Volume Title: Social Security Programs and Retirement around the World: Historical Trends in Mortality and Health, Employment, and Disability Insurance Participation and Reforms

Volume Author/Editor: David A. Wise, editor

Volume Publisher: University of Chicago Press

Volume ISBN: 0-226-90309-5; 978-0-226-90309-5

Volume URL: http://www.nber.org/books/wise11-1

Conference Date:

Publication Date: September 2012

Chapter Title: Disability, Health and Retirement in the United Kingdom

Chapter Author(s): James Banks, Richard Blundell, Antoine Bozio, Carl Emmerson

Chapter URL: http://www.nber.org/chapters/c12382

Chapter pages in book: (p. 41 - 77)

1

Disability, Health, and Retirement in the United Kingdom

James Banks, Richard Blundell, Antoine Bozio, and Carl Emmerson

1.1 Introduction

Two potentially contradictory trends have been identified as populations around the world have been aging in recent years. On the one hand, improvement in health has led to nonabated increases in life expectancies. On the other, health conditions and disability have become seen, more than ever, as the main obstacle to longer working lives. This apparent paradox is at the core of policies aiming to encourage longer working life as various institutional settings (state pensions, disability benefits, and unemployment insurance) interact with changes in health status and labor market conditions. Previous research has highlighted the impact of financial incentives of pension systems across a number of developed economies (Gruber and Wise 1999, 2004) but much less is known on the role that other pathways to retirement and changes in health conditions have played.

James Banks is professor of economics at the University of Manchester and deputy research director of the Institute for Fiscal Studies. Richard Blundell is the Ricardo Professor of Political Economy at University College London and research director of the Institute for Fiscal Studies. Antoine Bozio is a research fellow at the Institute for Fiscal Studies and director of the Institut des politiques publiques (IPP) at the Paris School of Economics. Carl Emmerson is deputy director of the Institute for Fiscal Studies.

This chapter forms part of the International Social Security Project at the NBER. The authors are grateful to the other participants of that project for useful comments and advice. We are also grateful to the ESRC-funded Centre for the Microeconomic Analysis of Public Policy at IFS (grant number RES-544-28-5001) for funding this project. Material from the Family Expenditure Survey and the Labour Force Survey was made available by the UK Data Archive and data on mortality rates from the Human Mortality Database (available at www.mortality.org) and from the Government Actuary's Department (GAD). Any errors are the responsibility of the authors alone. For acknowledgments, sources of research support, and disclosure of the authors' material financial relationships, if any, please see http://www.nber.org/chapters/c12382.ack.

The United Kingdom is a fine example of these interactions. With stricter unemployment benefits and relatively few early retirement schemes (Banks et al. 2010), disability benefits have over time come to represent an important pathway to retirement. At the same time, life expectancy has been rising continuously while measures of self-reported health or disability do not seem to exhibit similar improvements. As a result, disability benefits have come to the top of the policy agenda with reforms following each other at a very rapid pace since the mid-1990s: a major reform in 1995 was followed by important changes in 2000, 2001, 2003, 2006, 2008, and most recently 2010.

When one considers the degree of policy interest for this issue, one could be surprised at the limited literature on the subject in the United Kingdom. The main reason behind this is not the lack of interest from economists, but more the lack of suitable data that combine information on the labor market situation and comprehensive measures of health and disability. Most early research had to rely on self-reported measures of incapacity for work and benefit receipts. The obvious problem is that self-reported measures of disability could be affected by benefit receipt and therefore offers limited explanatory power (Myers 1982; Bound 1991). The main result from this early literature (Doherty 1979; Fenn 1981; Piachaud 1986; Disney and Webb 1991) was that both disability benefits and self-reported disability were linked to the labor market conditions: increased unemployment seemed to lead to an increased number of claimants of disability benefits and increased self-reported disability. More recent research (Benítez-Silva, Disney, and Jimenez-Martin 2010) has confirmed this relationship between the business cycle and the incidence of self-reported disability and provided more insights to the mechanisms involved, showing that unemployment had a large impact on the outflow rate out of disability benefits. Increasingly, researchers have tried to go beyond measures of self-reported health to capture the impact of more objective measures of health shocks. Disney, Emmerson, and Wakefield (2006) have, for instance, used panel data to construct instruments for self-reported health, showing that health shocks were important predictors of movements in and out of paid work among those approaching the state pension age in the United Kingdom. In an alternative approach, anchoring vignettes have been used to try and control for group or country-specific reporting effects on subjective health and work disability, with particular application to international comparisons (see Kapteyn, Smith, and van Soest [2007] or Banks et al. [2008], for example).

This chapter examines changes in health and disability-related transfers in the United Kingdom over the last thirty years, and describes how they are related to changes in labor force participation. The objective is to present a comprehensive description of the reforms to the institutional setting, along with available time series coming from administrative data on benefit receipt, cross-section or panel data on self-reported health, and their interactions with labor force status. By providing systematic evidence on institutions and

data, we hope to help future research by providing a fuller picture of the trends over this period. We also present evidence on the impact of two large reforms to disability benefits that help shed light on the long-term changes in disability prevalence in the United Kingdom.

Section 1.2 presents the evolution of transfers targeted toward people with disabilities in the United Kingdom, focusing on recent reforms and the distinctive features of these benefits compared to their equivalent in other countries. Section 1.3 shows the evidence available on the different pathways to retirement in the United Kingdom, while section 1.4 presents evidence on various health measures, including mortality and self-reported health, and contrasts these evidences with labor market outcomes. Section 1.5 presents evidence on two major reforms of the UK disability benefit system, the 1995 reform and the more recent "Pathways-to-Work" program. Section 1.6 concludes.

1.2 History of Transfers Targeted Toward People with Disability in the United Kingdom

Disability is a difficult characteristic to define. The traditional approach in the literature has rested on the pioneering work from Nagi (1965, 1991) who identified three components of disability: a pathology, an impairment, and an inability to perform expected activities.[1] This approach leads to the view of disability as a permanent condition, completely separated from sickness, which is defined as a temporary incapacity. This distinction between permanent and temporary conditions has not been instrumental in the design of the UK benefit system. Historically, as this section will describe in more detail, sick and disabled individuals were all covered by sickness benefits, the only distinction coming from the duration of claims. As a result, the focus has been more on long-term sickness than on disability. In order to facilitate the comparison with other countries, we present the benefits available both to the short-term sick and to the long-term sick or disabled.

Transfers targeted toward the long-term sick or disabled in the United Kingdom are a complex set of benefits that have evolved over time and have been relabeled multiple times. To clarify this institutional setting with a jungle of acronyms, it is helpful to distinguish four types of disability benefits: work-related injury benefits, disability insurance, non-contributory benefits, and means-tested benefits (Creedy and Disney 1985; Burchardt 1999).

1.2.1 Work-Related Injury Benefits

Compensatory benefits, for injuries at work or during wars, were historically the first ones to be implemented in the United Kingdom with the

1. See Bound and Burkhauser (1999) for a review on these definitions and the implications for the measurement of the population with disabilities.

enactment in 1897 of the Workmen's Compensation Act, which established the legal liability of employers to compensate employees for loss of earnings capacity as a result of an accident or disease linked to employment (Walker 1981; Walker and Walker 1991). During World War I a state scheme, the War Disablement Pension, was introduced to offer compensation to veterans of Her Majesty's (H.M.) Armed Forces. It was followed in 1948 by the Industrial Injuries Disablement Benefit (IIDB), set up by the National Insurance Industrial Injury Act 1946.[2] Both schemes still exist today and have only been marginally changed over time.[3] They offer more generous benefits than other disability benefits, are not means-tested, and can be cumulated with other benefits.

1.2.2 Disability and Sickness Insurance

The second type of disability benefits is earnings replacement benefits. The UK schemes share some characteristics of other countries' sickness and disability insurance but also have two defining features inherited from their origin.

First, they are not really insurance schemes, as generally understood. The welfare system put in place in the United Kingdom in 1948 largely followed the design of the Beveridge report (Beveridge 1942). It relied on an insurance principle, whereby eligibility to benefits was determined by contribution requirements, but benefits were not earnings related, unlike the US Social Security Disability Insurance (SSDI) or examples in Continental Europe. As a result, the system has largely been targeted at low income individuals for whom flat-rate benefits represented a large replacement rate.[4]

Second, the UK system has not formally recognized permanent disability conditions. The benefit set up in 1948 was called *Sickness Benefit* and offered a benefit with unlimited duration.[5] Hence the coverage for disability was not distinguished from short-term sickness, and only duration of claim could distinguish the long-term sick from the short-term sick.

Table 1.1 presents the evolution of these schemes from 1948 to 2010 ac-

2. The rate of the IIDB in 2009 to 2010 was £143.60 per week (or $12,000 annually) for an extent of disablement of 100 percent and those over eighteen. The benefit is reduced proportionally with the disablement.

3. The IIDB was originally split into Industrial Injury Benefit (IIB) for the first twenty-six weeks of sickness and Industrial Disablement Benefit for longer durations. In April 1983, IIB was abolished and replaced for the first eight weeks by employers' Statutory Sick Pay (SSP) and the sickness benefit for durations between nine and twenty-five weeks (see section 1.2.2 for more details on SSP).

4. There is a short period between 1966 and 1980 when earnings-related sickness benefits were introduced, but this social insurance experiment was both limited and short-lived.

5. The system introduced after World War II is also largely the heir of the general sickness insurance introduced by the National Insurance Act 1911. It provided sickness benefits payable for twenty-six weeks along with a disability benefit and some health care benefit. All these benefits were distributed through approved Friendly Societies, but the scheme largely paved the way for further state interventions (see chapter 2 of Creedy and Disney [1985], and Gilbert [1965]).

Table 1.1 **Structure of benefits in the United Kingdom by duration of incapacity (1948–2010)**

	Duration of incapacity to work			
	1–8 weeks	9–28 weeks	29–52 weeks	More than 1 year
1948–1971	Sickness Benefit	Sickness Benefit	Sickness Benefit	Sickness Benefit
1971–1982	Sickness Benefit	Sickness Benefit	Invalidity Benefit (IVB)	Invalidity Benefit (IVB)
1983–1985	Statutory Sick Pay (SSP)	Sickness Benefit	IVB	IVB
1986–1995	SSP/Sickness Benefit	SSP/Sickness Benefit	IVB	IVB
1995–2008	SSP/Incapacity Benefit (IB) short-term lower rate	(IB) short-term lower rate	IB short-term higher rate	IB long-term rate
2008–	SSP/ESA	SSP/ESA	Employment Support Allowance (ESA)	(ESA)

Table 1.2 **Reforms to the UK disability insurance system, 1948 to present day**

1948	Introduction of Sickness Benefit. Flat-rate benefit, no distinction by duration of claims.
1966	Introduction of earnings-related Sickness Benefit.
1971	Introduction of Invalidity Benefit (IVB). Higher rate for duration above six months.
1972 reform	Introduction of Invalidity Allowances. Supplements for becoming disabled at younger age.
1980	Abolition of earnings-related Sickness Benefit.
1983/1986	Introduction of Statutory Sick Pay.
1995 reform	Incapacity Benefit (IB) replaces IVB. New claimants receive less generous Incapacity Benefit, which is taxable (unlike IVB). Own occupation test replaced by any occupation test. Regional medical test instead of personal doctor. No longer paid to people over state pension age.
2001 reform	Increased contribution requirement to qualify for IB. Introduction of means testing with regard to pension income.
Pathways-to-work expansion 2003–2008	Piloting of a package of reforms consisting in increased conditionality, increased support, and increased financial incentives to return to work.
2008 reform	Employment support allowance (ESA) replaces IB for new claimants.
2010 reform	ESA is applied to all existing IB claimants.

cording to duration of incapacity, while table 1.2 summarizes the changes to the generosity of these sickness and disability schemes. In 1971 *Invalidity Benefit* (IVB) was split from the Sickness Benefit but still followed the structure inherited from the previous scheme, whereby entry to IVB would be offered to those who had been on sickness benefits for longer than twenty-eight weeks. The IVB offered a higher level of benefit than the Sickness Benefit but without imposing another health test when entering IVB. The

screening process at the time relied on a medical assessment by a personal doctor of the ability to conduct "suitable work."

In 1983, a major reform that was introduced to transfer administration of sick pay claims from Sickness Pay to employers for the first eight weeks of sickness, was increased to twenty-eight weeks in 1986. Employers were mandated to pay *Statutory Sick Pay* (SSP), payments that would be reimbursed by the government through lower National Insurance contributions.[6] For those who would not qualify for SSP, the Sickness Benefit was still available.

