

Trends in the Employment of Disabled People in Britain

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Non-technical summary

The number of disabled men and women claiming out-of-work benefits has been of concern both to policy makers (worried about public expenditure) and to disabled people themselves (worried about poverty). There was a large increase in claims over the 1980s and early 1990s, and the numbers have remained stubbornly high since then, despite efforts by governments of all parties to reduce them.

Benefit statistics tell us very little about the people who do not have jobs, and nothing at all about disabled people who do have jobs. This paper is based on analysis of the series of General Household Surveys between 1974 and 2005. Year on year outcomes for people with limiting long-standing illness (aged 20-59) are compared with those of people with no health problems. This is effectively complemented by more detailed data on health conditions available in some GHS years.

- The prevalence of disability (the proportion of working age adults who report a limiting long-standing illness) rose from 14% in 1975 to 18% in 1996, before falling back again to 16% in 2004.
- The ‘disability employment penalty’ is a measure of the extent to which disabled people are less likely to have a job than otherwise similar non-disabled people. It increased from 17% in 1987 to 28% in 2000 – but has not reduced since then.
- These figures refer to all people with limiting health conditions. It is commonly assumed that most of the changes in prevalence and in employment prospects have affected people with relatively minor impairments – but the research shows, on the contrary, that people with severely disadvantaging sets of health conditions have been more, not less, affected by the trends.
- Payments of the main social security benefits (Incapacity Benefit and Severe Disability Allowance) lagged behind the number of disadvantaged disabled people in the 1970s and 1980s, especially for women. But they had caught up by 1990.
- The detailed analysis made possible by the series of surveys suggests that changes in disabled peoples’ employment rates or in benefit payments have not coincided with major changes in the social security rules and procedures.
- Disabled people are very sensitive to long-term geographical variations in the health of regional labour markets; while non-disabled people have similar prospects, wherever they live.

- But disabled people's employment is hardly affected by booms or busts in the national economy.
- People without educational qualifications are more likely to be disabled, and their employment rates are more affected by disability, than (at the other extreme) people with degrees. Both of these tendencies have increased in intensity over time, so that the current generation of unqualified people has very high rates of disability, and the disabled members of the group have very low rates of employment. But the number of poorly educated people in Britain has been declining over the decades, so very little of the overall growth in the number of disabled people without work can be explained by the skills effect.
- The fact that well-educated people are relatively less affected by disability helps to show that it is not disability, on its own, that determines outcomes, but the interaction between disability and opportunities. Disability nevertheless has a substantial effect across the spectrum.
- The research helps to counter the idea that some disabled people are unequivocally capable of work, while others are wholly incapable. It supports instead the concept of disadvantage – a sliding scale of employment probabilities affected both by the nature and severity of people's impairments, and by the willingness of employers to hire them.

This analysis of the trends over three decades has tended to undermine some of the hypotheses frequently put forward to explain the experience of disabled people. It is possible that the main shift has been at the boundary point between social convention and labour market activity. The same period witnessed a major positive shift in the economic identity of women with children - mothers have increasingly seen themselves as potential workers. It is possible that an opposite trend is affecting disabled people, who increasingly see themselves, and are seen by others, as permanently unable to work – in spite of the new emphasis on disability rights in public discourse. While employers have become more willing to recruit from the large pool of well-qualified women, they have become less motivated to hire or retain people who combine ill-health with low skill levels.

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Abstract

The number of people claiming incapacity benefits increased rapidly to the mid 1990s, and has hardly reduced since then. This paper uses survey data to plot trends over time in the prevalence of disability, and in the employment rates of disabled people, in a way which is independent of, but comparable with, benefit statistics. The research is mainly based on General Household Survey data across the period 1974 to 2005. Much of the analysis is based on a loose definition of disability, but this is effectively complemented by more detailed data on health conditions available in some GHS years.

JEL: I38, J14, J64

Keywords: disability, disadvantage, labour market

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The General Household Survey was made available by the Office for National Statistics and distributed by the UK Data Archive

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1. Introduction

Disability and employment

From the earliest beginnings of the welfare state, it has been assumed that disabled people would be unlikely to have a job. This assumption was built in to Britain's national insurance scheme in the 1940s, where 'sickness' was considered a sufficient explanation for being out of work and claiming benefit, without the further requirement of having to look for work as an 'unemployed' person. Edward Heath's government made this distinction even clearer in the early 1970s, establishing Invalidity Benefit, paid at a higher rate than Sickness Benefit or Unemployment Benefit, for people who were judged incapable of work for long periods. The idea that severely disabled people may be excluded from employment has continued through Incapacity Benefit (established in 1995). The concept of incapacity remains an important component of the current Employment and Support Allowance (introduced in 2008), although the emphasis is now much more focussed on identifying people who can work (and should be encouraged to do so) as well on supporting people still judged to be incapable.

The concept of 'incapacity' implies that some people are unable to work and entitled to special treatment in the social security system, while everyone else is able to work and should expect to take their chances in the labour market. This simple distinction has been subject to two significant modifications over the years.

The first issue is that an individual's job prospects are not determined simply by his or her own self-contained characteristics, but also by the economic and institutional framework within which employment is negotiated. Whereas the personal or medical model of disability focuses on the constraints on productive activity imposed by a disabled person's set of impairments (so that they are 'incapable' of work), the social model focuses on the constraints imposed on disabled people's activities by social care provision, transport networks, and (especially) employment practices which, by failing to adapt to the varying needs and skills in the population, effectively exclude people from the workforce. It is not so much that disabled people are unable to work, as that employers will not offer them a job.

The second issue is that dividing disabled people into two groups – capable and incapable of working - is an oversimplification. In practice there is a wide range of sets of conditions, impairments and severities, which have varying effects on people's probability of working. These effects vary, too, according to other sets of circumstances – for example, well-educated people are much less vulnerable to the disadvantaging effects of disability than others (with similar impairments) with no qualifications. A main conclusion of earlier papers in this series was that, far from dividing into two readily distinguishable groups, there is a continuous range of disadvantage, from those whose job prospects are hardly affected, to those with virtually no chance of working. In the middle of the range one can think of a large group whose probability of employment predicted by their health status is about 50:50 - their outcome must be influenced by unobserved personal circumstances, or even by chance, rather than determined inexorably by health conditions.

The importance of trends over time

All of these issues can be discussed, and researched, in relation to the employment rates of disabled people observed at any one time. But the situation changes. It has been argued that the great majority of disabled people had jobs during the second world war, when every worker was needed and every individual was conscious of his or her obligation to contribute to the cause. There is no consistent statistical series to enable us to make a systematic comparison between the war and the subsequent peace, but it is very clear that the number of people out of work and claiming benefits on grounds of incapacity increased steadily and rapidly between the 1970s and the mid 1990s before levelling off the past fifteen years or so.

The trends over three decades raise important questions about the relationship between disability and employment. Those questions are the main focus of this paper. Many disabled people were out of work even in the 1970s; and similar people would presumably be even more disadvantaged nowadays. Many disabled people are now in work, and similar people would have been rather less disadvantaged in the 1970s. These cases represent the constants. But clearly something has changed, for the large number of disabled people who would have been in work in the 1970s but are out of work now. What has changed? What do these changes signify for our understanding of the medical and social models of disability, and about the operation of the labour

market? What are the implications for government policy, whose objectives remain both to encourage employment among those who can work, and provide security for those who cannot.

The headline statistics quoted by politicians and policy commentators are based on the number of people claiming benefits on grounds of incapacity. The statistics are briefly outlined in the next section. But administrative statistics are not a reliable base for detailed research aimed at understanding the underlying trends. The official records are affected by rules about who is and who is not entitled to claim. They provide little information about the impairments and other characteristics of those who receive benefit, and no information at all about those who do not. The rest of the paper is mainly based on new analysis of a survey of the general population. Focussing on people of working age, how many men and women are disabled? What impairments and conditions do they report? What kinds of people are they, in terms of age, education and so on? How many of them have jobs, and what are the influences on their employment chances? All of these issues have been addressed in a previous paper in this series considering the employment of disabled people at one point in time. The emphasis in this paper is on changes over time since the mid 1970s. In section 6, the results of the survey will be compared directly with benefit statistics, to make the link between the two sources of information.

Research context

This is one of several papers analysing employment disadvantage written by Richard Berthoud and/or Morten Blekesaune, all using similar data sources and methodologies.

The other papers (so far available) are:

Focussing on disability:

The Employment Rates of Disabled People, DWP Research Report 298, 2006

‘Have some European countries been more successful at employing disabled people than others?’ ISER working paper 2007-23, University of Essex, 2007

‘Disability employment penalties in Britain’, *Work, Employment and Society*, vol 22 no 1, 2008

Comparing sources of disadvantage:

Multiple Disadvantage in Employment, Joseph Rowntree Foundation 2003

Work-Rich and Work-Poor: three decades of change, Policy Press, 2007

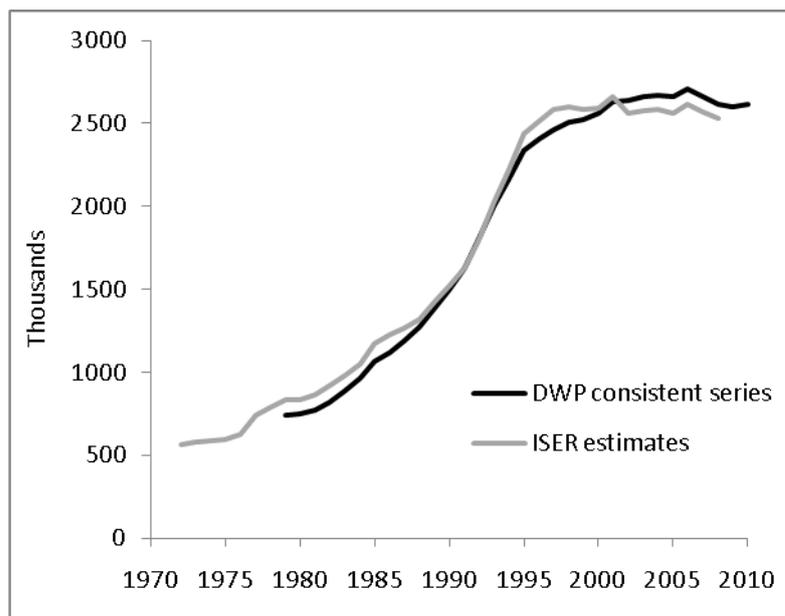
Persistent Employment Disadvantage, DWP Research Report 416, 2007

‘Patterns of non-employment, and of disadvantage, in a recession’, *Economic & Labour Market Review*, vol 3, no 12, 2009

2. Background – rising benefit claims

Separate benefits for people out of work on grounds of disability were introduced in the 1970s, so the sequence of claimant counts starts from that point. Figure A records the total number of claimants of all three relevant benefits, using two versions of the statistics. The black line represents the DWP's official estimate of the numbers, using definitions that are as far as possible consistent from year to year, and avoiding double counting of people claiming more than one benefit. Because the official sequence runs only from 1979 to 2005, we have also made our own estimates based on published statistics. Our less official version is close, though not identical, to the DWP series over the period when both are available, and enables us to add some more detail to the analysis. The graph shows a steady rise in the number of men and women receiving benefit on grounds of incapacity for work, from just under 600,000 in 1975 to just under 2.5 million in 1995 - a fourfold increase, equivalent to 7 per cent growth each year (compound). After 1995, though, the rise in the number of claims in payment has either reduced or stopped, depending on which of the two series is being considered

