in financial dependence through raising and extending pensions may reduce dependence on personal care or benefits in kind. Within separate dimensions there are varying degrees of dependence, which ought to be weighted in aggregate measures. Dependence in reality is continuous and multidimensional, making the borderline between the dependent and independent gratuitous. Greater detail is achievable only by the recognition of different types of dependence, avoiding a crude categorisation of the population. A discrete, unidimensional definition of dependence is worthless if it overlooks key information.

Demographic change is a collective, not individual, phenomenon, and discussion of its consequences has to be rooted in a particular social and economic environment. Studies of population ageing are apt to concentrate on certain topics, frequently pensions or medical care, with policy recommendations tailored accordingly. Partial studies of ageing may have value, but they do not cover its full breadth. An excessive specialisation risks prejudging the possible means of accommodating demographic change and underestimating the interaction with other economic issues, such as employment and economic growth. The choice of items on the policy agenda is an important initial task, which perforce reflects the social and economic background to the discussion. Ideally, commentary on demographic change should be wide-ranging and subtle enough to encompass the many complexities involved. This is asking a lot, and policy advice needs to be offered, and heard, with caution.

## **Conclusion**

Population ageing can all too easily be depicted as a 'natural' cause of dependence, the growing numbers of the elderly inevitably imposing an ever-increasing 'burden' on the working population. The image may seem at odds with the notion of a 'dependence culture', given that it

stresses biological necessity rather than individual choice. The two views nevertheless share a reluctance to acknowledge dependence as a socially created state originating in the structure of the economy and society in general. Old people are affected not just by physiological ageing, but by social attitudes to age and by the institutionalised norms of economic activity and retirement. To see dependence as the outcome of physical incapacity or individual choice is oversimplified, neglecting the wider social aspects.

A narrowness of scope is unavoidable in a discrete division of the population into dependent and independent groups. Within industrial economies all members of society are interdependent, and to isolate a single criterion of dependence is arbitrary and potentially misleading. A more complete discussion of population ageing should attempt to allow for different sources and types of dependence, and the connections between them. Bearing in mind the mediating role of the social and economic structure, it is best to integrate discussion of population ageing with the problem of planning for long-run structural change. Reference to a 'crisis' of dependence may serve to dramatise and draw attention to population ageing, but it is unlikely to contribute to a dispassionate assessment of policy.

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