The number of claimants increased slowly until the mid-1980s for the older working-age individuals, when a sharp increase of IVB recipients was registered for all age-groups. One can see in figure 1.1 and figure 1.2 the number of IVB recipients as a share of the fifty-five to fifty-nine, sixty to sixty-four, and sixty-five to sixty-nine age-groups for men and women. Between 1985 and 1996, the share of the fifty-five to fifty-nine-year-old men on IVB almost doubled, from 10.9 percent to 20.0 percent.

In 1995 a reform was introduced that replaced the IVB and the Sickness Benefit schemes with the *Incapacity Benefit* (IB). This maintained the "own occupation test" to qualify for the first twenty-eight weeks of incapacity, but replaced the "suitable work test" of IVB with an "all work test" to qualify for the higher rate IB. This new medical screening was also removed from personal doctors and was instead administered by medical staff at the regional level and commissioned by the scheme's administration. The growth of the IB roll was stopped, even slightly reversed, but the stock remained high, especially for younger individuals. In addition to these changes, IB was no longer paid to new claimants above the state pension age (sixty-five for men and sixty for women, at the time). Previously, individuals typically preferred to stay on IVB than to receive the basic state pension, as the latter is taxable whereas the former was not. The new IB benefit excludes those above the state pension age (at the time sixty for women and sixty-five for men) and is treated as taxable income. This is why the number of claimants of IB aged above the state pension age drops markedly after the 1995 reform in figures 1.1 and 1.2.

The 1999 Welfare Reform and Pensions Act introduced further changes, with a tightening of the health test from April 2000 onward and a reduction in the generosity of IB from April 2001. The new health test is called Personal Capability Assessment, which is designed to assess capacity for paid work instead of checking incapacity for work and is therefore supposed to foster a return to work. The reform also increased the eligibility requirement for IB from having paid contributions in any year before the start of incapacity to having paid sufficient contributions in one of the last three years.

6. Control of SSP was made by self-certification of sickness from the part of employees, which has raised concerns when expenditures on SSP turned out to increase more rapidly than the sickness benefit (Creedy and Disney [1985], page 127).

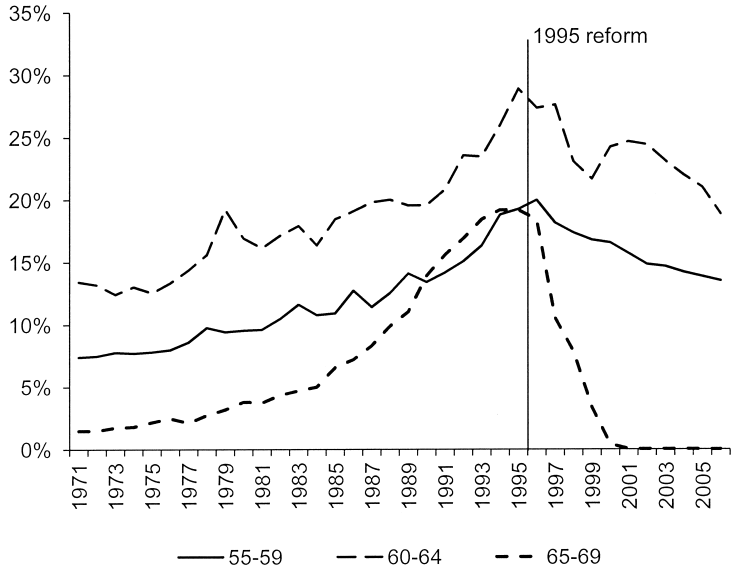

Fig. 1.1 The IVB/IB recipients as a share of population (males), by age-group
Note: The IV/IB claimants' data are from Anyadike-Danes and McVicar (2007), and the working-age population is from the Family Expenditure Survey.

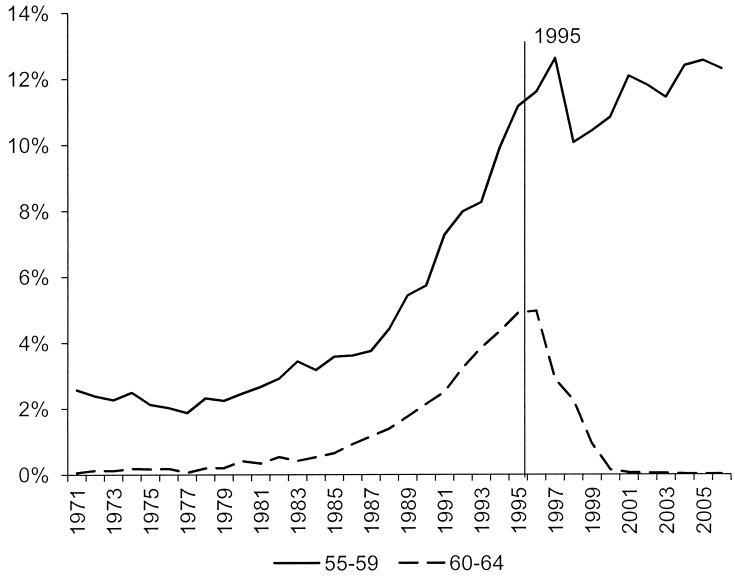

Fig. 1.2 The IVB/IB recipients as a share of population (females), by age-group
Note: The IV/IB claimants' data are from Anyadike-Danes and McVicar (2007), and the working-age population is from the Family Expenditure Survey.

Finally, it introduced means testing of IB with regard to individual private pension income at a rate of 50 percent above £85 a week.

In 2003 the New Labour government decided to pilot an ambitious, and expensive, program to incentivize IB claimants to return to work called *Pathways-to-Work.* The program included increased conditionality with mandatory work-focused interviews, increased financial incentives to return to work, and increased support with the provision of voluntary schemes designed to help disabled individuals to return to work. The scheme was evaluated in pilot areas and then expanded to the rest of the country (Adam, Bozio, and Emmerson 2012).

In 2008 the government announced a new scheme to replace IB, the *Employment Support Allowance* (ESA) for new claimants. This new scheme incorporated a stricter eligibility health test along with a redesign of the benefit rates. In the first thirteen weeks of claim, the claimant is subjected to a Work Capacity Assessment, which determines whether the individual is entitled to ESA. Among those found eligible for ESA, the Work Capacity Assessment distinguishes between those who have "limited capacity to work and are unable to follow work-related activities" and the remainder who have "limited capacity to work but are able to follow work related activities." For the last group claimants are mandated to attend the Pathways-to-Work program. The ESA will be progressively applied to all existing IB claimants; that is, existing claimants are going to be retested for the stricter eligibility between October 2010 and 2014.

1.2.3 Non-contributory Benefits

Whereas the previous disability benefits are only available to those who have a sufficient National Insurance contribution record, a set of benefits were created in the 1970s for individuals of working age, with congenital disabilities, and who did not qualify for the contributory scheme. In 1975 the *Non-Contributory Invalidity Pension* (NCIP) was introduced, offering a benefit of 60 percent of IVB to men or single women. In 1977 the scheme was extended to married women who were "incapable of performing normal household duties" under the name of *Housewife Non-Contributory Invalidity Pension* (HNCIP), but at a lower rate than the NCIP. Both NCIP and HNCIP were replaced in 1984 by the *Severe Disablement Allowance* (SDA), which stopped the distinction that it was deemed discriminatory against women. It was subsequently abolished in 2001 for new claimants.

In the 1970s a number of schemes were also designed to offer benefits to compensate the extra cost endured by disabled individuals, either in the form of carers or the extra cost of mobility. In 1971 the *Attendance Allowance* (AA) was created for those who required personal assistance and in 1976 a *Mobility Allowance* (MA) was introduced for those who had difficulty moving around. Also in 1976 an *Invalid Care Allowance* (ICA) was introduced for those who could not work because they had to stay at home to care for

a disabled relative.[7] In April 1992 the *Disability Living Allowance* (DLA) replaced MA and AA for those who had become disabled before the age of sixty-five, while AA was kept for those aged over sixty-five. In terms of total expenditure, DLA represents the biggest transfer targeted toward people with disability in the United Kingdom. In 2006 to 2007 it represented £9 billion of expenditure, approximately 0.7 percent of national income. If one adds the £4 billion of AA and £1.2 billion of CA, the non-contributory disability benefits represent more than 1.0 percent of national income. In the June 2010 budget, the government announced plans to cut DLA spending significantly by reassessing the health of existing claimants.

1.2.4 Means-Tested Benefits

A number of means-tested benefits targeting poor households have provisions that include premiums for disability. *Income Support* (IS) on grounds of disability, for instance, offers a premium for low-income households containing at least one disabled individual.

Another example, the *Working Tax Credit* (WTC), the United Kingdom's equivalent of the US Earned Income Tax credit (EITC), also has a supplement for disabled workers, and has a less onerous hours rule than that applied to nondisabled childless adults, with a further premium for the severely disabled. *Housing Benefit* (HB) is another means-tested benefit with additional income for those with disability and increased premium for those with severe disability.

1.3 Pathways into Retirement and Program Reforms

Given the complexity of pathways into retirement, it is important to put the changes to disability schemes in the wider context of other reforms to state pension schemes and unemployment schemes. Presenting data on pathways into retirement requires long panel data sets where each individual can be followed from work into retirement status. The United Kingdom does not have comprehensive administrative data such as the ones available for Germany (see Borsch-Supan and Jurges, chapter 7, this volume), but we can shed light on these transitions using three approaches: cross-sections from Family Expenditure Survey (FES) and Labour Force Survey (LFS), one-year economic transitions from LFS, and the longer panel from the British Household Panel Survey (BHPS).

1.3.1 Cross-Section Evidence on Economic Activity

Two representative surveys provide good information on participation in the labor market in the United Kingdom. The FES goes back to 1968, and from 1975 onward the LFS offers large samples of British households with

7. In 2003 ICA was renamed *Carer's Allowance* (CA).

a full description of their labor market status. The employment rate of older males by three age categories (fifty-five to fifty-nine, sixty to sixty-four, and sixty-five to sixty-nine) over a forty-year period, from 1968 to 2008, is shown in figure 1.3. We also add in the figure the main reforms to disability benefits in the United Kingdom over that period; that is, the introduction of IVB in 1971 and the introduction of IB in 1995. No obvious relationship stands out from these time series. The introduction of a more generous IVB in 1971 does not seem to have led, at least immediately, to a change in the employment rate of older workers, while the more restrictive reform of 1995 is also hardly visible. The progressive introduction of the Pathways-to-Work program over the 2003 to 2008 period is associated with an increase in employment for the older workers, but given that the program only affected a small share of the country until 2006, it is difficult to ascribe this increase to this reform (we return to this issue in section 1.5).

Another way to look at the change in labor market status over the long term is to look at reasons given by survey respondents for not being in work. We present in figure 1.4 cross-sections of fifty-five to sixty-four-year-old men by self-reported economic activity. We cannot split those who report a health problem between the short-term sick and long-term sick, but we still capture the changes in nonemployment between those who actively look for paid work (the official unemployed), those who report being inactive because

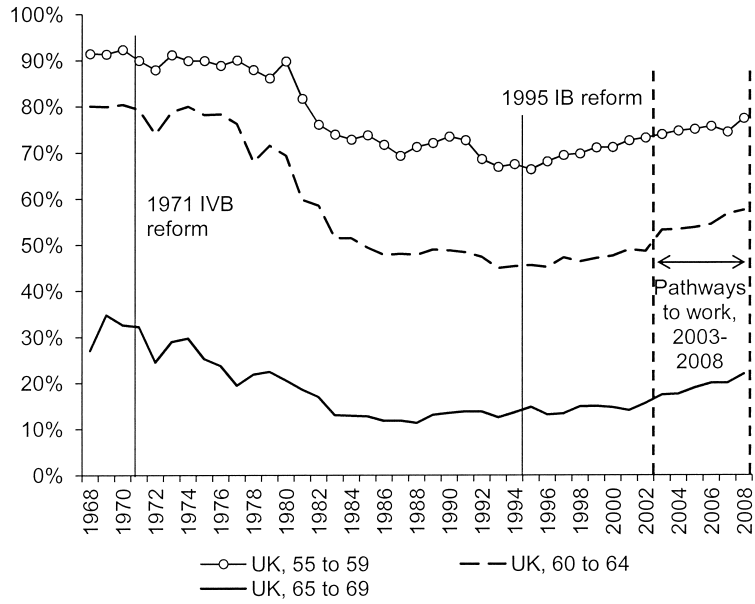

Fig. 1.3 Employment rate and IVB/IB reform (males)
Sources: 1968 to 1983 Family Expenditure Survey; 1983 onward, Labour Force Survey.