Figure A: Number of working age claimants of benefits on grounds of incapacity for work, 1972-2010



Notes on the benefits included in the statistics reported in Figures A, B and C

Payments of *Sickness Benefit (SB)* and *Statutory Sick Pay (SSP)* (both for short-term sickness) are not included

Invalidity Benefit (IVB, up to 1995): excluding people of pensionable age

Incapacity Benefit (IB, since 1996): recipients, excluding short term (lower) rate

Employment and Support Allowance (ESA, since 2008)

Non-Contributory Invalidity Pension (NCIP, 1977-1983)/Severe Disablement Allowance (SDA, since 1984): excluding people of pensionable age

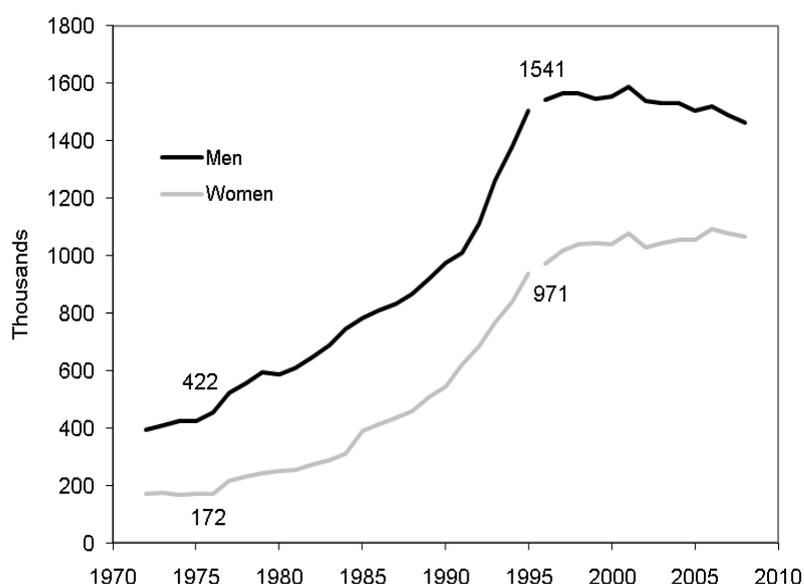
Supplementary Benefit (SuppBen, up to 1986): classified as disabled, and without contributory benefit

Income Support (IS, 1987 to 1999): with disability premium but without contributory benefit.

Incapacity Benefit 'credits only' (since 2000)

Figure B uses the ISER estimates to show that men claimants have outnumbered women throughout the period. But the number of women has been increasing faster – 5.4 fold between 1975 and 1995, compared with 3.6 fold for men. This can probably be explained by the increased proportion of all women who were in work, building up national insurance contributions ahead of their period of incapacity.

Figure B: Men and women recipient of benefits on grounds of incapacity, 1972-2008

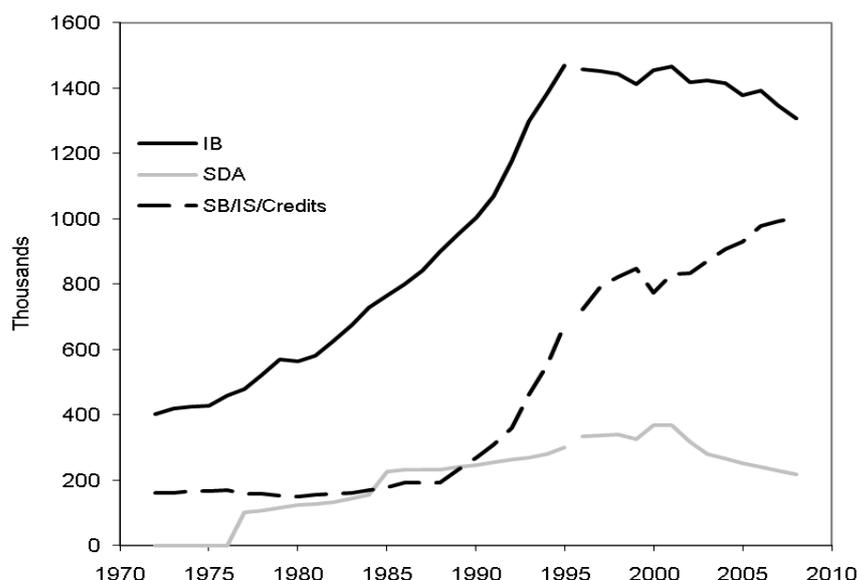


Note that this increase in the number of women claiming one or another of the range of incapacity benefits runs counter to the fall in the number of women not working for other reasons.

It is important to note that these figures do not include the very large numbers of people who have been off work for short periods (less than six months), and who would have claimed either Sickness Benefit (in the early period), Statutory Sick Pay or the short-term rate of Incapacity Benefit (later on).

Figure C shows that the national insurance scheme (IVB and IB) has accounted for the majority of claims. But contributory and non-contributory benefits (SDA) followed very similar paths over the period, in spite of very different entry conditions – both had a very similar proportionate rate of increase up to 1995, and both recorded something of a decline since then. The trend for the social assistance schemes (SB/IS/Credits) followed rather a different course – virtually no increase up to about 1988; a much steeper rise than the other benefits up to 1995; and a continuing uptrend since then.

Figure C: Claimants of three types of benefit on grounds of incapacity, 1972-2008



An interesting feature of these trends is that while the number of men and women actually receiving the two benefits directly targeted at disabled people (IB and SDA) has been declining since the major reform of 1995, the number reported to be entitled to ‘credits only’ has been increasing. In principle these are people who do not have an adequate national insurance record to claim IB, and whose impairments are not severe enough to claim SDA. ‘Credits only’ means that they are credited with national insurance contributions for the duration of their period of incapacity. In the mean time most of them (and their families) claim income support. It is not clear who these people are, why their numbers have been increasing (against the trend for the two direct incapacity benefits). Nor is it clear whether all of them should be included in the count of those dependent on incapacity benefits.

If the counts are confined to incapacity benefits in payment (ie IB and SDA and their predecessor schemes) the rise in numbers is less striking – increasing from 400,000 in 1972, peaking at 1.8 million in 1996, falling back to 1.5 million in 2008.

3. Data: the General Household Survey, 1974-2005

As explained, the main aim of this paper is to use population survey data to unpack the trends in disability and employment, rather than focus on the published benefit statistics. The General Household Survey (GHS) is a continuous multipurpose survey of large random samples of households across Great Britain.¹ The survey has been conducted, using a new sample each time, every year since 1973, with the exception of 1997 and 1999. The latest year available when the data were downloaded for this analysis related to 2005.² In practice the 1973 survey did not have full data on economic activities, and the 1977 and 1978 surveys did not carry the standard question on limiting long-standing illness. These three annual surveys were therefore dropped from the analysis. The database therefore provides 28 annual observations, over a 32 year period.^{3 4}

Structure of the sample being analysed

The analysis in this paper is based on adults aged 20 to 59. Young adults, aged 16 to 19, have not been included because such a high proportion of them are still in full-time education. Men aged 60 to 64 have been omitted because, although still below pensionable age, a high proportion of them have in fact retired – and in this age group, ‘early retirement’ is sometimes a marker of privilege and sometimes a marker of disadvantage. The GHS provides data about each member of every household, but the individual adult is always the unit analysed (ie each member of a couple contributes separately to the statistics). Where an adult within the age range has a partner under 20 or over 59, the former is included and the latter excluded – but we know whether the excluded partner had a job.

¹ The General Household Survey is now known as the General Lifestyle Survey.

² Between 2000 and 2004, the annual sample was based on financial years, eg April 2003 to March 2004, but they are labelled here according to the first-named year, eg 2003, for convenience. In 2005, the first three months of the calendar year were allocated to the 2004/05 survey (and labelled here 2004), while a new (and larger) sample was drawn for the remaining months (and labelled here 2005).

³ ie 1974-2005, excluding '77, '78, '97 and '99.

⁴ Much of the analysis presents year by year estimates of trends in employment rates, disability penalties and so on. To iron-out short-term variations between years, often associated with sampling error, most graphs are smoothed, taking the average of three consecutive observations. Note that where there is a gap in the annual sequence, the three-observation moving average is not exactly the same as a three-year moving average.

Each of the 28 annual GHSs included in the analysis covers between 10,000 and 16,000 men and women within this age range, with an overall total of 360,673 respondents. Where results are shown for a series of years combined, each annual survey has been given a weight based on the number of adults in the population in the years in question, controlling for age and sex. The same weights have also been used to gross up the survey estimates to population totals in section 6.

All the annual surveys asked questions about respondents' economic activity, and about the set of personal characteristics that are known to be associated with people's job prospects. Some of these questions (notably age and sex) were asked and coded identically in every survey, and could easily be compared across the sequence. Others, notably educational qualifications, were asked and/or coded in different ways across the sequence, and an important preparatory task was to ensure that these data were recoded to be as comparable as possible from year to year.

As with all research of this kind, the findings should be treated just as 'estimates', with a margin of error either way associated with sampling considerations, measurement uncertainties and analytical simplifications. It is the broad differences and trends that matter.

Definition of employment

People have been defined as 'in work' if they had a job working 16 hours or more per week at the time they took part in the survey. Less than 16 hours was not counted, on the ground that very short hours cannot be considered either a primary activity or a means of earning a living. The 16 hour cut-off is enshrined in current social security and tax-credit legislation, although the formal boundary was at 30 hours at the beginning of the period under review. Those in full-time education have also been classified as 'in work', because it is widely considered to be both hard work, and a long-term economic investment.⁵ All references in this paper to 'in work' and synonyms such as 'have a job' or 'in employment' refer to this definition. Antonyms such as 'non-working', 'out of work' and so on are also based on this definition. But

⁵ The proportion of those defined as 'in work' who were students rose from 1.1 per cent in 1974 to 3.6 per cent in 2005. They were concentrated among those in their twenties.

the words ‘unemployed’ and ‘unemployment’ refer more narrowly to people seeking work

Defining – and describing - disability

All the surveys in the sequence analysed asked a pair of questions as follows:

Do you have any long-standing illness, disability or infirmity? By long-standing I mean anything that has troubled you over a period of time, or that is likely to affect you over a period of time?

Does this illness or disability limit your activities in any way?

People who answer yes to both questions are treated as experiencing ‘limiting long-standing illness’ (LLI).

Although disability and illness are not the same thing, this pair of questions is acceptable as a rough definition of disability for many general purposes. But when the focus of research is on disability, as in the present paper, it would be desirable to introduce a tighter definition. This can be illustrated by comparing the sample of people identified as LLI in the 1996 GHS, with a specialist survey of disabled people conducted between July 1996 and March 1997. The Health and Disability Survey asked respondents a series of detailed questions about 13 types of impairment – normal functions such as walking, seeing and so on which they could not do, or could do only in a restricted way. Although the threshold above which an impairment was considered disabling was set at a low level, only 12 per cent of the HDS sample (in the age range being analysed here) were counted as disabled, compared with 20 per cent of the GHS sample counted as having a limiting long-standing illness in the same year.