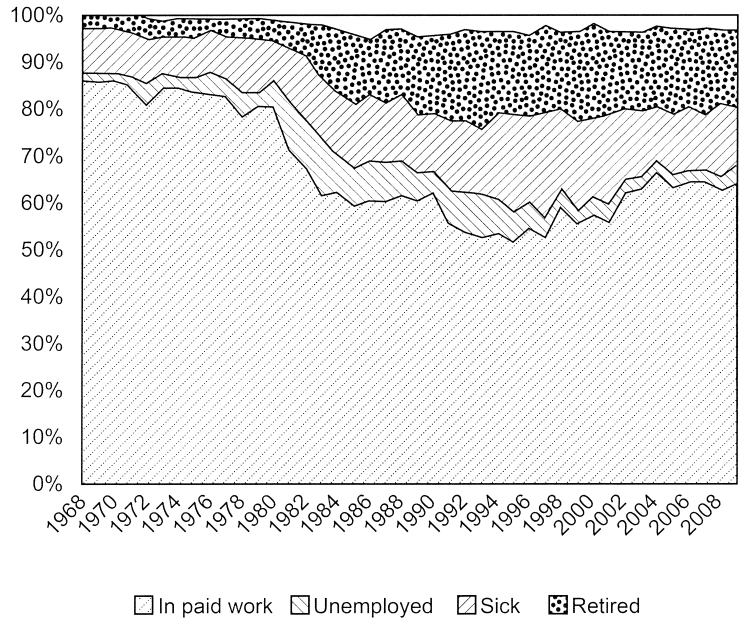

Fig. 1.4 Economic activity of fifty-five to sixty-four-year-old men (1968–2009)
Source: 1968 to 2009 Family Expenditure Survey.

they are retired, and those who report being inactive because of sickness. Given the way the questions in the survey are structured, an individual who is not working because of a temporary illness but has kept his job will be classified as employed. Therefore, those who report being sick are both not employed and not looking for work. Two facts stand out from this figure. First, the big drop in older male employment in the late 1970s and early 1980s was associated with a large increase in the unemployed and the retired. The share of those reporting being sick did not increase immediately. However, starting in the mid-1980s, the share of fifty-five to sixty-four-year-olds reporting being inactive because of sickness increased markedly, in line with the increase in disability benefits recipients observed in figure 1.1. Over the last ten years the increase in the employment rate of this group has largely been at the expense of the unemployed, and only marginally at the expense of those reporting health problems. As a general remark, the share of those inactive because of sickness is always much larger than those looking for work, even when the official unemployment rate reached its highest level in the 1980s.

1.3.2 One-Year Transitions from LFS

One advantage of the LFS since 1992 is that survey respondents are asked about their economic position quarterly in five successive waves. This pro-

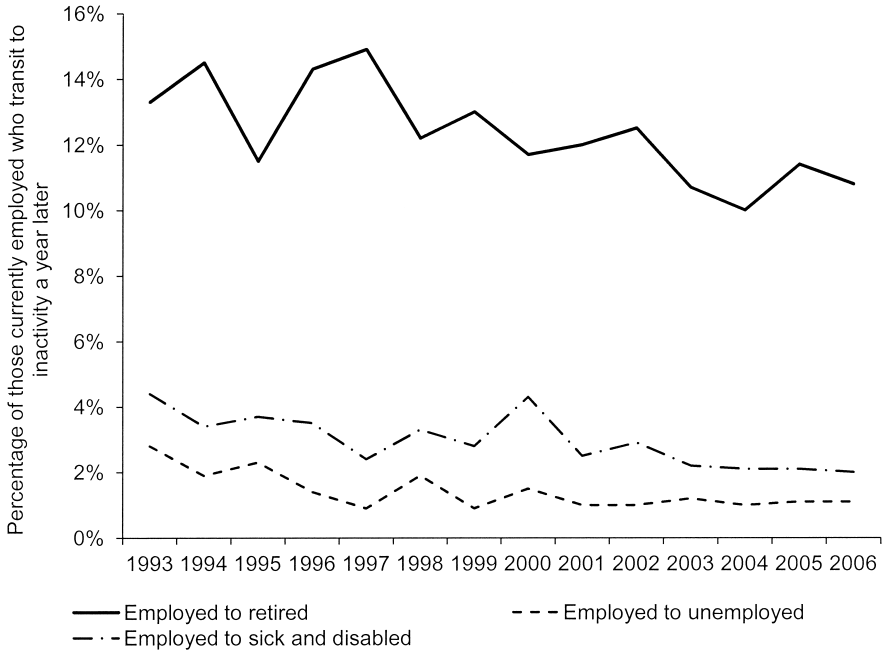

Fig. 1.5 One-year transition rates to inactivity from employment (sixty to sixty-four-year-old men)

Source: Quarterly Labour Force Survey 1992–2006.

vides us with a one-year panel data set from 1993 onward, allowing us to present evidence on transitions from employment into inactivity. Figure 1.5 presents the evolution of these short-term transition rates for sixty to sixty-four-year-old men. The most striking fact over the period, especially since the late 1990s, is the reduction in the transition rate from employment into retirement. This coincides with the significant increase in the employment rate of this group over the period. Transitions to unemployment and disability have declined over the early 1990s and stabilized at a low level since. There is hardly any evidence from these statistics that the 1995 reform has had much impact on the transitions through disability and the dominant factor over the period remains the change in retirement behavior of this age group which, over this period, is increasingly occurring at an older age.

Figure 1.6 presents similar evidence by looking reversely to the previous activity of newly retired individuals, that is, individuals who declare that they are retired in one year but were not in the previous year. From the mid-1990s to the days just prior to the financial crisis, direct transition from employment to retirement increased markedly: whereas in 1994 only 54 percent of newly retired men were coming directly from employment, this share reached 67 percent in 2008. This has been matched by a similar decrease of

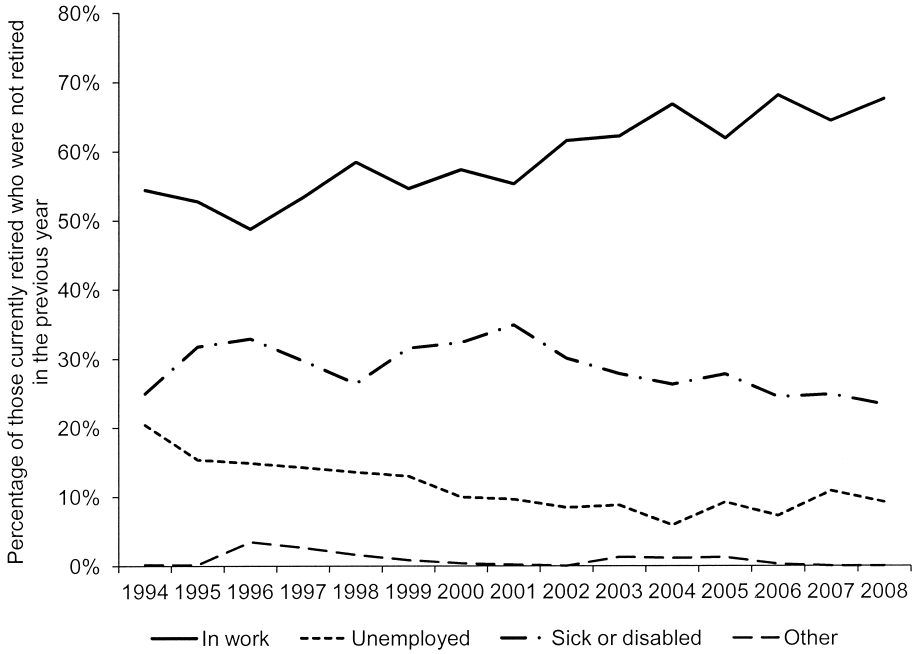

Fig. 1.6 Previous economic activity of newly retired men
Source: Quarterly Labour Force Survey 1993–2008.

newly retired men coming from unemployment, whose proportions were halved from 20 percent to 10 percent. On the other hand, there is only limited evidence of reductions in those coming from long-term sickness or disability. From 1994 to 2001 the proportion increased, from 25 percent to 35 percent, while a decline is evident in the more recent years, down to 23 percent in 2008.

1.3.3 Evidence from BHPS

The short-term transition rates from the LFS provide a good but limited description of the pathways to retirement that individuals might experience. It is possible to imagine that transitions to unemployment cascade into disability before retirement and that short-term transitions do not capture these effects. In order to shed light on these long-term transitions, we used a long panel data set, the British Household Panel Survey, which surveyed 10,000 individuals every year since 1991 and up to 2007. Although we have access to seventeen waves of BHPS, there are only a few cohorts that we can follow from age fifty through retirement. We have selected the cohort born between 1938 and 1942 who were aged forty-nine and fifty-three in 1991 and aged sixty-five to sixty-nine in 2007. In figure 1.7 we present the evolution of self-reported economic activity for a sample of men from this cohort

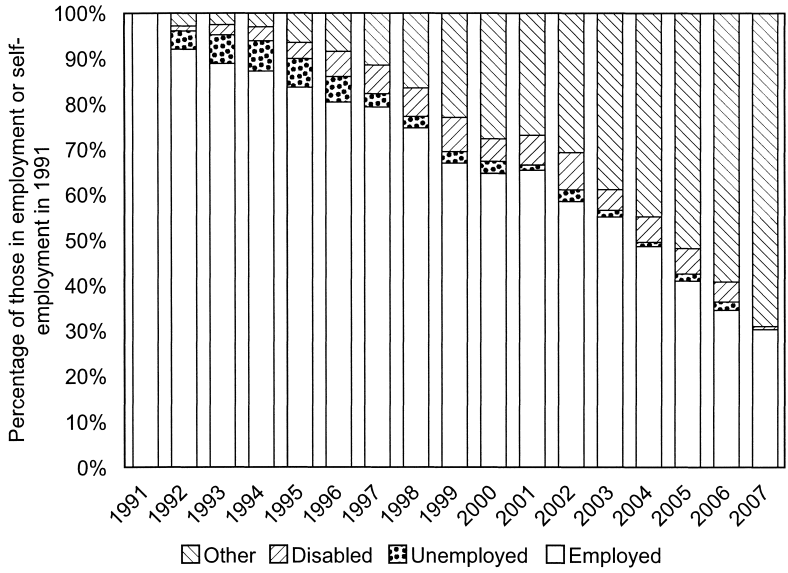

Fig. 1.7 Subsequent activity of men born between 1938 and 1942 in work in 1991
Source: British Household Panel Survey 1991–2007.

who were in paid work in 1991. Between age fifty and fifty-five, inactivity is largely dominated by unemployment, whereas disability becomes a more substantial aspect from age fifty-five onward up to much older ages. Nonetheless the decrease in employment over the fifty to sixty-nine age-group is still largely dominated by the increase in the other status; that is, retirement.

In figure 1.8 we present similar statistics to figure 1.6, but using the long panel of the BHPS as opposed to the short panel of LFS data. Those who were retired in 2007 largely transited directly from employment: 64.5 percent of retired men aged sixty-five to sixty-nine in 2007 were in employment before retiring compared to 63.3 percent for women. This still leaves a significant share that transit through unemployment and disability: 25.0 percent of men aged sixty-five to sixty-nine came from disability compared to 13.8 percent for women. Disability is an ever more important transition for women as the increase in labor force participation of women has reduced the other form of inactivity while increasing eligibility to disability benefits.

Figure 1.9 takes full advantage of the long panel from the BHPS by presenting evidence on transitions from employment into retirement and distinguishing the different pathways. The large majority of men and women aged sixty-five to sixty-nine are either still in work or have transited directly from employment to retirement (75.6 percent of men and 78.4 percent of women). This is not to say that spells of unemployment or disability are rare, as a significant proportion of men transit through unemployment (11.3 percent) and disability (8.9 percent). It is, however, much less common to experience

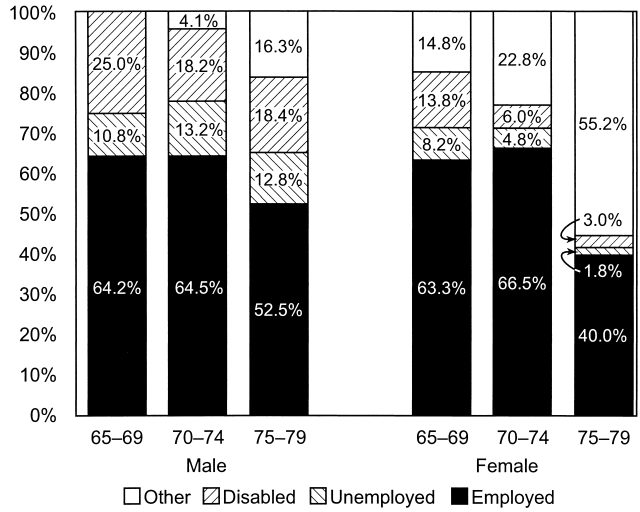

Fig. 1.8 Last activity of those retired in 2007, cohort born 1938–1942

Source: British Household Panel Survey 1991–2007.

Note: Those who are inactive throughout the panel are included in "other."

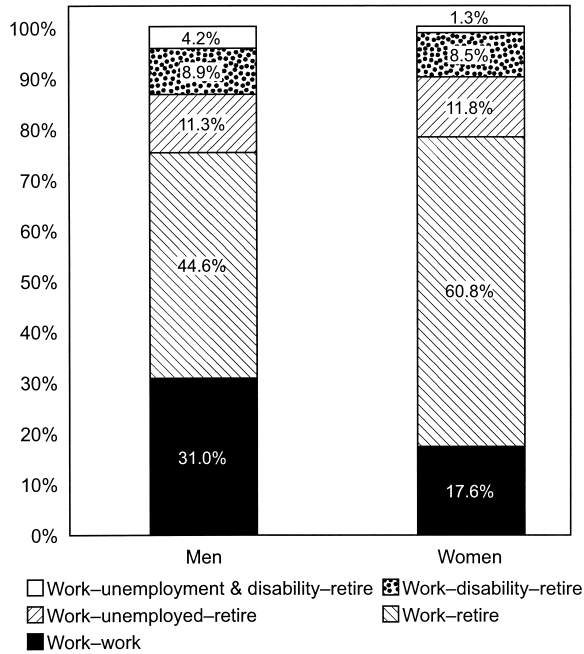

Fig. 1.9 Pathways from work into retirement, cohort born 1938–1942

Source: British Household Panel Survey 1991–2007.

Note: The sample includes all those aged forty-nine to fifty-three and in work at the start of the panel (in 1991) and retired at the end (aged sixty-five to sixty-nine in 2007). Less than 1 percent of the forty-nine to fifty-three-year-olds working in 1991 ends up unemployed or disabled in the last wave of the panel.

multiple transitions from unemployment to disability before retiring as these two options seem to be alternative pathways.

1.4 Evidence on Long-Term Trends in Health and Labor Participation

This section aims to provide evidence on long-term trends in health using measures of mortality rates at different ages and self-reported measures of disability. We then attempt to relate these changes to changes in the labor force participation.

1.4.1 Mortality Data

There are two advantages in using mortality data. First, mortality is a well-defined concept and it is therefore easy to present comparable information across countries. Second, mortality rates are available over long periods and can be matched with historical data on labor force participation. However, mortality data also have very obvious limitations for our purpose: they are not individual data, and do not allow assessing individual-specific health shocks to labor force participation. And perhaps even more importantly, morbidity is a very different issue from disability or incapacity to work, which is more likely to matter when explaining trends in labor force participation. England and Wales life tables are available from 1841 onward by age and sex and by period and cohort.[8] We use in this section period data for ease of comparison with other countries.

Figures 1.10 and 1.11 show the evolution of period mortality rate of English and Welsh men and women at age fifty-five, sixty, and 65. Until the 1970s, there was only a minor reduction in mortality rates for men at age fifty-five and sixty and almost no improvement at age sixty-five. During that decade male mortality rates started falling rapidly, especially at older ages. The fall in mortality rates is less impressive for women, but as figure 1.11 makes clear, women have experienced much lower mortality rates than men and a much earlier decline in mortality at older ages.

Figure 1.12 presents two-year mortality rates by age for both men and women comparing the period data from 1960 and 2005. Mortality rates increase steeply by age and are higher for women but the gap between men and women has got ten smaller since 1960, men having enjoyed a somewhat larger reduction in mortality than women. Whereas the 5 percent two-year mortality rate was reached at sixty-one for men in 1960, it was only attained at age seventy in 2005. For women, the age of the 5 percent two-year mortality rate increased from sixty-eight to seventy-five over the same period.

Figures 1.13 and 1.14 show the age of equal mortality rate over time

8. Mortality rates calculated on a period basis do not account for future changes (typically improvements) in mortality rates, whereas those calculated on a cohort basis do allow for such changes.

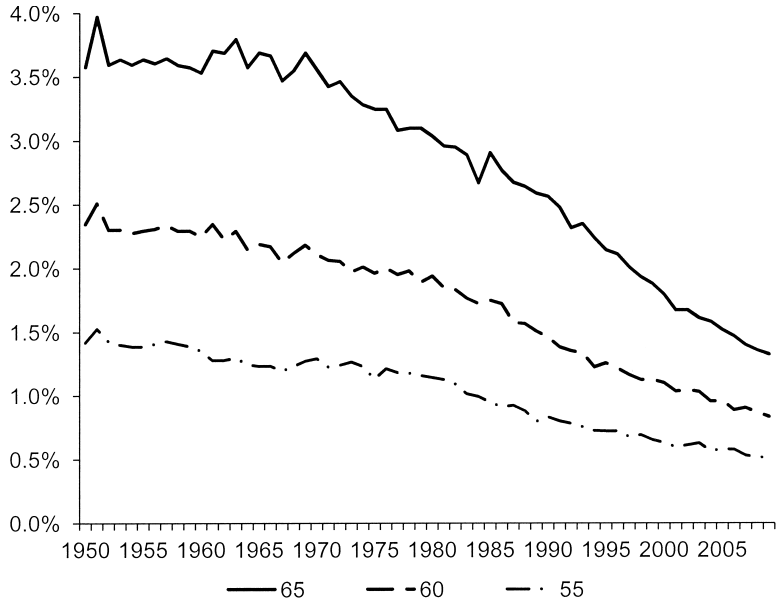

Fig. 1.10 Age-specific mortality rate for English and Welsh men
Sources: England and Wales life tables, GAD.

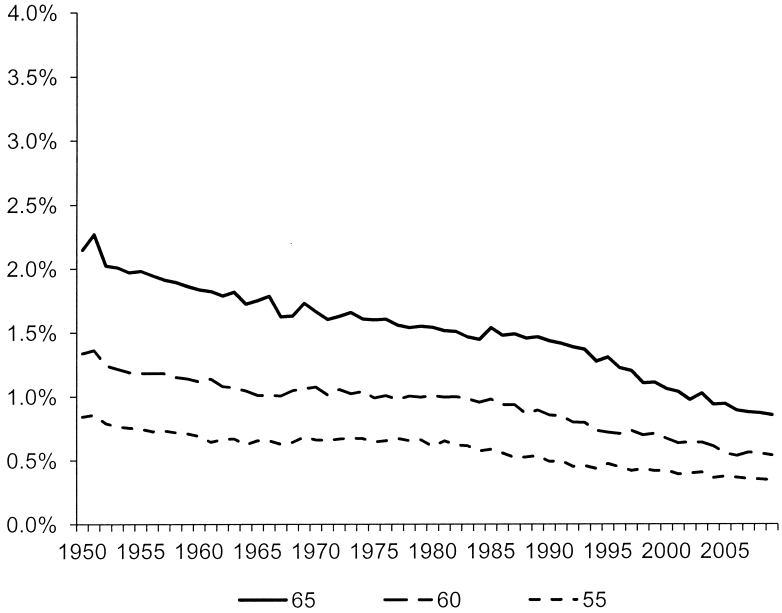

Fig. 1.11 Age-specific mortality rate for English and Welsh women
Sources: England and Wales life tables, GAD.

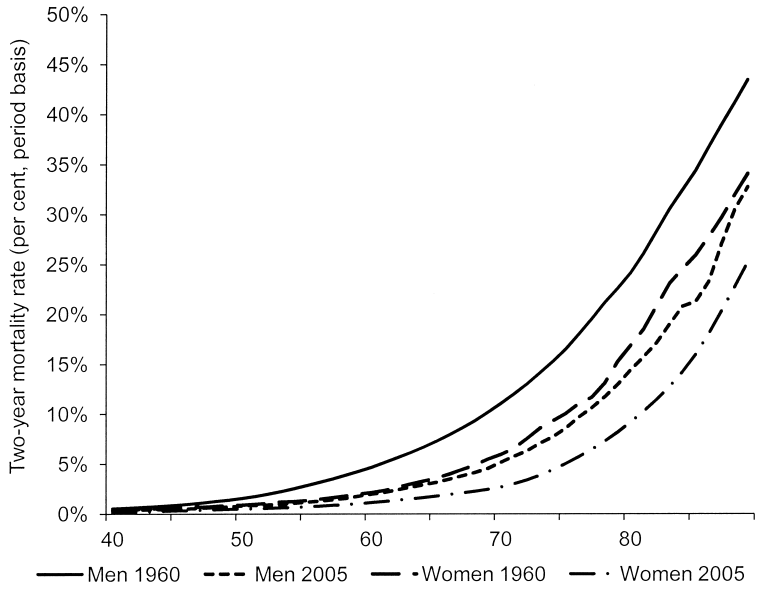

Fig. 1.12 Two-year mortality rate for men and women
Sources: England and Wales life tables, GAD; computations from the authors.

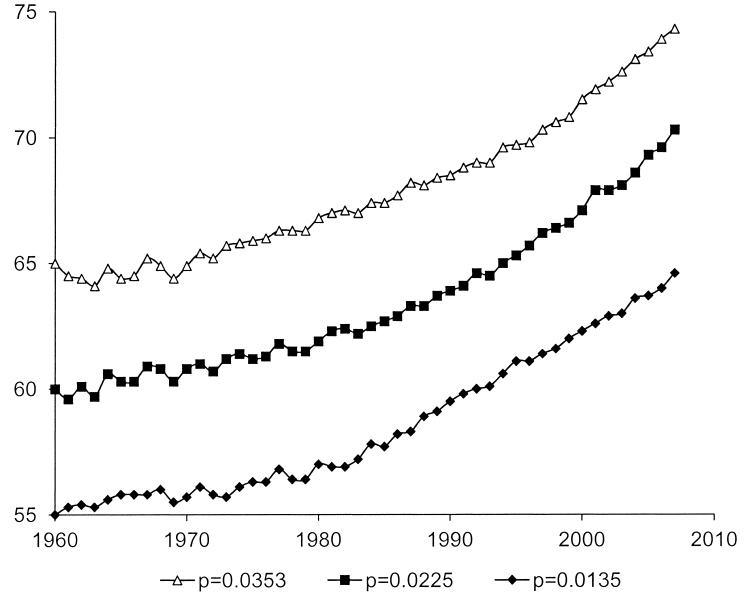

Fig. 1.13 Isomorts: Age of equal period mortality rate, English and Welsh men
Sources: England and Wales life tables, GAD; computations from the authors.
Note: p represents the mortality rate of the isomorts.

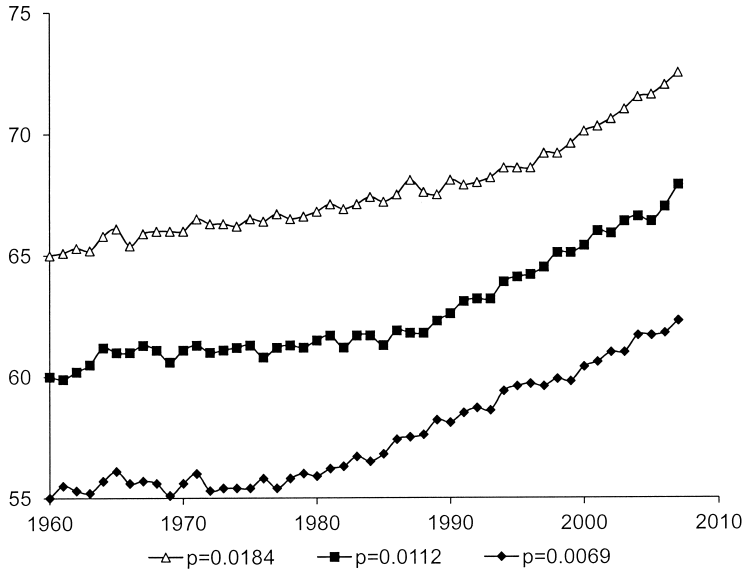

Fig. 1.14 Isomorts: Age of equal period mortality rate, English and Welsh women
Sources: England and Wales life tables, GAD; computations from the authors.
Note: p represents the mortality rate of the isomorts.

computed using one-year mortality rates ("isomorts"). This graphically illustrates the aging process as an increase in the age where individuals face the same probability of death: being a British sixty-five-year-old man in 1960—when state pension age was already sixty-five—is equivalent in terms of mortality risk to being aged seventy-four today. Or reversely, being sixty-five today is like being fifty-five in 1960. The increase is less pronounced for women, reflecting as before the larger reduction in mortality for men, but is nonetheless impressive. For instance, being a sixty-year-old woman in 1960—the then state pension age—is today equivalent in terms of mortality risk to being seventy years old.