A probable interpretation of this difference is that the LLI group includes people with ill-health which is not impairing, and which does not make much difference to their employment (and other) opportunities. Only 29 per cent of disabled people in the HDS were in work, while 46 per cent of LLI people in the GHS were in work in that year. Although it is not possible to make person by person comparisons between the two sources, simple arithmetic suggests that the people who were “LLI” but not

“disabled” had an employment rate very similar to that of people who reported no LLI at all.

Note that the same problem also affects the definition of disability adopted by the Labour Force Survey, used by the government and its agencies as the official source of data to monitor equal opportunities for disabled people. The LFS persistently overstates the prevalence of disability (compared with specialist surveys), and as a result persistently understates the extent of disadvantage experienced by disabled people.

The LLI definition is the only information that is consistently available right across the GHS series, and it will be used in Sections 4 to 6 of this paper to look at trends across every year in the sequence.

Previous specialised surveys of disabled people have asked much more detailed questions both about the nature and severity of impairments (eg difficulty walking) and about the health conditions which caused those impairments (eg arthritis). All three of these factors (impairment, severity and condition) have been shown to be associated with employment disadvantage. The GHS has no questions about impairment or severity, but it does include questions about health conditions. The results of these questions have not been analysed much in the past, partly because they were not coded for many years. But the condition codes are available for 1974, 1975, 1988, 1989 and 1994-2005. They will be used in Section 7 of this paper to provide a detailed breakdown of disabled people, to see whether the employment position changed more, or less, for those with especially disadvantaging sets of conditions.

In summary, the GHS provides two alternative measures of disability over the period:

- The ‘LLI’ definition is available for 28 years over a 32 year sequence, and provides much the best base for analysis of detailed trends, year by year. On the other hand, it is a crude measure, and probably exaggerates the number of people who should be considered disabled and understates the extent of disadvantage associated with disability.
- The questions about health conditions provide much more detailed information, and can be analysed to provide an indicator of the severity of disability. On the other hand it is available for only 16 GHSs in the 32 year

sequence, with extensive gaps in the record during periods when other data show that substantial changes in disabled people's employment prospects were in progress.

This paper uses both of these sets of questions, the first (LLI) to plot year by year trends in the prevalence of disability and the disadvantage associated with disability; the second (health conditions) to map changes over the period as a whole in more detail. An important editorial dilemma has been whether to report the two sets of results in parallel (discussing both LLI and health conditions in every section), or in series (narrating all the findings about LLI, followed by all the findings based on health conditions). The decision has been in favour of the latter solution, because the reader cannot be expected to switch back and forth between two measures of disability, page by page. So sections 4, 5 and 6 analyse the crude LLI definition, and then section 7 reviews the same set of analytical issues using the more detailed disability measures provided by the health-condition questions. The important point is that analysis of the detailed questions, enabling a distinction between more and less severely disabled people, tends to confirm, rather than contradict, the research conclusions derived from the analysis of the more superficial definition.

4. Trends in the prevalence of disability (LLI)

One of the starting points for this enquiry was the clear rise in the number of disabled people claiming Invalidity Benefit between the mid 1970s and the mid 1990s, followed by a plateau in the numbers claiming Incapacity Benefit since then (see Figure A). Our main concern is with the proportion of disabled people who do and do not have jobs. But it is appropriate also to establish whether the proportion of working age adults reporting disability rose or fell over the period.

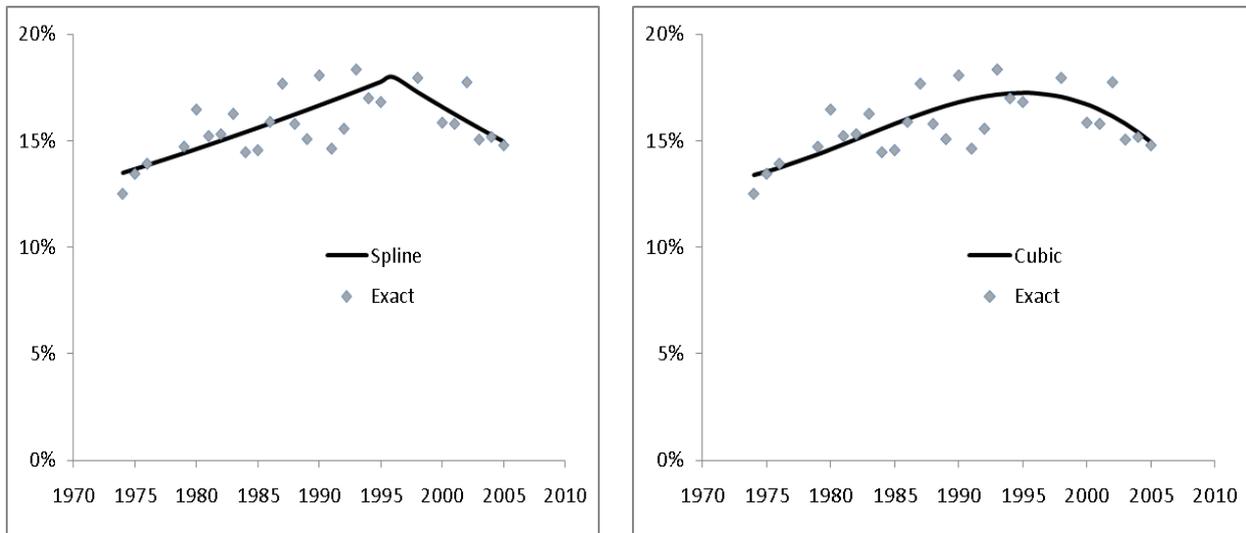
It is commonly assumed that improvements in medical treatments mean that there will have been no increase in the prevalence of disability. But direct measures suggest that there was a gradual increase over the 20 years from 1975 to 1995. The grey diamonds in Figure D (identical in the left and right hand versions) show the prevalence of limiting long-standing illness (LLI) in each year of GHS observations. There is a clear rising trend up to the mid 1990s, followed by a falling trend to the mid 2000s. The two versions of the graph, left and right, use two different formulae to summarise that pattern in an unbroken line.

On the left, it is assumed that there was a steady increase in LLI up to 1996, and a steady decrease since then. The pattern is imposed on the data using a 'spline' with a knot at 1996. This pattern could be interpreted as meaning that there was an underlying increase in LLI, or in the reporting of LLI, up to 1996; but that something happened in 1996 so that the prevalence, or the reporting, of LLI decreased after that. It might be suggested that the replacement of IVB by IB, and the introduction of the Disability Discrimination Act, both of which occurred in 1995, could have caused this change in the trend of (reported) outcomes..

On the right of Figure D it is assumed that there was an upwards trend in LLI, but that the slope of the increase was naturally declining over the years. By the mid 1990s, the decline had reached the point at which the natural increase had been converted into a natural decrease. This pattern is imposed on the data using a formula in which the level of LLI is determined by a combination of the year, the square of the year and the cube of the year. This pattern could be interpreted as meaning that there was no abrupt

change in conditions in the mid 1990s – there was some underlying process in which the slowing of the growth in LLI eventually converted itself into a decrease.

Figure D Prevalence of limiting long-standing illness, 1974-2005



Statistically, there is no way of preferring one of these explanations of the pattern to the other. Both of them describe the trends over the period as efficiently as each other.⁶ In the remainder of this section, the cubic formula is used to analyse the pattern of rising and falling prevalence by age, family position and educational qualifications, because it is more flexible.

Relationship with the labour market

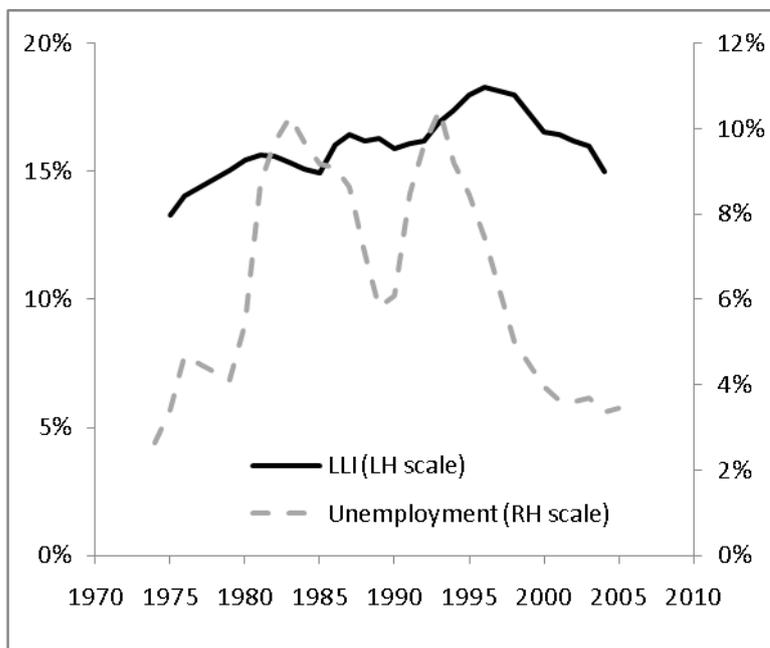
It has often been argued that the prevalence of disability, or at least the number of people reporting that they are disabled, will tend to rise during periods when jobs are scarce (and fall when jobs are plentiful). This might happen in two ways: people with moderate levels of ill-health who were able to hold down a job in good times, are thrown out of work and became more conscious of their impairments; or the threat or experience of unemployment might trigger or exacerbate periods of ill-health.

We can compare the year by year trends in the prevalence of limiting long-standing illness, with trends in the unemployment rate (Figure E). (Unemployment is defined

⁶ That is, the pseudo R^2 s of the two regression equations were almost identical, and the number of parameters is the same.

strictly as the number of people looking for work as a proportion of those working or looking, excluding economically inactive people.) There was a period in the 1970s when both types of problem were on the increase; and there was a period after 1995 when both were falling. But over the clearly defined periods of boom and bust between 1980 and 1995, there is no sign that the reported extent of disability tracked unemployment rates as they soared and plummeted.

Figure E: Prevalence of limiting long-standing illness, and of unemployment, over the trade cycle, 1974-2005

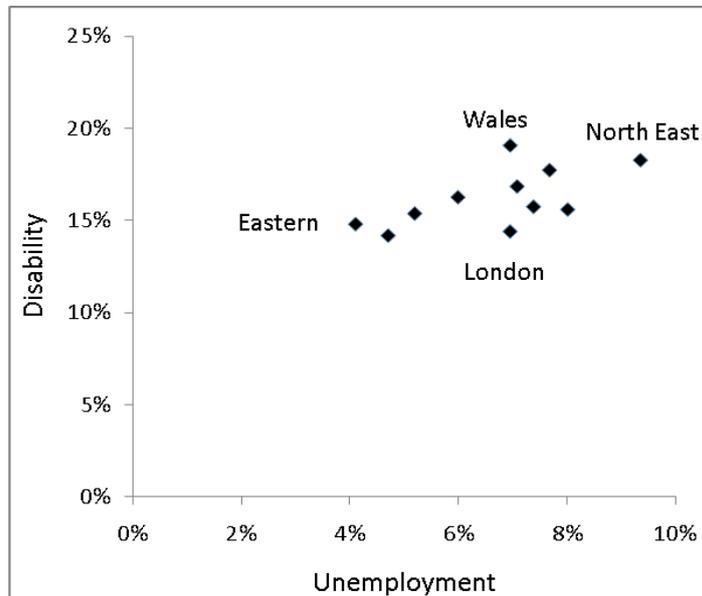


Note: disability is plotted as the three observation moving average
Unemployment is as measured by the GHS, unsmoothed

Another perspective on the relationship between economic opportunities and self-reported disability is that it is variations between areas, rather than over time, that matters, so that regions with persistently high unemployment rates might have persistently high prevalence of limiting long-standing illness. Figure F plots the averages over the whole 30 year period. There is some sign of a positive relationship between the two measures. If we compare the Eastern and the North Eastern regions, a 5.0 per cent difference in average unemployment rates is paralleled by a 3.5 percentage point difference in average rates of ill-health – and many of the other regions are strung out in between in a reasonably consistent pattern. But if we

compare London and Wales, both have had a very similar rate of unemployment over the years, but Wales records a 4.5 percentage point excess of reported disability.

Figure F: Long-term rates of limiting long-standing illness, and of unemployment, across regions

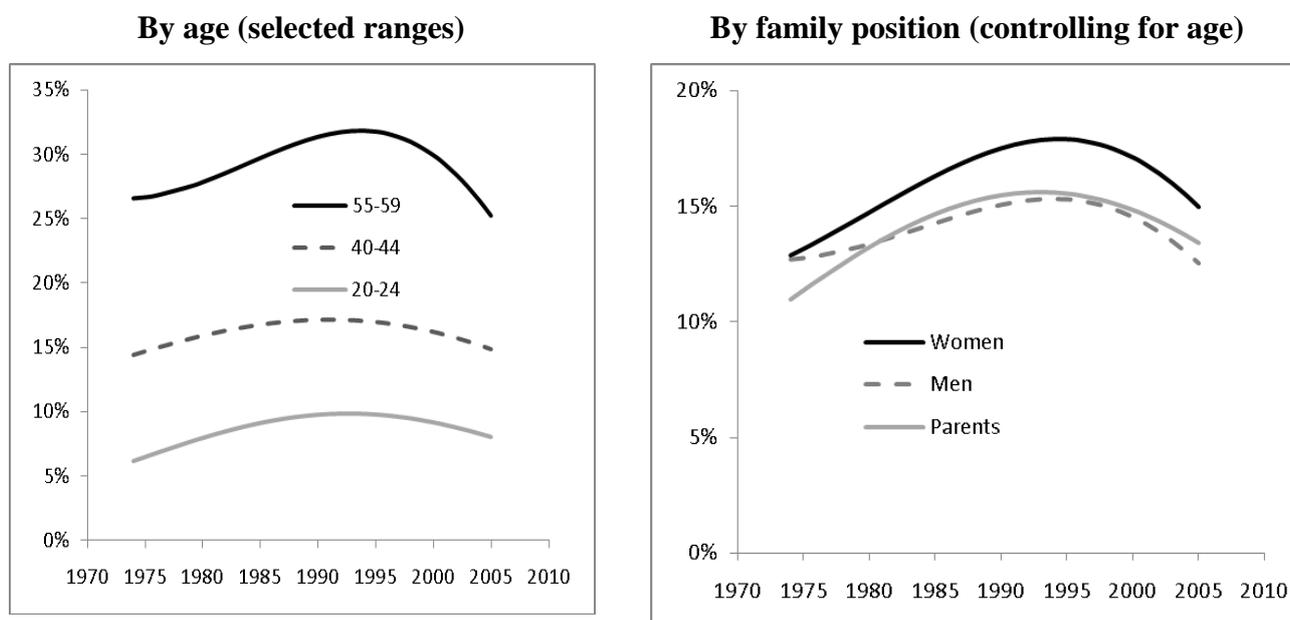


Demographic variations in disability

The prevalence of disability is known to vary between subgroups of the population. The key interest for this analysis is whether those variations have changed over time, leading to trends in the composition of the group at risk. Figure G uses the cubic formula to summarise trends over the period (equivalent to the right hand side of Figure D) showing that:

- Older people have a much greater risk of disability than younger adults. But all age groups repeat the rising and falling trend turning in the mid 1990s.
- For adults of a given age, women without children are more likely to report limiting long-standing illness than men, and parents (defined here as mothers, plus lone fathers) .

Figure G: LLI analysed by age and, family position



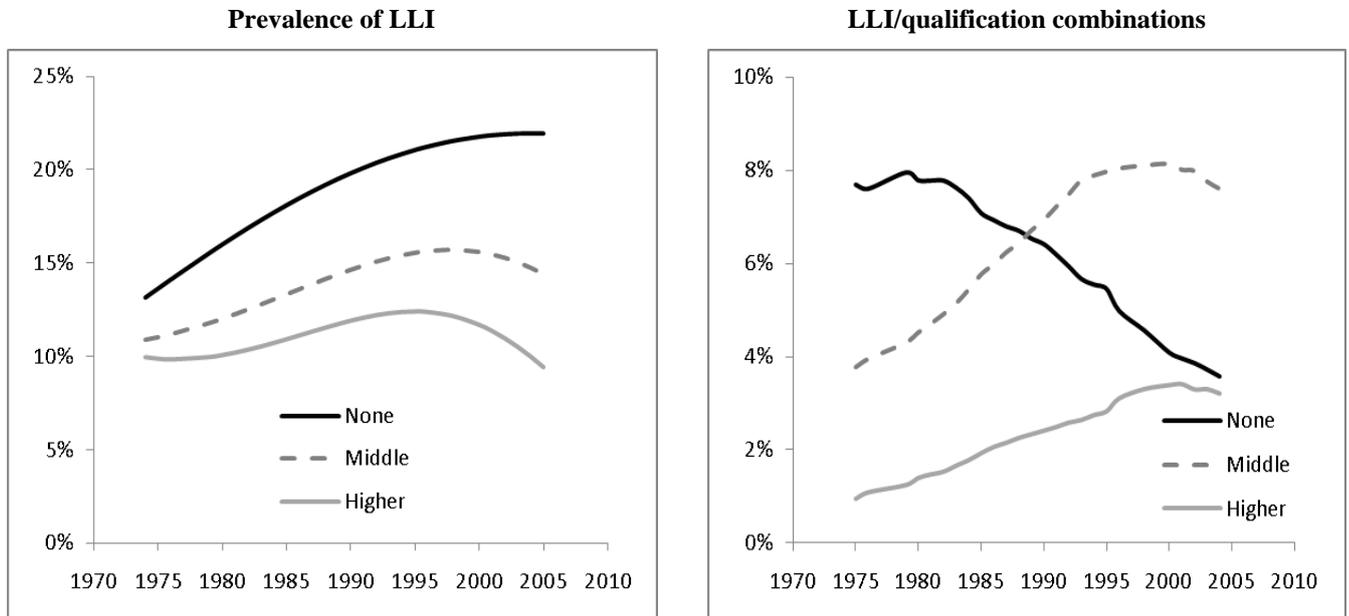
Note: Analysis by age shows predicted probabilities derived from a cubic logistic regression equation similar to the one shown on the right of Figure D. Analysis by family position is based on a similar cubic equation, also controlling for age-squared. The predicted probabilities are for individuals aged 40. ‘Women’ means women without children. ‘Men’ means all men, except lone fathers. ‘Parents’ means all mothers, plus lone fathers

Disability is much more prevalent among less-educated than among well-educated adults (defined in terms of their qualifications). This is a feature of disability that clearly has to be taken into account in an analysis of labour market outcomes. The left-hand side of Figure H shows that the prevalence of disability among higher-educated people (mainly with degrees) has remained fairly steady, but the prevalence among those with no qualifications has risen from year to year. So the gap between high and low education groups widened substantially over the GHS period.

This might be interpreted to mean that much of the overall increase in the number of disabled people consists of under-qualified adults with poor employment prospects in any case. This is partly true, but the number of people with degrees has been rising fast, while the number with no qualifications has been falling. The right hand graph shows the combined outcome of these two trends, plotting the proportion of the entire population of adults (aged 20-59) who combine disability with each education category. In absolute terms, there has been a rise in the number of disabled graduates,

and a fall in the number of disabled people with the double disadvantage of a poor educational record.

Figure H LLI analysed by educational qualifications



Note: 'Middle' means any qualifications less than higher. The left hand graph shows the proportion of members of each qualification category who report LLI, controlling for age, and is exactly equivalent to the right hand side of Figure G. The right hand graph shows the proportion of all respondents who both report LLI and hold the relevant qualifications.

5. The impact of disability on employment chances

A general model of employment probabilities

Having established, within the limits of the data, how many disabled people there are, and how their numbers have varied over the three decades under review, it is now possible to turn to the main objective of this paper, analysing variations in the extent to which ill-health or impairment has been associated with being out of work.

The objective is to analyse the probability that a disabled person has a job, and to compare it with the probability that an otherwise similar non-disabled person would have a job. The concept of ‘incapacity’, discussed earlier, would imply that there are some (severely) disabled people who have a zero probability of employment, while other (mildly) disabled people are in exactly the same economic position as they would have been if in perfect health. In practice, there is a distribution of employment probabilities across the population of disabled people – probabilities which are associated with:

- the nature of their impairments,⁷
- other characteristics such as family status and educational qualifications;
- and, potentially, interactions between these two sets of variables.

The task on this occasion is to show how the influence of these three factors on disabled people’s prospects changed over the period. Table 1 provides an overview of the analytical approach. A logistic regression equation covering the last ten years of the GHS period analyses the probability of employment. Unsurprisingly, the probability depends on a wide range of characteristics, which can be summarised briefly as follows:

- Compared with men living with a partner, lone men and lone women have lower employment rates (though there is not much difference between men and women singletons). But women with a partner are less likely to have a job than singletons.
- Among lone men and women, and among women with a partner, the chances of having a job reduce if they have children - the younger their children, the lower their job chances. Men with partners are treated as though they had no children, as their employment rates were not sensitive to family responsibilities.

⁷ See the discussion of the medical and social models of disability on page 1. This analysis is neutral as to the underlying relationship, assuming that even the social model allows for people with different types and severities of impairment to experience greater or lesser degrees of discrimination.

Table 1 Basic logistic regression model of employment probabilities: pooled years 1996--2005

	Coef- ficient	z	Signif- icance
Family position			
Man with partner (base case)	0	na	
Lone man	-0.40	-8	***
Lone woman	-0.46	-11	***
Woman with partner	-1.32	-38	***
For each year of age of youngest child	0.12	50	***
If respondent has a working partner	1.13	21	***
Age			
For each 10 years of own age up to 45	0.02	1	
For each 10 years of own age after 45	-0.92	-36	***
Educational qualifications			
For each unit increase in educational qualifications	0.30	50	***
Ethnic group			
Caribbean man	-0.64	-33	***
Caribbean woman	0.34	-4	***
Indian	-0.37	4	***
Pakistani or Bangladeshi man	-0.59	-9	***
Pakistani or Bangladeshi woman	-1.67	-6	***
Other minority ethnic group	-0.63	-13	***
Labour market conditions			
For each % increase in the national annual unemployment rate (comparing years)	-0.06	-22	***
For each % increase in the regional unemployment rate (pooling years)	-0.04	-7	***
Disability			
If respondent has limiting long-standing illness	-1.51	-14	***
Constant	2.63	24	***
Sample size	89756		
Pseudo R ²	23%		

Note: Estimates of robust standard errors have taken account of possible relationships between covariates over time by treating each survey year as a cluster. Z is the ratio of the coefficient to its standard error. A coefficient is significant at the 95 per cent confidence level if z is 2 or more.