1.4.2 Measures of Self-Reported Disability

Although the previous section highlights the large improvement in average life expectancy, the ability to continue economic activity at an older age is more likely to be affected by health conditions that are not obviously related to morbidity. Objective measures of disability are particularly rare over long historical time series as they have only been recently added systematically to surveys on aging. As a result, analysis of such measures, over the time period we are looking at here, is not possible. Going forward, however, the fact that aging studies such as the Health and Retirement Study, the English Longitudinal Study of Ageing, and the Survey of Health, Ageing, and Retirement

in Europe, now routinely collect objective measures of physical functioning such as walking speed, grip strength, chair stands, balance tests and lung function, along with cognitive performance tests and huge batteries of questions on doctor-diagnosed diseases and limitations in activities of everyday living, means that an analysis based on objective measures of health and functioning should be a priority for future research.

For our purpose here, however, there is useful information on self-reported health from the General Household Survey (GHS), which surveyed annually 10,000 households in the United Kingdom from 1971 to 2006. In figure 1.15 we show the proportion of men reporting limiting long-standing illness, the notion closest to the accepted definition of disability, by different age-groups. Two facts are striking. First, over this thirty-year period the share of men reporting some disability is relatively flat, despite the large improvement in health (at least as measured by the improvements in mortality rates). Second, the proportion of individuals saying that they have some limiting long-standing illness is increasing up to at least age sixty-four at every period.

The presentation of time-series averages by age-group, however, tends to mask the systematic age variation in the data across later working ages. In figure 1.16 we present the proportion of men reporting limiting long-standing illness by age at ten-year intervals. The share of self-reported disability was steeply increasing by age at every period but, although it was increasing at every age between 1977 and 1997, the latest year in our data

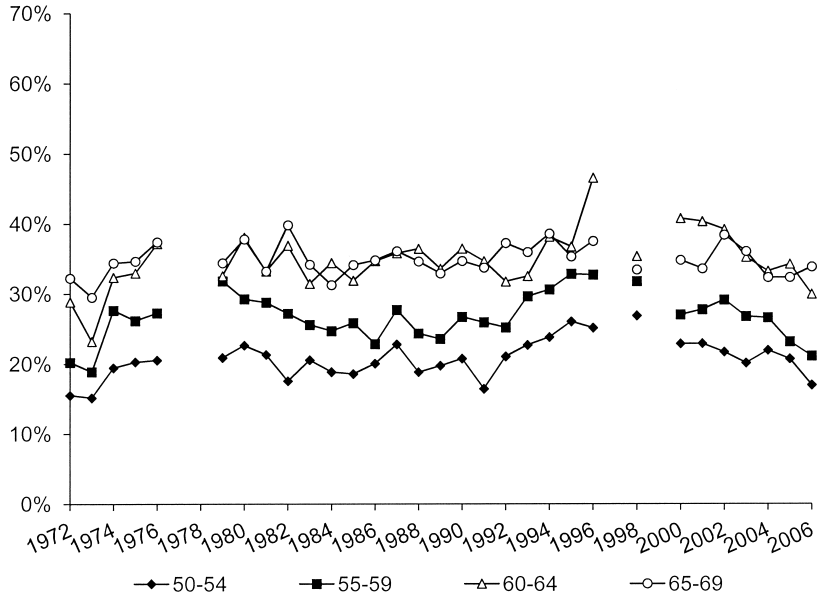

Fig. 1.15 Proportion of men reporting limiting long-standing illness (1972–2006)
Source: General Household Survey 1972–2006.

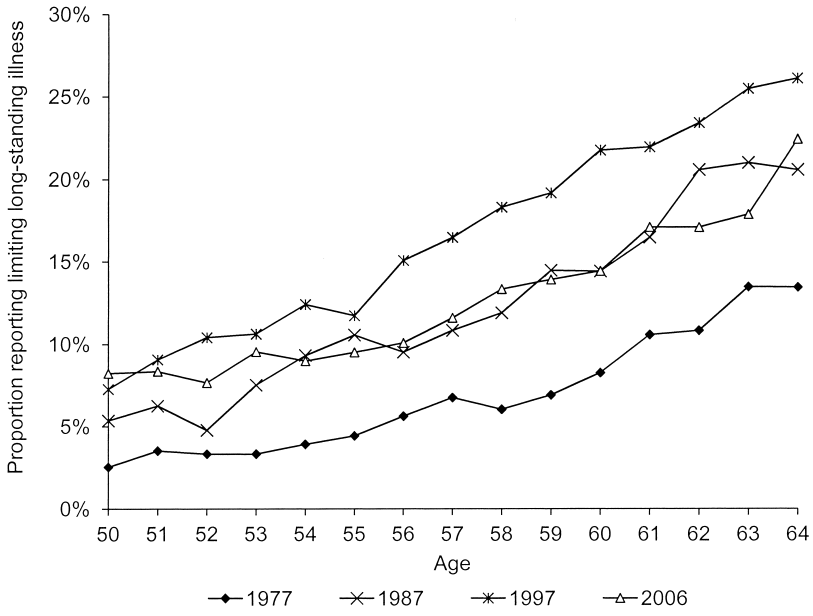

Fig. 1.16 Proportion of men reporting limiting long-standing illness by age
Source: General Household Survey 1972–2006.

exhibits a marked reduction for ages above fifty-one. In figure 1.17 we plot the same data with respect to specific age mortality rates for each year and the same time-patterns emerge. Similar evidence for women is presented in figures 1.18 and 1.19. The changing rate of disability for given levels of mortality probability is something that we will return to in later sections of this chapter.

1.4.3 Health Measures and Labor Force Participation

In order to summarize the evidence on labor force participation, benefit receipt, and the health measures we have discussed previously, we present in figures 1.20 and 1.21 indices of these measures alongside each other for men and women, respectively. Both figures look at the evolution from 1972 to 2006 for the age-group fifty-five to fifty-nine. Mortality is declining constantly over the period and does not seem to be related with any other trends. One interesting fact comes from the correlation between the number of claimants of disability benefits, the self-reported limiting long-standing illness, and the overall change in nonemployment that is observed among men. Nonemployment increased sharply in the early 1980s, peaking after the 1992 recession. The IB claimant count increased slowly over the period before a rapid growth in the early 1990s and a strong reversal after the 1995 reform. Although it is difficult to make precise inferences from these correlations,

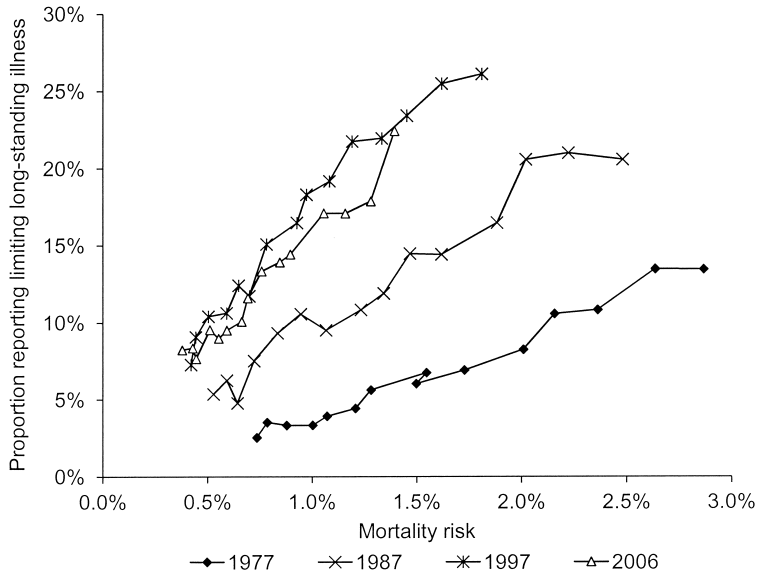

Fig. 1.17 Proportion of men reporting limiting long-standing illness by mortality risk

Sources: General Household Survey 1972–2006 and GAD mortality tables.

Note: Mortality risk is one-year mortality rate at a given age, from period life tables.

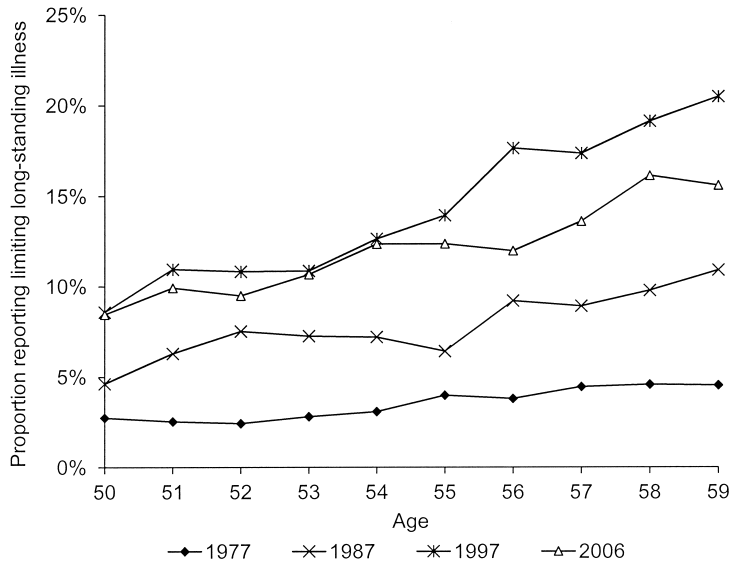

Fig. 1.18 Proportion of women reporting limiting long-standing illness by age

Source: General Household Survey 1972–2006.

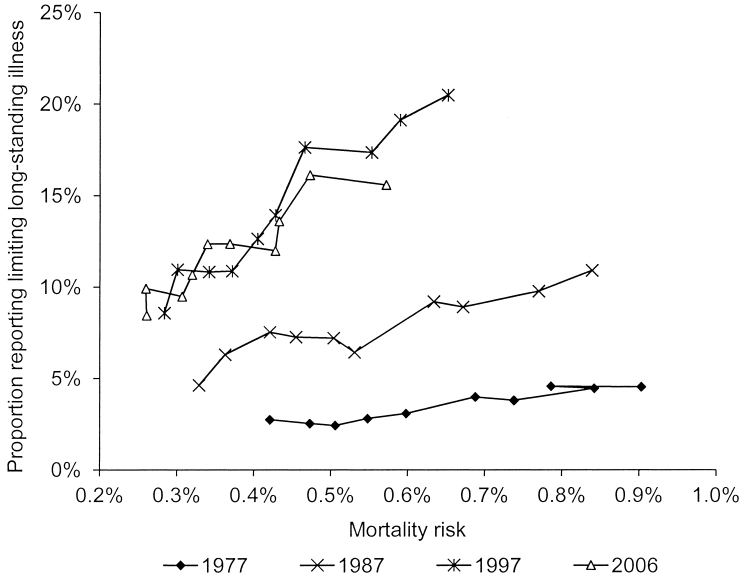

Fig. 1.19 Proportion of women reporting limiting long-standing illness by mortality rate

Sources: General Household Survey 1972–2006 and GAD mortality tables.
Note: Mortality risk is one-year mortality rate at a given age, from period life tables.

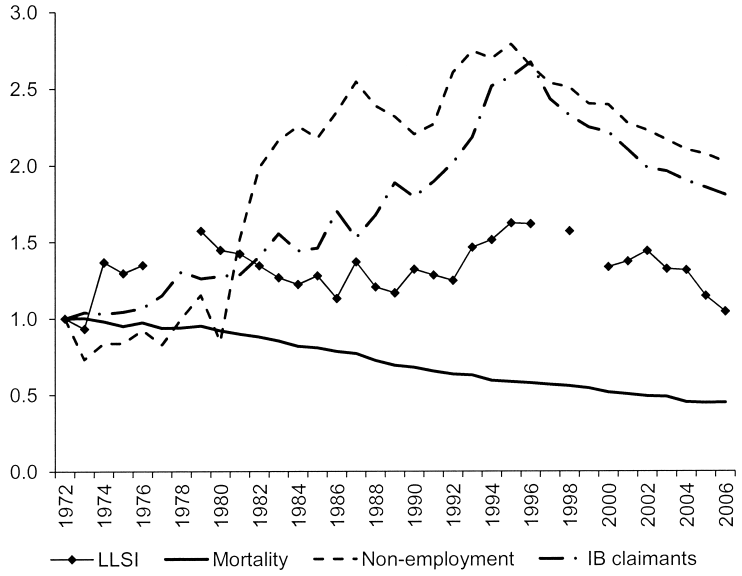

Fig. 1.20 Health measures and labor force participation, men aged fifty-five to fifty-nine

Note: Indices 1 = 1972; LLSI stands for limiting long-standing illness.