- Both men and women were more likely to have a job, if they had a working partner.
- Age had little effect on people's employment prospects, up to 45; but they declined steadily from 45 onwards
- Educational qualifications have been treated as a scale in which degrees and other higher education count + 2 points; A levels 1 point, O levels and GCSEs have a score of 0; lesser qualifications count -1; no qualification at all -2 points. As expected, the better qualified people were, the more likely they were to have a job. The achievement of qualifications has increased rapidly over recent generations, but the gradation in employment prospects between well- and poorly-qualified people has remained stable.
- Employment probabilities varied by ethnic group: Pakistanis and Bangladeshis (especially women) Caribbean men and members of various other minority ethnic groups were much less likely to have a job than their white counterparts; Caribbean women were more likely to have a job than similar white women.
- Average employment probabilities varied according to the labour market conditions observed over time (reflecting the trade cycle) and between areas, as measured by unemployment rates.
- Disabled people (defined by the limiting long-standing illness question) were less likely to be in employment than other men and women who were similar to them in all the other respects included in the analysis.

None of these findings is directly relevant to this enquiry, apart from the confirmation that disabled people are less likely to have a job than other people, even after taking account of other characteristics such as their age and educational background. The point of Table 1 is to show what other factors have been included in the analysis. From now on, we focus on the impact of disability.

Although the logistic regression coefficients provide the most exact estimate of the scale of employment disadvantage associated with disability and other characteristics, it is difficult to interpret their meaning in terms of their overall effect. To assist interpretation, the 'disability employment penalty' has been calculated as the difference between the actual proportion of disabled people in work, and what the proportion would have been if those same people were not disabled, but all their other characteristics (gender, education and so on) remained the same. So the actual outcome for disabled people is compared with the hypothetical situation in which their disadvantage was switched off. For the straightforward model covering the last ten years of the period under analysis:

80 per cent of non-disabled people in the age range covered were in work, averaged over the ten year period 1996-2005.
76 per cent of disabled people would have been in work if their disability had no effect
48 per cent of disabled people were actually in work.

So

4 per cent (80-76) is a measure of how much disabled people were disadvantaged by their other observed characteristics (such as age and education)
28 per cent (76-48) is the true disability penalty.⁸

Note that because the LLI definition is probably too broad (including many adults with only slight impairments), this is probably a smaller penalty than would be observed if a tight definition of disability were used, restricted to people with more serious impairments. Note too that the estimate of 28 per cent is the average effect of a range of conditions, impairments and severities, all bundled into a single category labelled 'limiting long-standing illness'. Previous analysis of a much more detailed disability survey has shown that the penalties affecting different types of disabled people range from 0 to 100 per cent, and helps to show that they are not all facing the same experience.⁹ This point will be addressed again in Section 7.

Trends

The main outcome of interest to this research is the extent of disadvantage associated with disability. By applying this general model consistently to the analysis of year by year changes in employment prospects, it will be possible to show what changes have affected disabled people, after taking account of any changes that might have affected other groups – such as the well-known increase in employment rates among women with children. Models very similar to the one summarised in Table 1 will be repeated in many of the following tables and graphs – but in general only the results relating to disability will be reported. The models will always control for family position, age, educational qualifications, ethnic group and labour market conditions, but the results for these other characteristics will not be reported unless it can be shown that the

⁸ The disability penalty as calculated may also include the influence of other differences between disabled and non-disabled people which are not observed in the data.

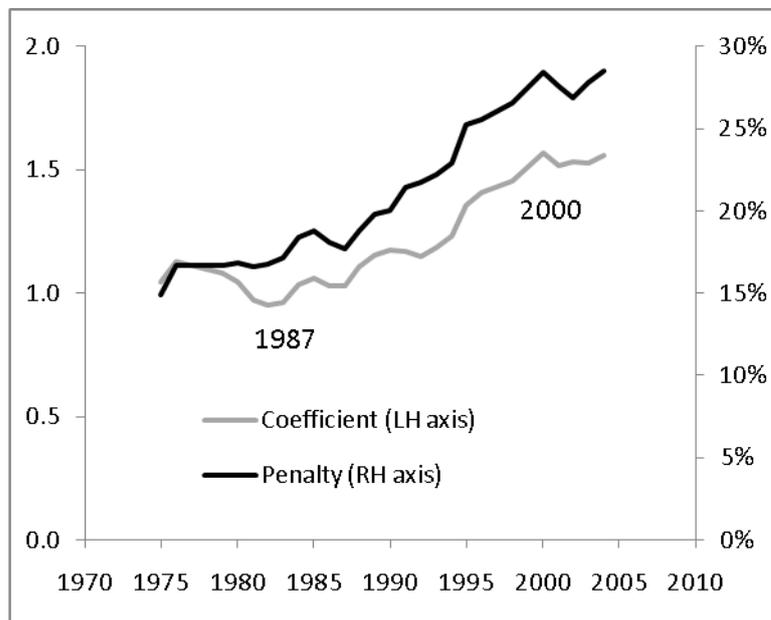
⁹ A detailed analysis of variations in disabled people's employment rates by condition, type of impairment and severity is provided in R. Berthoud, 'Disability employment penalties in Britain', *Work, Employment and Society*, vol 22 no 1, 2008

impact of disability varied between men and women, by educational qualifications and so on.

This has been done mainly by repeating the general model reported in Table 1 for each year of GHS data, and plotting trends (using three-observation moving averages) in the coefficients and disability penalties.

The grey line in Figure I shows that the disability coefficient was as low as 1.0 up to 1987; then rose consistently to 2000; and steadied again at about 1.5. The disability employment penalty (black line) followed a very similar track, rising from 17 percentage points to about 28 percentage points in 2000, and then held steady.¹⁰ Although the position of disabled people worsened over the years, the apparent changes in trend at 1987 and 2000 do not coincide with changes in other trends shown in previous graphs.

Figure I LLI regression coefficient and employment penalties, 1975-2004



Note: negative coefficients plotted as positive for ease of presentation. Three-observation moving averages.

¹⁰ Official figures based on the Labour Force Survey (for example those quoted by the Office for Disability Issues) suggest a decrease in the employment disadvantage of disabled people over the 2000s. However this may have been caused by an increase in the reported prevalence of disability in the LFS over the period – if the extra people saying they are disabled are not very disadvantaged, that would cause an apparent reduction of the overall level of disability disadvantage.

Relationship with the labour market

To the extent that people with certain types and severity of impairment were incapable of any kind of work, or unable to persuade any employer to hire them, then they would be equally disadvantaged, whatever the economic conditions at the time or in the place where they lived. But for the majority of disabled people, who experience intermediate conditions, impairment would place them on the margins of the labour force, and their prospects might be quite sensitive to variations in the demand for labour, as indicated, for example, by the unemployment rate. Variations in demand can be thought of as having two components: variations over time, especially over the trade cycle; and variations between regions. These are operationalised in the analysis by calculating the unemployment rate each year (averaged across regions) and the unemployment rate in each region (averaged across years.)

Considering the time element first, the pattern of change over time was for ILO-defined unemployment rates to vary over the trade cycle in an M-shaped pattern, with low rates of 3 or 4 per cent at the beginning and end of the sequence, big peaks at just over 10 per cent in the recessions of 1983 and 1993, and an intervening trough at 5.7 per cent in 1989. A first indication of disabled people's experience of these fluctuations can be seen in Figure I (above), where the trend in disability employment penalties was flat at the beginning and end, with a steady rise during the bust and boom years. There is no sign of an M-shaped pattern mirroring the unemployment cycle.

This interpretation is reinforced analytically with direct measures of the effects of variations over time on the outcomes for disabled members of the sample. Table 2 reports, on the left, the logistic regression coefficients from the general model of employment already discussed in Table 1, with unemployment rates and disability treated as having effects on job chances entirely independent of each other. Thus the coefficient for variations over time simply states that people in general are less likely to have a job during years with high unemployment rates – an almost tautological result. But on the right hand side an interaction term allows for the possibility that weak labour demand would have more or less of an effect on disabled people than on non-disabled people. It turns out to have less of an effect: the interaction coefficient for the effect of annual unemployment rates is positive, showing that the negative

effect for everyone else is much reduced among disabled people. Their job chances are hardly affected by cyclical variations. This is an important finding, not only in its own right, but also because many discussions of the growth in incapacity benefit claims attribute the blame to the industrial crisis of the early 1980s. The GHS evidence does not support that hypothesis.

The initial conclusion that disabled people's employment is not very sensitive to variation in labour demand is reversed, though, when we consider differences between regions. For the population as a whole (without interactions) regional unemployment makes less difference to job chances than cyclical unemployment does. This is even more true when the model with interactions is examined – non-disabled people are hardly affected by the regional economy. But disabled people are seriously affected by long-term regional variations. Almost the whole of regional disadvantage is experienced by disabled people. The fact that the disadvantage directly associated with disability (last line of the table) is much lower in the version of the model with than the one without interactions suggests that disabled people in high demand regions are not as disadvantaged as the initial analysis indicated.

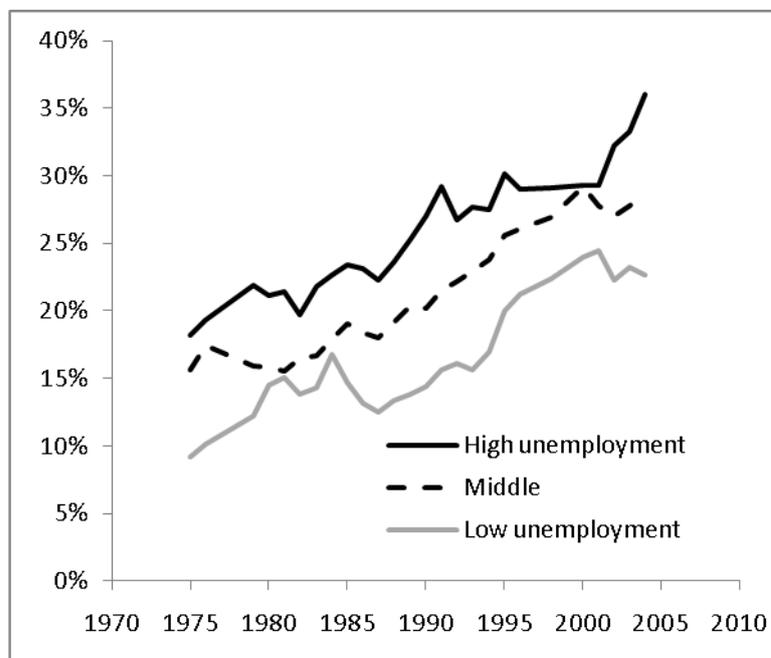
Table 2 Effects of annual and regional unemployment rates on the employment probabilities of disabled people - all years pooled

		Without interactions		With interactions	
		Coeff	z	Coeff	Z
Unemployment between years					
	All	-0.062	-35	-0.073	-37
	If disabled			0.053	12
Unemployment between regions					
	All	-0.035	-11	-0.013	-3
	If disabled			-0.111	-13
	If disabled	-1.233	-105	-0.850	-13

Note: 1. The coefficients for unemployment represent the effect of an increase in the unemployment rate of 1 percentage point. The overall effect of unemployment on disabled people in the model with interactions is the sum of the main coefficient and the interaction term.

Figure J suggests that this relative disadvantage of disabled people in less prosperous regions has been true throughout the period for which the data are available. Disabled people fared worst in Scotland and the North East, and best in the Eastern and South Eastern regions in the mid-1970s. The disability penalty widened steadily in all areas over the following thirty years, but the relative position of regions of high and low labour demand remained more or less constant. There is some sign that the stabilisation of the disability penalty after about 2000 was confined to the low and middle unemployment regions, while the adverse trend continued for those in the regions already worst affected.

Figure J Trends in the disability employment penalty in regions, analysed by long-term level of regional unemployment



Note: High unemployment regions are the North East (9.7%) and Scotland (8.0%). Low unemployment regions are Eastern (4.2%) and South East (4.9%)

It is not easy to understand why disabled people should be so sensitive to variations in labour demand between regions, but insensitive to variations over the trade cycle. Part of the explanation may be that being disabled, and being out of work on grounds of incapacity, are both long-term states, responding to stable labour market conditions rather than to fluctuations in demand.

It has been said (at least in relation to the 1980s) that there might be ‘ratchet effect’ – disabled people moving out of work when the economy turns down but finding it hard to return to work when the economy improves. But an analysis which allowed the effects of national unemployment rates to vary according to whether they were rising or falling did not support this hypothesis.

Demographic variations

Section 4 showed that some types of people (defined by age, family position and educational qualifications) are more likely to be disabled (reporting LLI) than others; and that these differences between groups varied over the three decades under consideration.

Given that they are disabled, the next question is whether disabled people with different characteristics have become more or less likely to have jobs. Figures K to M plot trends in the disability employment penalty by age, family position and educational qualifications. It is important to be clear that the disability penalty has been calculated separately for each age (family, education) group independently, so that the job prospects of disabled people of a particular age are being compared with the prospects of non-disabled people of the same age (family structure, education). So the disadvantage associated with being disabled in one’s late 50s (for example) is *in addition to* the underlying disadvantage of being in one’s late 50s.

Figure K shows the trends for three selected age-groups, representing the youngest and oldest members of the sample, and a middle group. Over the period as a whole, the oldest group, aged 55-59, were always more disadvantaged by disability than the youngest group, aged 20-24. All three age groups illustrated faced an increase in disadvantage if they were disabled, as time moved on. But the detailed pattern of trends varied:

- For the small number of people already disabled in their early 20s, the employment penalty rose most between 1984 (8 per cent) and 2000 (23 per cent).
- For the middle age group, the penalty rose more steeply, but with a slightly different timing, from 1987 (14 per cent) to 1998 (29 per cent)
- For the oldest group, the main rise occurred over a short period between 1981 (23 per cent) and 1984 (30 per cent).

Figure K Trends in the disability employment penalty by age: three age-bands compared

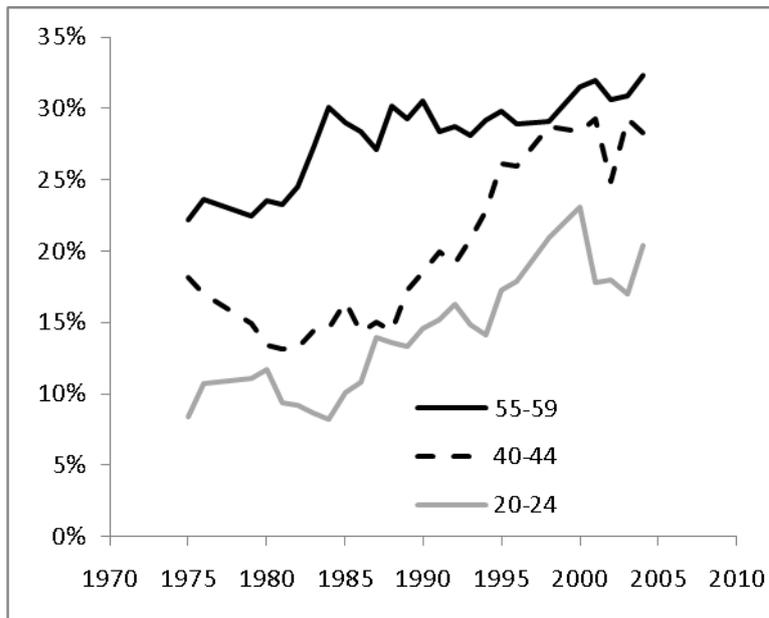
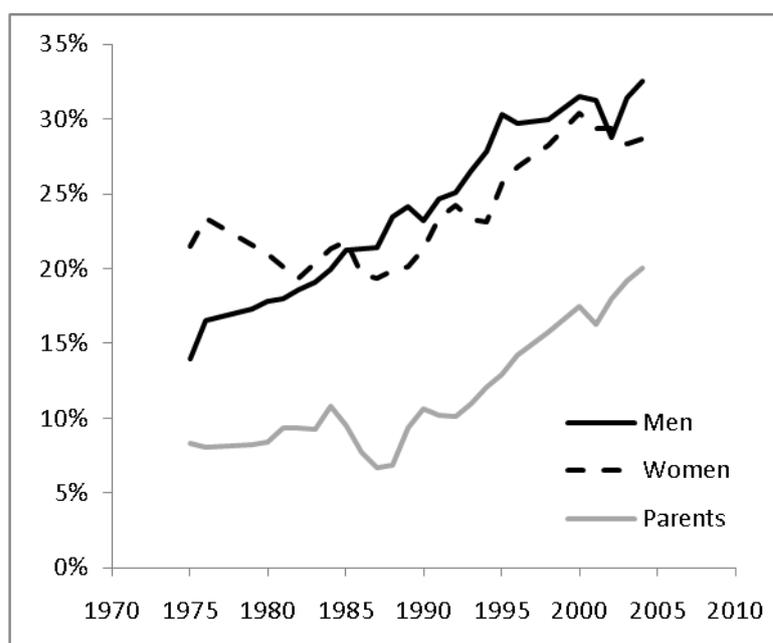


Figure L provides a similar comparison of trends in the employment penalties faced by disabled men, women and parents. As before, ‘parents’ are defined as all women with dependent children, plus lone fathers. Parents’ employment prospects were much less affected by disability than non-parents’, arguably because they were much less likely to have a job in the first place. Over the period as a whole, men and women (without children) faced very similar disability penalties. But there was a clear difference in the phasing of the trends. For disabled men, the employment penalty increased very steadily, year on year, from 14 percentage points in 1975 to 33 percentage points in 2004. For women and for parents (most of whom are women), there was if anything a slight fall in the disability penalty up to 1986 or 1987, followed by a steady rise since then.

Figure L Trends in the disability penalty by family structure



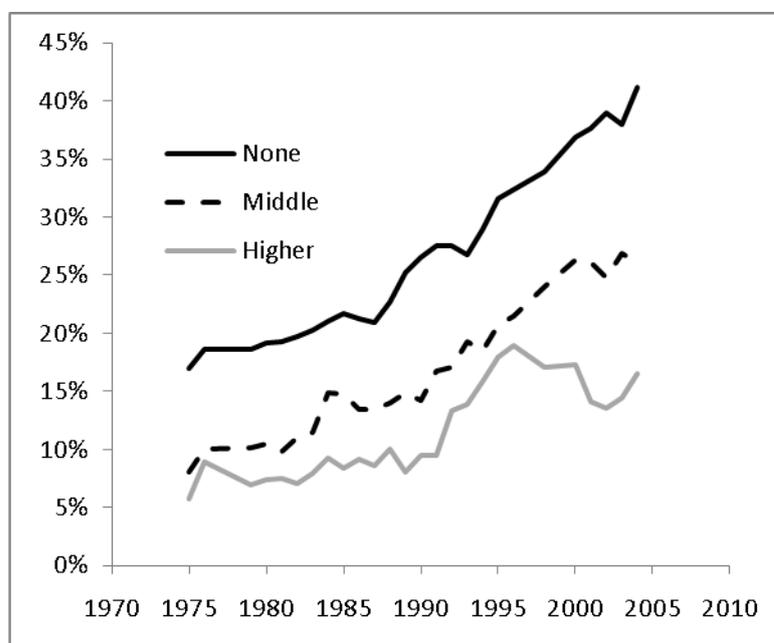
Finally the trends for disabled people with varying educational qualifications are shown in Figure M.

- Disabled people with higher educational qualifications (mostly degrees) are not much disadvantaged compared with non-disabled people with similar education. Nor has there been a steady increase in their penalty. But it leapt from 10 per cent in 1989, to 19 per cent in 1996.
- For people with some qualifications (below degree level), there was a fairly steady increase in the disability penalty from 6 per cent in 1975 to 27 per cent in 2003.
- For those reporting no qualifications, the disability penalty has been permanently more serious than that affecting disabled people with any qualifications. But it also rose steeply – from 17 percentage points in 1975 to 41 percentage points in 2004.

These findings point very clearly to the employment problems faced by disabled men and women with limited educational achievements. As educational provision has expanded, the number of people with no qualifications has been declining. It has already been shown (Figure H) that the relatively few remaining individuals without qualifications have a high and increasing risk of being disabled. It is now shown that disabled people with no qualifications have a low and decreasing chance of having a job. Remember that the disability employment penalties plotted in Figure M are

calculated *in addition to* the employment disadvantage already faced by non-disabled people without qualifications.

Figure M Trends in the disability penalty by educational qualifications



This important conclusion can be illustrated by following one group as they were repeatedly sampled and interviewed for the GHS. The ‘post-war cohort’ of people born between 1945 and 1954 were aged between 20 and 29 when the GHS series started in 1974. By 2005, the last GHS year in our sequence, the same group of people had reached the ages of 51-60. Although it was a different set of individuals interviewed each time, it is possible to show what happened to the group as a whole. (This approach to analysing a sequence of separate samples of the same group defined by date of birth¹¹ is known as a ‘quasi cohort’.) The analysis shows the combined effects a) of increasing age, and b) of trends over time.

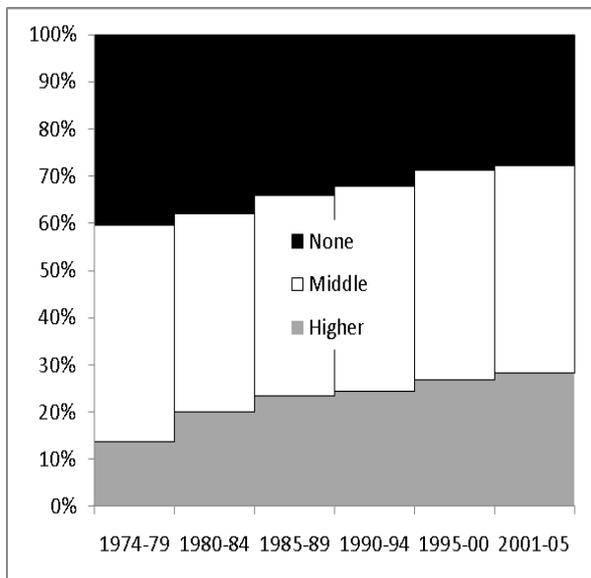
The top left panel of Figure N shows the distribution of educational qualifications within the postwar cohort. In the late 1970s, when the group were largely in their twenties, 41 per cent of them said they had no qualifications, and 14 per cent had qualifications higher than A levels. Although we tend to think of education as being achieved largely in the teenage years or early twenties, members of the cohort were

¹¹ Year of birth is estimated for this purpose as ‘survey year’ minus ‘age’, and will not provide an exact match with actual years of birth.