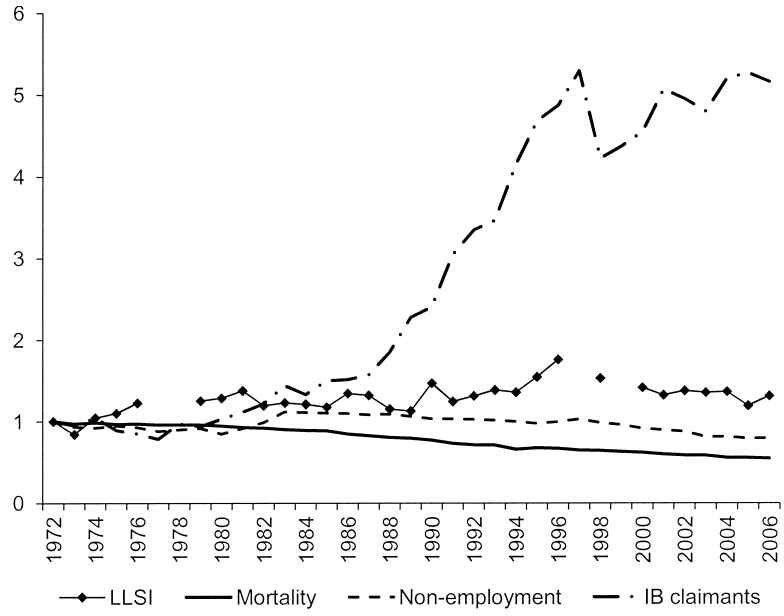

Fig. 1.21 Health measures and labor force participation, women aged fifty-five to fifty-nine

Note: Indices 1 = 1972; LLSI stands for limiting long-standing illness.

the trend in self-reported disability is also hump-shaped around the 1995 reform, laying grounds for claims that self-reported disabilities reflect as much the impact of being in receipt of a disability benefit as some measure of perceived incapacity.

Figure 1.21 presents similar evidence for women. The graph is dominated by the large increase in receipt of disability benefits, reflecting the increased eligibility of women to contributory disability benefits. Labor force participation is clearly on an increasing trend in that age-group, except during the early 1980s when the employment rate of this group declined sharply.

Figures 1.22 and 1.23 contrast two ways of presenting aging and labor force participation. The first panel shows the employment rate by age for three years at a ten-year interval, while the second panel presents the same data by the mortality rate at that specific age. In figure 1.22 the employment of British men exhibit the characteristics that we have highlighted previously: a large drop in employment at the time of reaching the state pension age (age sixty-five) and a significant drop at all ages between 1978 and 1988. The recent period appears favorably with an increase in the employment rate at all ages, but especially between sixty-four and sixty-nine. The second panel, on the other hand, highlights that these changes have taken place during a period of rapid decrease in mortality. For a given mortality rate,

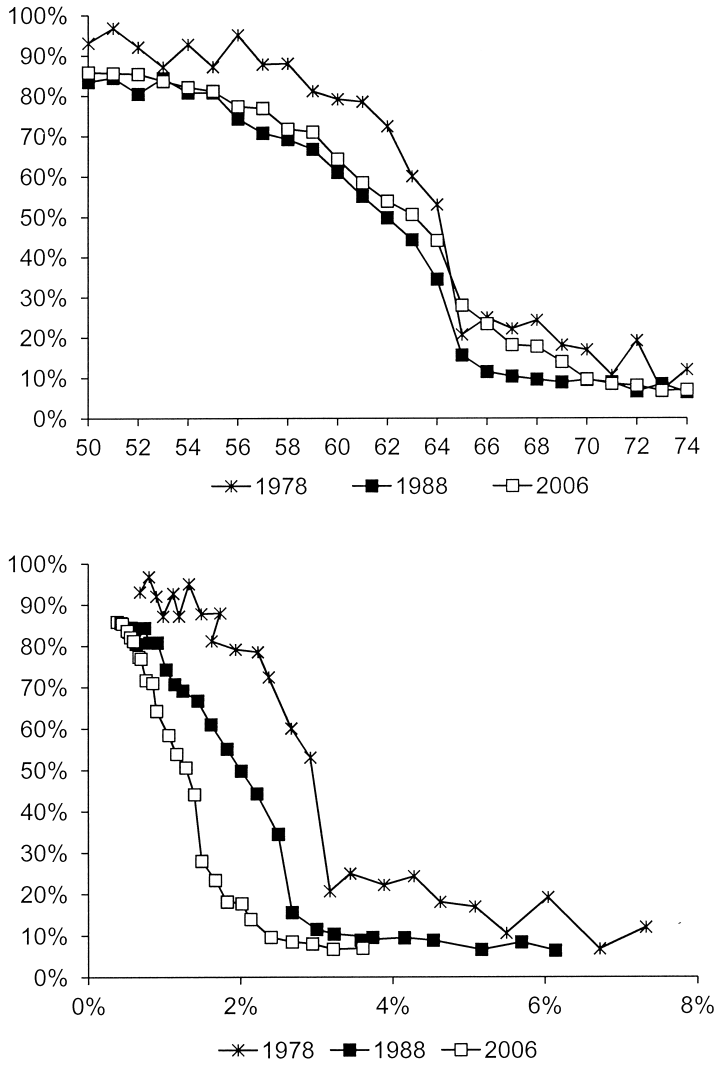

Fig. 1.22 Employment rate by age and mortality rates (males)
Source: Labour Force Survey.

employment rates are now lower than at any other date, including the lowest point of the late 1980s.

This is also the case for women, as shown by figure 1.23. Only at the youngest ages, below age fifty-five, is it possible to see the increasing participation of women counteracting the decline in employment for a given mortality rate.

These figures provide a vivid illustration of the meaning of aging in our

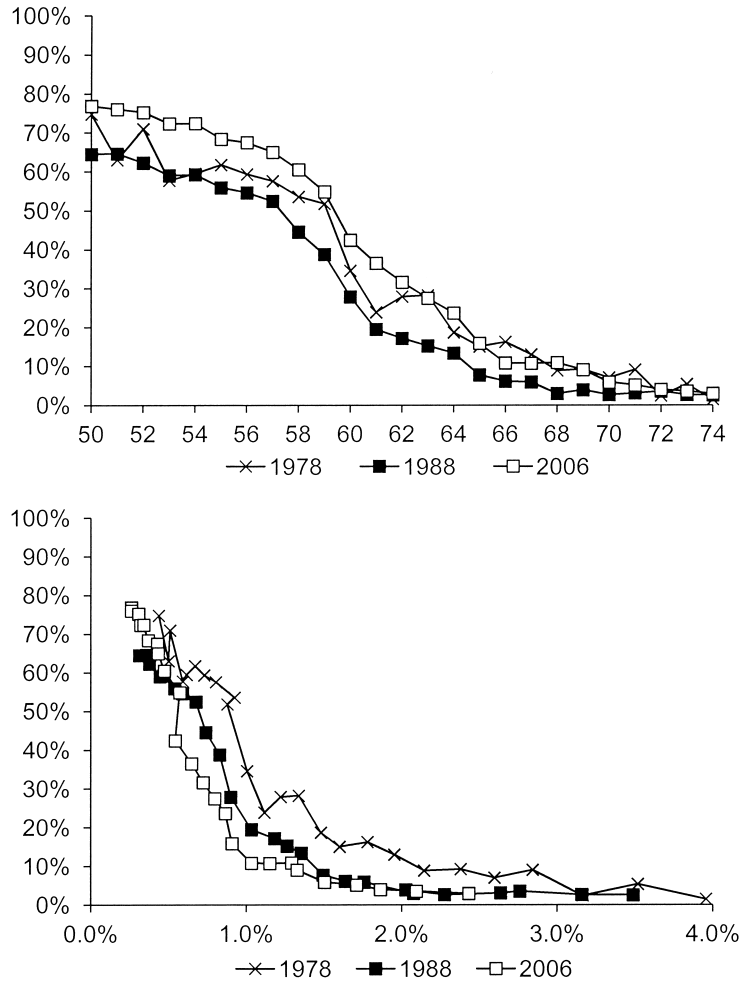

Fig. 1.23 Employment rate by age and mortality rates (females)
Source: Labour Force Survey.

developed societies where age takes, in effect, different meaning, and are related to a recent analysis of Shoven (2010), who discusses using mortality risk or remaining life expectancy as better measures of age than years-since-birth for the purpose of social security analysis and design. The limit of this approach in our context, however, is that mortality risk measures do not capture fully functioning ability and therefore err on the side of putting too much emphasis on morbidity as opposed to measures of disability.

Another more powerful way of looking at the same underlying data from figures 1.15 to 1.22 is to combine them into one graph showing the evolution

of employment and self-reported health over time for a given mortality rate. Figure 1.24 presents the nonemployment rate and measures of self-reported health over time for males at the age corresponding to a 1 percent mortality rate in the relevant year. As one would expect from the analysis in earlier sections of this chapter, the reference age for the comparison constantly shifts upward—in 1975 a 1 percent mortality rate was observed for men aged fifty-three, while in 2008 this age had shifted to sixty-one.

Both health measures, that is, the share of men reporting long-standing illness and the share reporting a limiting long-standing illness, have increased over time but at a much slower rate than nonemployment. Taking the period 1975 to 2007 as a whole, long-standing illness increased by two-thirds, limiting long-standing illness increased by half, but nonemployment almost quadrupled, holding mortality probabilities constant. It is also worth noting that at the beginning of the period the rate of nonemployment was only half the rate of disability as measured by limiting long-standing illness. Yet, by the end of the period, nonemployment rates were higher than disability rates by 10 percentage points. These diverging trends are particularly apparent toward the beginning of the period (late 1970s and early 1980s) when nonemployment was rising very fast while self-reported health measures were

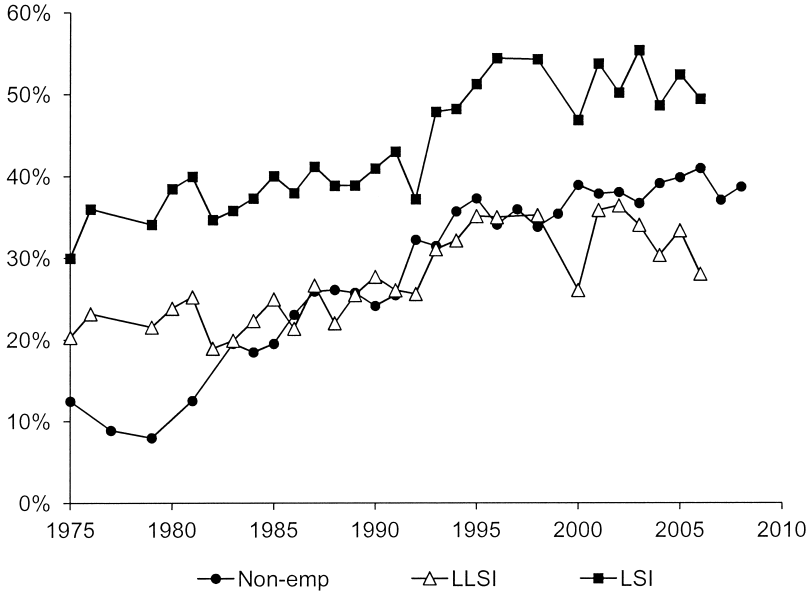

Fig. 1.24 Nonemployment rate and self-reported health measures for men with 1 percent mortality rate

Sources: Labour Force Survey; General Household Survey; computations from the authors.

Note: LLSI stands for limiting long-standing illness, and LSI stands for long-standing illness. Both the LLSI and LSI are three-year moving averages.

not, and also in the more recent years, when self-reported health measures have stopped their increase.

Another possibility of using these associations between age-specific mortality rates and employment rates is to compare countries at various points in time. In figures 1.25 and 1.26 we compare the cases of France, the United Kingdom, and the United States between 1968 and 2006. In 1968, the United Kingdom and the United States have very similar employment rates for given mortality rates, whereas by 2006 the United Kingdom experienced

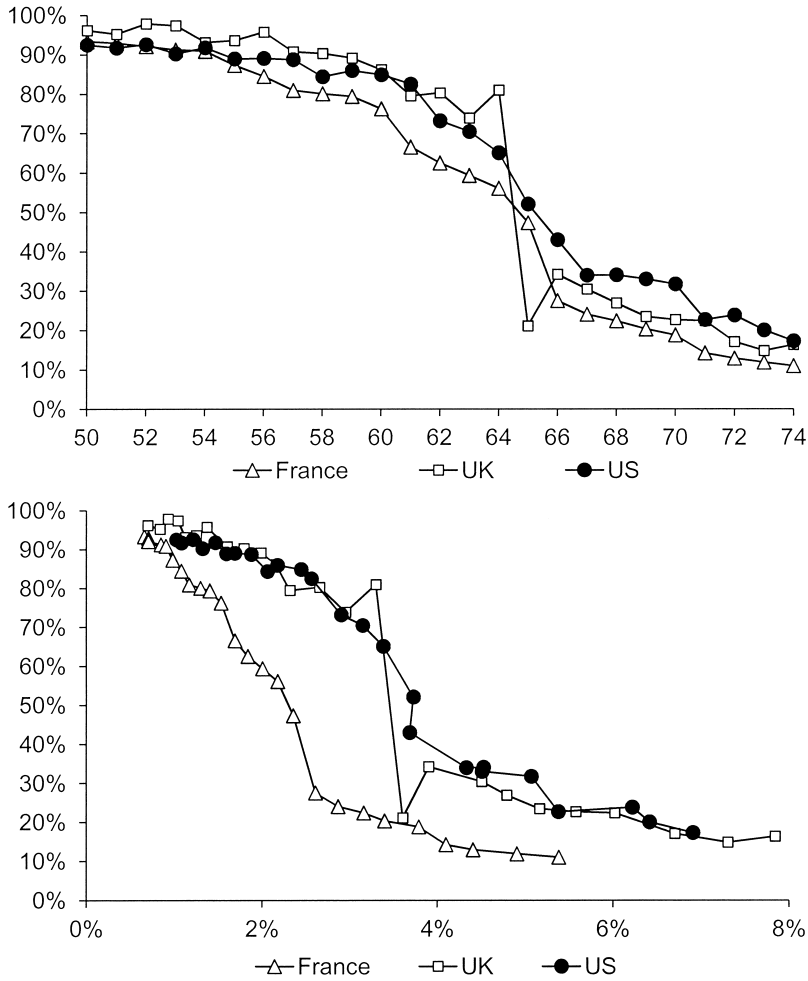

Fig. 1.25 Employment rate by age and mortality rates in 1968 in France, the United Kingdom, and the United States (males)

Sources: Enquête Emploi; Labour Force Survey; Current Population Survey; Human Mortality Database.

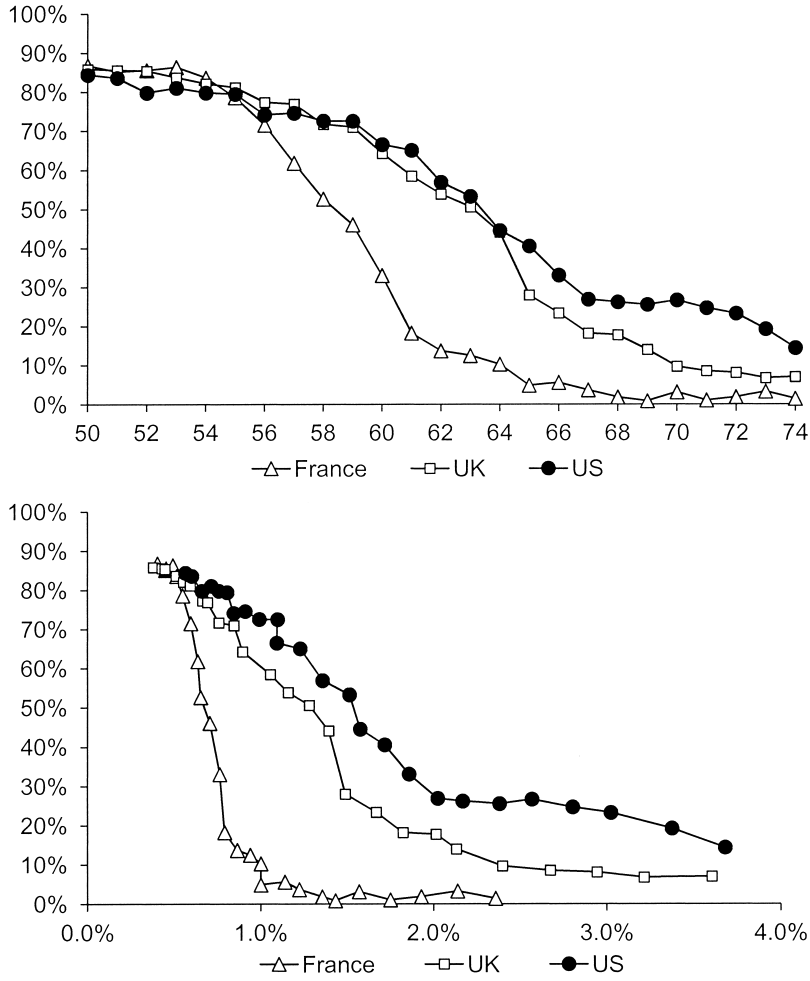

Fig. 1.26 Employment rate by age and mortality rates in 2006 in France, the United Kingdom, and the United States (males)

Sources: Enquête Emploi; Labour Force Survey; Current Population Survey; Human Mortality Database.

much lower employment rates than the United States for mortality rates above 1 percent. While in 1968 the United Kingdom had lower employment rates than the United States after age sixty-five, the British males had at that time higher mortality rates, conditioning on age, than American ones. On the other hand, in 2006, British males saw their mortality rates drop to the level of the Americans and therefore experienced much lower employment rates than the United States at any given mortality rate.

In 1968 France had relatively high employment rates at older ages, still

lower than the United States and the United Kingdom, but with a similar pattern. However, already in 1968, French males experienced lower mortality at a given age than American and British males. This leads to much lower employment rates in France than in the United States and the United Kingdom for a given mortality rate in 1968. By 2006 the lower mortality rates of French males is still visible, but employment rates at older age has dropped further, leading to a much bigger difference with the other two countries, especially at low mortality rates. For instance, for a 1 percent mortality rate the French males have, in 2006, an employment rate of 12 percent against 61 percent for the United Kingdom and 72 percent for the United States, and against 80 percent for French males in 1968.

1.5 Evidence from Disability Benefits Reforms

The evidence presented so far relies heavily on times series but does not show any causal impact that policy targeted on disability benefits could have on employment and retirement patterns of individuals, in particular those who report some form of incapacity to work. This section presents evidence from two reforms of the UK disability benefits: the 1995 reform, which intended to make the health test stricter, while the Pathways-to-Work program was designed to help IB claimants move off benefits and return to work.

1.5.1 The 1995 Reform

Incapacity benefit replaced IVB and sickness benefit in April 1995. The effect of the reform was to reduce the benefit's generosity in a number of ways and to tighten the eligibility requirements.[9]

The reduction in generosity was realized by a number of different changes. First, the reform reduced the rate of benefit. The IB is paid at three different rates, according to the length of the period of incapacity. Short-term lower rate IB has replaced sickness benefit for people not eligible for SSP. A short-term *higher* rate of ICB is payable from week twenty-nine to week fifty-two. In spite of its name, this is less generous than IVB. Long-term IB, which is as generous as IVB, is only payable from week fifty-two. Second, the generosity of the age additions has been reduced. Previously, someone would have been eligible for an age addition to their invalidity pension if the period of incapacity began before age fifty-nine. Since 1995 they are only eligible for an age addition if the period of incapacity begins before age forty-five. In addition, the age additions are payable after week fifty-two, when long-term ICB begins, rather than after week twenty-eight. Third, IB became taxable from 1995 onward. This brings it into line with the other

9. The changes affected only new claimants after April 1995. Those people already entitled to receive invalidity benefit continued to do so under the old rules.

main benefits (retirement pensions and unemployment benefits) and income support, which are subject to income tax. However, compensatory disability benefits (war disability pension and industrial injuries disablement pension) and extra costs disability benefits (disability living allowance, attendance allowance) are not subject to tax. Fourth, unlike IVB, long-term IB is not payable to anyone over the state pension age, although people who start receiving short-term IB before the state pension age can continue to do so for the full fifty-two weeks.

The tightening of eligibility requirement mostly came about with the replacement of the "suitable work test" that applied to IVB recipients after twenty-eight weeks by the "all work test." Instead of an assessment of a person's ability to perform jobs that it was reasonable to expect them to do given their age, health, and qualifications, the all work test required an assessment of the person's ability to do any kind of work. The all work test involved an objective assessment of the level of difficulty the person had in performing different physical and mental activities (for example, walking up and down stairs, bending and kneeling, coping with pressure). Points were awarded for the degree of difficulty they had performing each activity, with a minimum total number of points necessary to be deemed incapable of work. A second change is that the all work test is carried out by the government medical service rather than the individual's own doctor. As with IVB, the claimant has the right to appeal for their case to be heard by a social security appeals tribunal.

The first evidence one can gather on the 1995 reform is to look at the change in inflows into the IVB/IB rolls. Given that the reform has made qualifying for the benefit harder and that the generosity of the benefits has been reduced, one could expect to see changes in inflow rates into the scheme. Figure 1.27 represents the number of claimants to IVB and IB whose claim duration is less than one year. This is a relatively good proxy for the inflow rate although it is affected during the 1980s by the introduction of SSP. The latter has led to a decrease in inflows to IVB by shifting short-term sick into the employers' sickness scheme. In 1992 the recession hit the United Kingdom acutely, and this seems to have led to a peak in inflows onto IVB. The 1995 reform is associated with a dramatic drop in inflows, which subsequently stabilized at the pre-1992 level.

Disney, Emmerson, and Wakefield (2003, 2006) examined the relationship between health and employment in the United Kingdom using panel data from the British Household Panel Survey from 1991 to 1998. They used a fixed-effects conditional logit model, instrumenting self-reported general health by using responses to questions about specific health problems (following Bound et al. 1999). Older age, reaching the state pension age, and deteriorations in health were all found to lead to increased probability of leaving work. They also tested whether the 1995 reform strengthened the relationship between health and employment by estimating how the

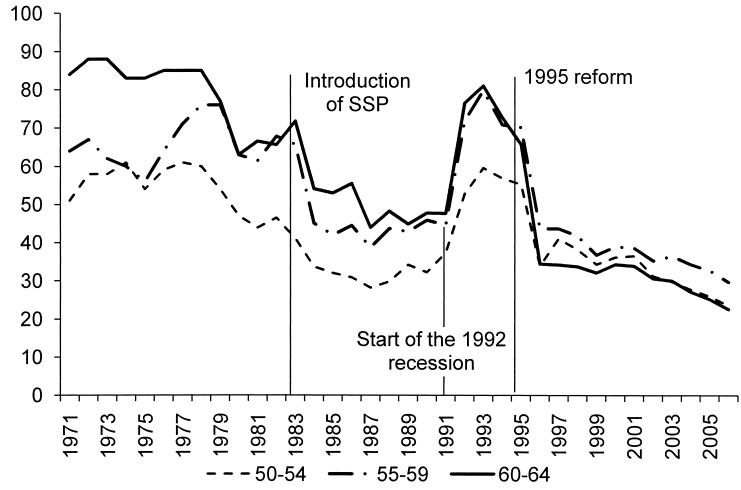

Fig. 1.27 Change in inflows into IB rolls (men, fifty to sixty-four years old, duration < 1 year)

Source: The IV/IB claimants' data are from Anyadike-Danes and McVicar (2007).

coefficient on health stock interacted with the treated group. The estimated coefficients were positive, but not statistically different from zero at conventional levels of statistical significance.

As an alternative and using the same data set, we have run a probit retirement model among those in work, controlling for Disney, Emmerson, and Wakefield's estimated health stock. We plot in figure 1.28 the year dummies before and after the reform. The coefficients for men do drop markedly postreform, with the combined 1995 to 1996 coefficients statistically different from the combined 1993 to 1994 coefficients. No statistically significant effect is found for women.

1.5.2 Pathways-to-Work Reform

Although the 1995 and 2001 reforms were associated with the ending of the increasing trend in numbers receiving disability benefits, the stock of recipients remained at a high level. As a result a new program, called Pathways-to-Work, designed to help claimants return to work, was implemented. It comprised three components: an increase in financial incentives to return to work with the ability to keep (approximately) 50 percent of the disability benefit for up to twelve months after returning to work; increased conditionality of benefits with mandatory work-focused interviews; and voluntary schemes to help beneficiaries manage their health problem more successfully. Initially the program was applied to those moving on to disability benefits (rather than existing claimants), and the impact of this program on new claimants was piloted and has been thoroughly evaluated (see Adam, Bozio, and Emmerson 2012).