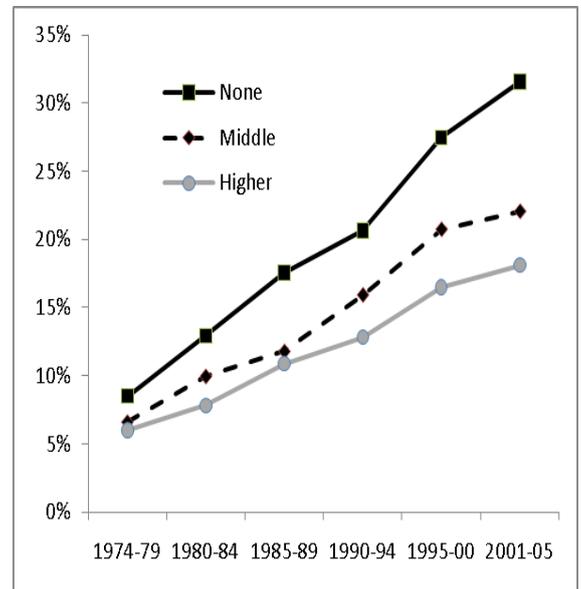
reporting a rather better profile of qualifications by the early 2000s, when they were largely in their fifties; the proportion with no certificates was down to 28 per cent and the proportion with higher qualifications was up to 28 per cent. This pattern of acquiring qualifications in adult life means that although the cohort as a whole remains a sample of the same underlying group, the sub-groups defined by educational level change over time.

Figure N Following the experience of the post war cohort (born 1945-1954), by education

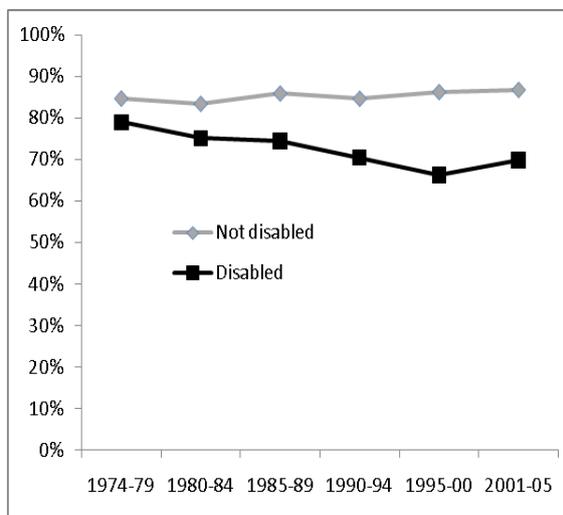
Slow increase in qualifications over the life course



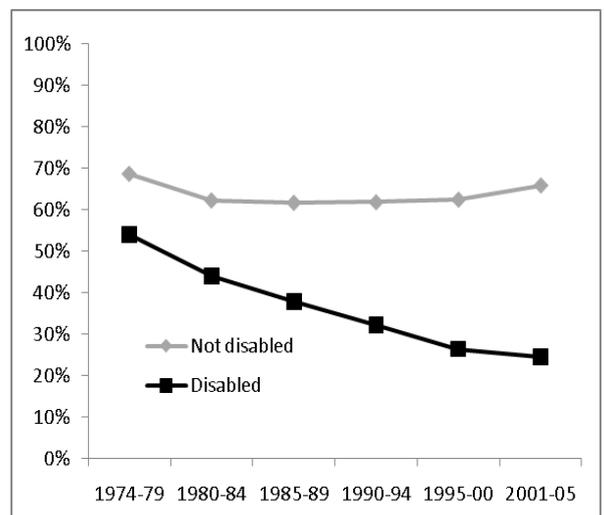
Increasing prevalence of disability, with age/time



Employment rates of people with higher qualifications



Employment rates of people with no qualifications



The top right panel of Figure N shows the increase in prevalence of disability (LLI) over the years. This is the combined effect of ageing (the main influence) and the secular trend towards increasing disability rates (the secondary influence). When the cohort consisted of young men and women, only 8 per cent of those with no qualifications, and 6 per cent of those with high qualifications, reported limiting long-standing illness. This shows that few members even of the unqualified group were disabled from the start. The prevalence of disability trended upwards, at every educational level. But the unqualified outstripped the well-qualified, so that by the time they were approaching retirement age the prevalence rates were 32 per cent and 18 per cent respectively.

The bottom pair of panels of Figure N then compare the employment rates of the well and poorly qualified members of the cohort. These are simply-calculated percentages of each group who were in work at each stage, not complex calculations of 'penalties'. For non-disabled people (comparing the grey lines in the left and right hand panels), men and women with no qualifications were persistently less likely to have a job than those with higher qualifications. The employment gap between high and low qualifications was typically about 20 percentage points, with both groups following a parallel and fairly flat trend over the period. The striking point, though, is the experience of disabled people (black lines). For highly qualified members of the cohort, disability made little difference to employment rates, until a gap opened up between the early and late 1990s. For unqualified members of the cohort, disabled people were slightly worse off at the start of the period, but their position deteriorated steadily. It seems clear that it was their disability, not their lack of qualifications on its own, that caused the problem.

6. Counting the number of people prevented from working by disability

The number of people disadvantaged by disability can be thought of as the product of two factors: the proportion of the population (in the relevant age range) who are disabled; and the extent of the disability employment penalty. So, at the start of the period covered by this analysis (GHS years 1974-76) 13.6 percent of 20-59 year olds reported limiting long-standing illness, and the employment penalty associated with LLI was 14.6 percentage points. It can be concluded that 2.0 per cent of people in the age range were disadvantaged by their impairments.¹² At the end of the period (GHS years 2003-2005), the LLI rate had risen and then fallen, to 15.6 per cent, and the employment penalty had risen to 30.8 percentage points. The overall level of disadvantage had increased to 4.8 per cent. Over the period as a whole, the trend in the penalty mattered more than fluctuations in prevalence.

Figure O: Comparing the rise in prevalence of disability (LLI) with the increase in the disability employment penalty

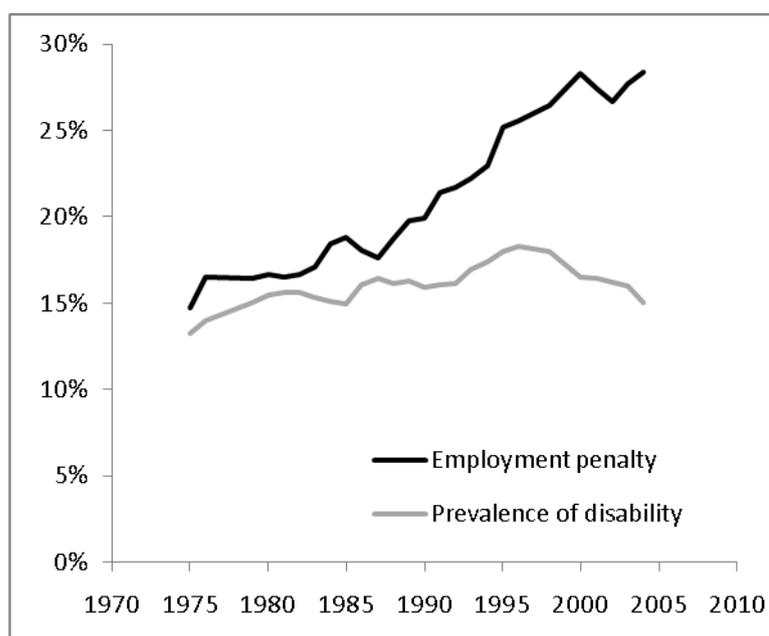


Figure O, which combines information previously shown in Figures D and I, shows that the increase in the two components followed roughly parallel trends up to the mid

¹² ie 13.6% * 14.6%

1990s; but from then onwards the prevalence of limiting long-term illness declined slightly, while the penalty associated with LLI increased more rapidly.

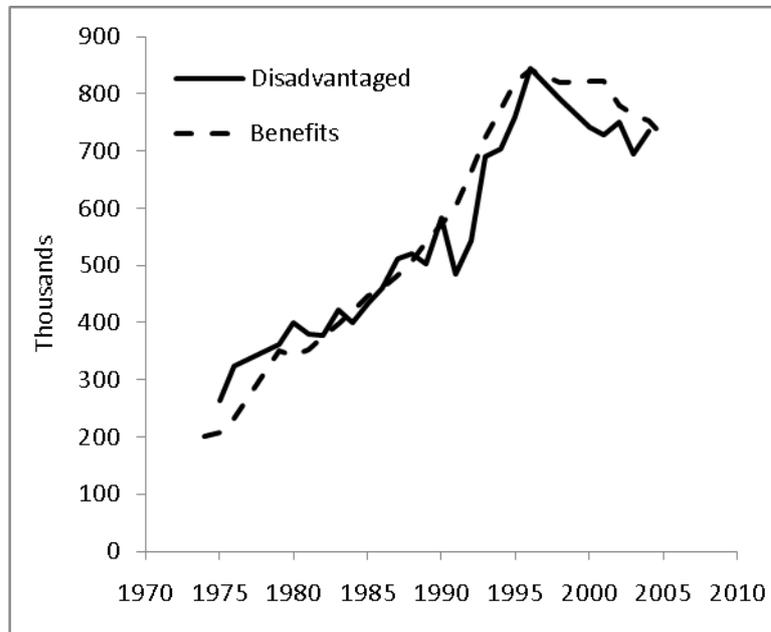
It was suggested (page 10) that the question sequence on limiting long-standing illness probably identified a larger proportion of people as ‘disabled’ than a stricter set of questions would have done. But if the prevalence of disability is over-estimated by the GHS, it is likely that the severity of the employment penalty has been underestimated. The overall extent of disadvantage (estimated to have risen from 2.0 per cent to 4.8 per cent over the period) will not be especially sensitive to this measurement issue, because any artificial reduction in the prevalence estimate will roughly be balanced by an artificial increase in the estimate of the penalty.

If the combination of prevalence and penalty is applied to the number of people (in the age range) in the population as a whole, the GHS provides an estimate of the number of men and women who are out of work because of their impairments – that is the number who would have been in work if they had had no impairment. It is important to understand that this statistical estimate of the number of disadvantaged disabled people does not necessarily identify which particular individuals did not have a job because they were disabled, and which other disabled individuals would have been out of work in any case (even if not disabled), because of lack of qualifications, ethnic disadvantage, regional unemployment, motherhood and so on. In contrast, the administrators of social security benefits (Invalidity Benefit up to 1996, Incapacity Benefit from 1996 to 2008, Employment and Support Allowance from 2008) are expected make judgements about incapacity for work in individual cases. We would not expect an exact match between the survey estimates of disadvantage and the administrative decisions about incapacity – but a comparison of the trends in both sets of statistics may nevertheless be of value.

Figure P plots the numbers of disabled men who were disadvantaged in employment, according to two measures: the number of disabled men who lacked a job *because they were disabled* (the disability penalty); and the number of men receiving incapacity benefits (as illustrated in Figure C, except that this time the figures are confined to men below the age of 60). Both measures show a steady upwards trend from the 1970s through to about 1995; and a flattening or decline over the most

recent period. The exact dates of changes in the trend vary between the two measures, but they are roughly in parallel.