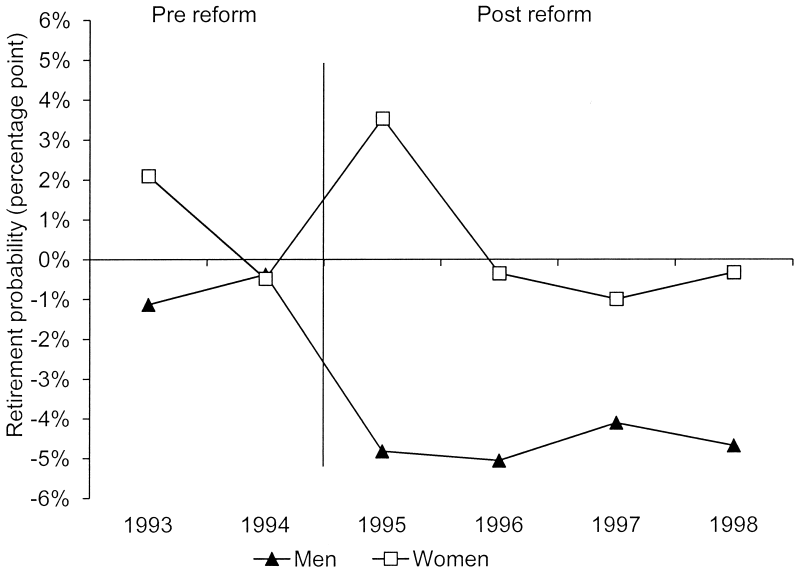

Fig. 1.28 Effect of the 1995 reform on retirement probability

Note: Figure shows estimated marginal effects of year dummies from a probit retirement model among those in work in the previous wave, also controlling for health stock (from Disney, Emmerson, and Wakefield 2003), a cubic in age, regional unemployment rate, whether own home outright, and dummies for reaching the state pension age and being in a couple. Model estimated on individuals aged fifty to sixty-four in 1991.

The program was first piloted in three large areas in October 2003, and four further large areas in April 2004. Later on the scheme was expanded to other areas of the country, in various phases. We present in figures 1.29 and 1.30 the outflow rate at six months out of IB in the pilot areas and subsequent expansion areas. After the introduction of the program the exit rate out of benefit increased substantially in each of the treated areas. This provides convincing evidence that the program had a decisive impact on movements off benefits, although there is some evidence that the effect became smaller as it was rolled into subsequent areas. Adam, Bozio, and Emmerson (2012) have shown that the impact on exit out of benefit has been concentrated on durations less than one year, suggesting that the program has mostly been successful in bringing forward exit out from benefit among those who would have left within one year of receipt, rather than removing from the disability rolls those who would otherwise have received benefits for longer than a year. Using a difference-in-difference strategy, the authors show that the program has had a significant effect on the probability to return to work in the two groups of pilot areas, but that this positive effect has been limited to those who do not report a mental health problem and was concentrated on women.

The evaluation of this program highlights that outflows from benefit,

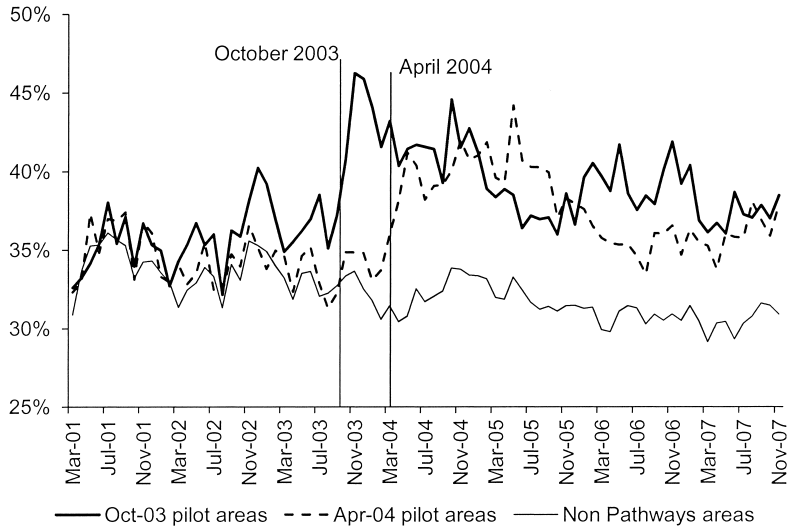

Fig. 1.29 Six-months outflow rate from IB, by pilot and nonpilot areas
Source: Administrative data on benefit flows, DWP.

and more specifically back to employment, do matter considerably. Furthermore, they are not necessarily the same: the study shows that while the impact on benefit receipt did not persist beyond twelve months, the employment impact was still significant at eighteen months. Even if policymakers have tended to concentrate on stricter eligibility with the hope of reducing inflows to benefit, the case for an outflow policy remains strong, at least within the UK institutional setting.

1.6 Conclusion

Over the last thirty years pathways to retirement have changed substantially in the United Kingdom. They were dominated by spells of unemployment in the late 1970s, with an increased importance of disability spells from the mid-1980s onward. Pathways to retirement through unemployment were reduced in the early 1990s, while disability spells started to be less common from the mid-1990s onward. At the end of the period—before the financial crisis—the direct route from work to retirement was increasingly more common.

The empirical evidence on the underlying causes of these changes is still mixed. There is weak evidence of unemployment and disability reforms' effects on the routes to retirement, but the general economic conditions seem to have been important driving forces during the entire period. Changes in health measures do not provide convincing explanations for these trends: mortality has been falling over the period without any link to the share of

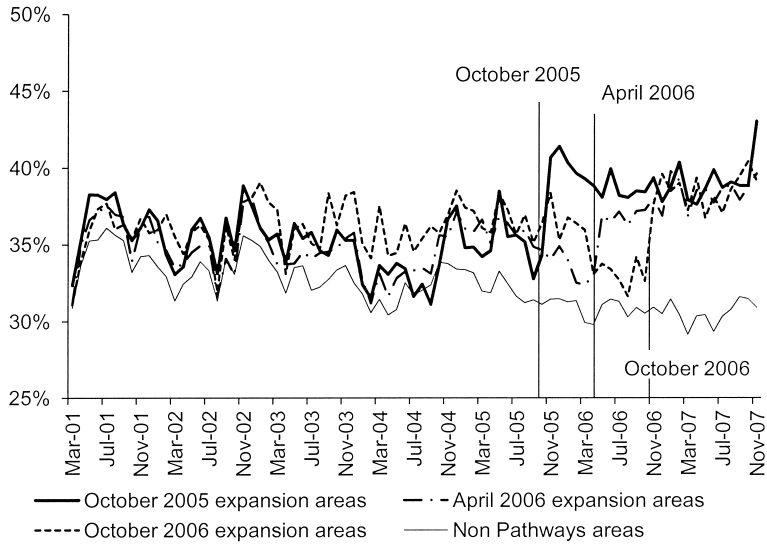

Fig. 1.30 Six-months outflow rate out of IB in the expansion areas
Source: Administrative data on benefit flows, DWP.

the population reporting ill health or disability or to the number claiming benefits. There is some evidence though that self-reported disability is associated with changes in the number of disability claimants.

There is also evidence that recent reforms have also had an impact. The 1995 reform was associated with, at the very least, the halting of the previous growth in the rate of in-flow onto IB (and possibly also a fall in the percentage describing themselves as having a limiting long-standing illness). Evidence from the pilots of the Pathways-to-Work program suggests that those moving onto disability benefits moved off these benefits faster than they would otherwise have done as a direct result of the program. This program was also found to have an enduring impact on subsequent employment rates. While the recent financial crisis and associated recession is likely to lead to much attention being focused on getting the newly unemployed back in to paid work, those who receive disability benefits and who could potentially return to the labor market may still need assistance.

References

Adam, S., A. Bozio, and C. Emmerson. 2012. "Reforming Disability Insurance in the UK: Evaluation of Pathways to Work." Institute for Fiscal Studies (IFS) Working Paper, forthcoming.

Anyadike-Danes, M., and D. McVicar. 2007. "Has The Boom in Incapacity Benefit Claimant Numbers Passed its Peak?" Economic Research Institute of Northern Ireland (ERINI) Working Paper, December.

Banks, J., R. Blundell, A. Bozio, and C. Emmerson. 2010. "Releasing Jobs for the Young? Early Retirement and Youth Unemployment in the United Kingdom." In *Social Security Programs and Retirement around the World: The Relationship to Youth Employment,* edited by David A. Wise and Jonathan Gruber, 319–44. Chicago: University of Chicago Press.

Banks, J., A. Kapteyn, J. Smith, and A. van Soest. 2008. "Work Disability is a Pain in the ****, Especially in England, the Netherlands, and the United States." In *Health at Older Ages: The Causes and Consequences of Declining Disability among the Elderly,* edited by D. Cutler and D. Wise, 251–94. Chicago: University of Chicago Press.

Benitez-Silva, H., R. Disney, and S. Jimenez-Martin. 2010. "Disability, Capacity for Work and the Business Cycle: An International Perspective." *Economic Policy* 63:483–536.

Beveridge, Sir William. 1942. *Social Insurance and Allied Services.* Cmnd 6404. London: Her Majesty's Stationery Office (HMSO).

Bound, J. 1991. "Self-Reported Versus Objective Measures of Health in Retirement Models." *Journal of Human Resources* 26:106–38.

Bound, J., and R. Burkhauser. 1999. "Economic Analysis of Transfer Programs Targeted on People with Disabilities." In *Handbook of Labor Economics,* edited by O. Ashenfelter and D. Card, 3417–528. Amsterdam: Elsevier.

Bound, J., M. Schoenbaum, T. R. Stinebrickner, and T. Waidmann. 1999. "The Dynamic Effects of Health on the Labor Force Transitions of Older Workers." *Labour Economics* 6:179–202.

Burchardt, T. 1999. "The Evolution of Disability Benefits in the UK: Re-weighting the Basket." London School of Economics, Center for Analysis of Social Exclusion (CASE) Paper no. 26, June.

Creedy, J., and R. Disney. 1985. *Social Insurance in Transition: An Economic Analysis.* New York: Oxford University Press.

Disney, R., C. Emmerson, and M. Wakefield. 2003. "Ill Health and Retirement in Britain: A Panel Data Based Analysis." Institute for Fiscal Studies, (IFS) Working Paper no. WP03/02.

———. 2006. "Ill Health and Retirement in Britain: A Panel Data Based Analysis." *Journal of Health Economics* 25 (4): 621–49.

Disney, R., and S. Webb. 1991. "Why Are There So Many Long Term Sick in Britain?" *Economic Journal* 101 (405): 252–62.

Doherty, N. 1979. "National Insurance and Absence from Work." *Economic Journal* 89 (353): 50–65.

Fenn, P. 1981. "Sickness Duration, Residual Disability, and Income Replacement: An Empirical Analysis." *Economic Journal* 91 (361): 158–73.

Gilbert, B. 1965. "The British National Insurance Act of 1911 and the Commercial Insurance Lobby." *Journal of British Studies* 4 (2): 127–48.

Gruber, J., and D. Wise, eds. 1999. *Social Security Programs and Retirement around the World.* Chicago: The University of Chicago Press.

———. 2004. *Social Security Programs and Retirement around the World: Micro-Estimation.* Chicago: The University of Chicago Press.

Kapteyn, A., J. Smith, and A. van Soest. 2007. "Vignettes and Self-Reports of Work Disability in the United States and the Netherlands." *American Economic Review* 97 (1): 461–73.

Myers, R. J. 1982. "Why Do People Retire from Work Early?" *Aging and Work* 5:83–91.

Nagi, S. 1965. "Some Conceptual Issues in Disability and Rehabilitation." In *Sociology and Rehabilitation,* edited by M. B. Sussman. Washington, DC: American Sociology Association.

———. 1991. "Disability Concepts Revisited: Implications for Prevention." In *Disability in America: Toward a National Agenda for Prevention,* edited by A. M. Pope and A. R. Tarlove, 309–27. Washington, DC: National Academy Press.

Piachaud, D. 1986. "Disability, Retirement and Unemployment of Older Men." *Journal of Social Policy* 15 (2): 145–62.

Shoven, J. 2010. "New Age Thinking: Alternative Ways of Measuring Age, Their Relationship to Labor Force Participation, Government Policies and GDP." In *Research Findings in the Economics of Aging,* edited by David Wise, 17–35. Chicago: The University of Chicago Press.

Walker, A. 1981. "The Industrial Preference in State Compensation for Industrial Injury and Disease." *Social Policy and Administration* 15:54–71.

Walker, A., and L. Walker. 1991. "Disability and Financial Need—The Failure of the Social Security System." In *Disability and Social Policy,* edited by G. Dalley. London: Policy Studies Institute.