Figure P Numbers of disabled men disadvantaged in employment: GHS estimates compared with benefits in payment

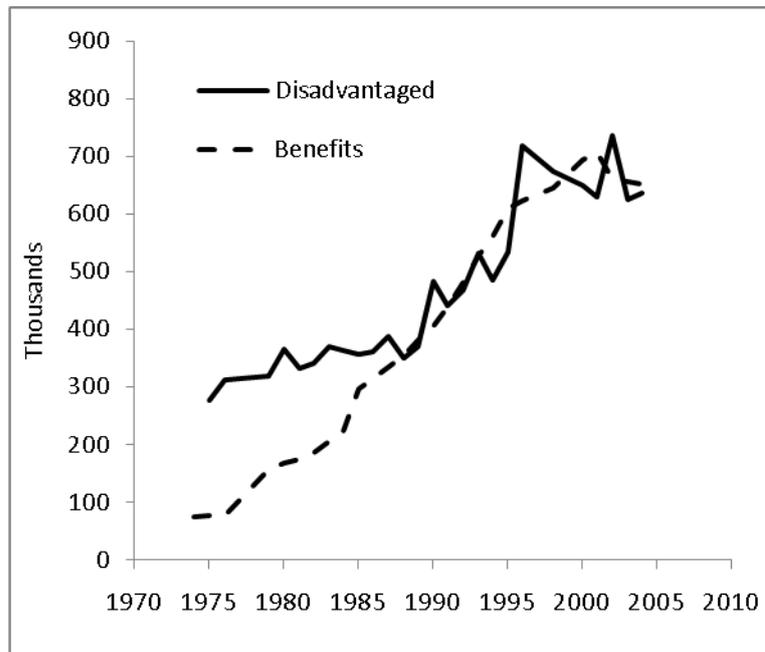


Note: benefits in payment include Incapacity Benefit (excluding the short term lower rate), and Severe Disability Allowance. Credits only cases are not counted. Equivalent definitions apply for the years before 1996. All figures refer to people aged 20-59

A feature of Figure P is that while the survey data confirm that the number of disadvantaged disabled men increased over the period to the mid 1990s, the number claiming benefit increased a bit more rapidly; and while the survey data show a decline in the problem since then, the numbers on benefit only flattened off.

Figure Q provides an equivalent analysis of disabled women. The scale of the graph is identical to the men's version. More women were affected by the disability employment penalty than were claiming incapacity benefits at the start of the period; but the increase in benefit claims over the 1980s outstripped the growth in employment disadvantage – probably because more women were in employment and so were able to claim national insurance benefits if they became disabled and had to stop work. Since about 1990 the two estimates of women's disability disadvantage rose in harmony.

Figure Q Numbers of disabled women disadvantaged in employment: GHS estimates compared with benefits in payment



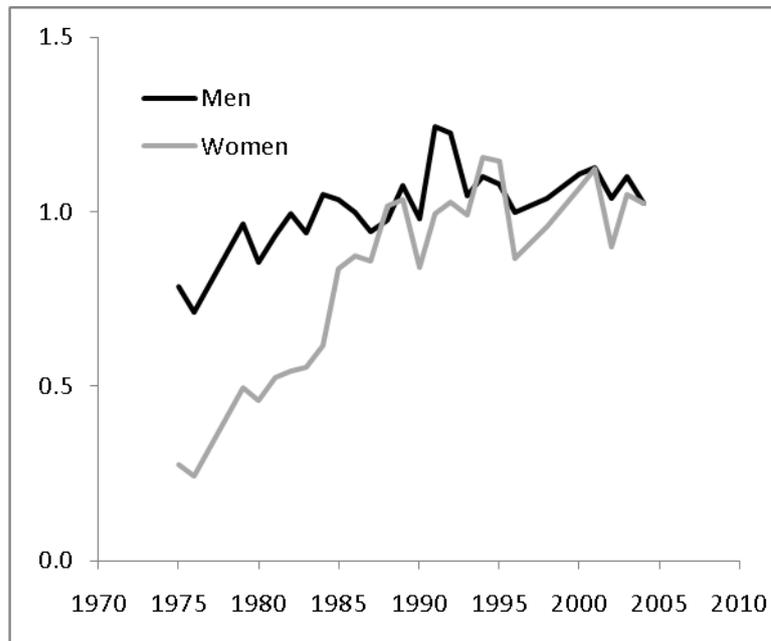
See note to Figure P

These trends are summarised in Figure R, which shows the changing ratio of benefit payments to employment disadvantage. We would not necessarily expect this ratio to be 1.0, because:

- some people who would have been out of work in any case might nevertheless legitimately claim incapacity benefits on the grounds of their impairments;
- some people, unable to work because of their impairments, might nevertheless not be entitled to claim benefits, because they did not have an appropriate national insurance record (IB).

These two considerations, in combination, might result in an overall ratio higher, or lower, than 1.0 per cent. The striking point is the rise in the ratio of benefit claims to employment disadvantage over the 15 years to about 1990, from 0.3 to 1.0 in the case of women, and from 0.7 to 1.0 (again) in the case of men. After 1990, the trends for both men and women were essentially flat. There is no sign that the double reforms (IB and the DDA) of the mid-1990s made any difference to this trend.

Figure R: Number of men and women receiving incapacity benefits, expressed as a ratio to the GHS estimates of employment disadvantage



See notes to Figure P

It should be noted that Figures P, Q and R are based on counts of the number of people actually receiving IB and SDA payments. As discussed above (page 7) there is a third group of claimants who are get ‘credits only’, and may be receiving disability premiums to their income support payments. It is not clear who these people are, and whether they should be counted as incapacity claimants, but it was clear (Figure C) that the number of such cases increased more rapidly than full benefit payments in the 1990s and continued to rise after the downturn in the number of IB and SDA benefits in payment. If these cases were included in the counts, it would appear that there are now more people on the benefit rolls than are estimated (from the GHS) to experience a disability penalty.

7. Taking account of health conditions

Condition codes in the GHS

All of the analysis in sections 4 to 6 has been based on treating people reporting ‘limiting long-standing illness’ as disabled – because that is the only definition available in the complete 30-year sequence of data being analysed. This is not an ideal approach, because LLI almost certainly includes a number of people whose impairments are such as to have no real effect on their employment prospects, and because it is not possible to dig down to reveal variations between disabled people who are more or less disadvantaged.

As reported in Section 3, the GHS did have a question in most years, asking about the health conditions that gave rise to LLI. In the context of disability, it would probably have been more helpful to have reports of impairments than of conditions.

(Impairment refers to the physical or mental activities that the disabled person cannot do eg walking, seeing, thinking etc. Although some types of condition are clearly associated with some types of impairment, it is not possible to map them precisely - inability to walk might be caused by musculoskeletal problems, or heart problems, or lung problems, or diseases of the nervous system.)¹³ It is also important to understand that the report of a condition cannot be interpreted directly as an indicator of the severity of impairments – for example the consequences of ‘back problems’ range from difficulty in sitting still for long periods, to paraplegia.

Nevertheless, as shown below, taking account of reported conditions effectively helps to explain variations in disabled people’s employment prospects.

For many GHS years the answers to the conditions question were not coded, but it has been possible to assemble data for 16 years, highlighted in bold in the following list:

¹³ See note 9.

1974 -1975	Coded to three digit codes of the International Classification of Diseases (ICD) version 6
1976 - 1977	No coding
1977 - 1978	Standard LLI question not asked. Direct questions on ill-health pre-coded to a list designed to reflect the most common types of condition
1979 - 1987	No coding
1988 - 1989	Coded to 40 categories intended to reflect ICD code groups
1990 - 1993	No coding
1994 - 2005	Coded to 40 categories, as in 1988 – 1989

Detailed analysis suggests that the 1977 and 1978 questions and answers were not comparable with the questions and codes for other years, and those years are not covered at all in this paper. But it has been possible to convert most of the 1974 and 1975 detailed codes into groups which match the 40 categories used in 1988, 1989 and 1994-2005. We have collapsed these 40 categories to 19 groups to reflect the most common conditions, as recorded in Appendix Table A1. There are some inconsistencies between the prevalence of certain condition groups recorded in 1974 and 1975 (using detailed ICD codes) and those recorded after 1988 (using the 40 categories). These suggest that the two coding schemes are not precisely comparable, and one would not want to place too much weight on exact comparisons between specific types of condition. Nevertheless, it is worth pursuing the detailed data to investigate the possibilities a) that some conditions and types of impairment are associated with greater employment disadvantage than others, and b) that people with several conditions or types of impairment are more disadvantaged than those with only one few, and c) that these relationships may have changed over the years.

Using conditions to predict outcomes

A second logistic regression equation, pooling all the 16 years for which condition codes are available, looked for variations in employment probabilities between people reporting each of the 19 conditions. It also distinguished between conditions reported by people who said their ill health limited their activities and those who reported no

limitation.¹⁴ So there were 38 condition categories altogether. Many of the conditions were shown to have very similar employment outcomes to each other; it was also shown that the effects of such conditions were cumulative, so that they could be summarised in terms of the number of conditions reported. After experimenting with various combinations of variables the formula presented in Table 3 was the most efficient (ie produced the most accurate predictions of employment probabilities with the smallest number of explanatory variables). According to this analysis:

- Employment probabilities are reduced if someone reports a limiting long-standing illness
- The more conditions reported by someone with limiting illness, the greater the employment disadvantage
- Employment probabilities are reduced further for people with ‘other’ conditions of the circulatory system (and who also report limited activities).
- Four types of conditions are associated with further disadvantage, even if respondents did not report limited activities: mental illness, ‘other’ conditions of the nervous system, cancer and arthritis

Table 3 Logistic regression model using health conditions to predict employment probabilities: pooled years for which conditions were coded

	Coefficient	z	Significance
If limiting long-standing illness	-0.66	-14	***
Number of conditions (if LLI)	-0.30	-11	***
‘Other’ conditions of the circulatory system (if LLI)	-0.54	-10	***
Mental illness (whether LLI or not)	-1.32	-30	***
‘Other’ conditions of the nervous system (whether LLI or not)	-0.59	-18	***
Cancer (whether LLI or not)	-0.45	-6	***
Arthritis (whether LLI or not)	-0.29	-7	***

Pseudo $R^2 = 25.7\%$; $N = 170,691$.

Notes: See Appendix Table A1 for definitions of the 19 groups of conditions included in the analysis. Estimates of robust errors treat the survey year as a cluster. The regression equation also includes controls for family position, age, educational qualifications, ethnic group and labour market conditions (as in Table 1).

¹⁴ Respondents were asked if they had any illnesses or disabilities, then what the conditions were, and then whether their activities were limited in any way. Among people with several conditions, it is not possible to show which particular conditions had the effect of limiting activities.

The details of these relationships between condition and employment are of some interest in their own right – for example mental illness is among the most disadvantaging conditions, even if it is not associated with ‘limiting’ long-standing illness. But it is helpful to summarise the economic disadvantage associated with each person’s conditions in a single score. This has been done by summing the seven coefficients in each respondent’s record:

- 0.66 if LLI
- + 0.30 x the number of conditions if LLI
- + 0.54 if ‘other’ conditions of the circulatory system and LLI
- +1.32 if mental illness
- +0.56 if ‘other’ conditions of the nervous system
- +0.45 if cancer
- +0.29 if arthritis

If this ‘disability impact score’ is substituted into the logistic regression equation in place of the component LLI and condition variables, then by construction its coefficient is -1, and all the other details of the equations are unchanged. The score can be interpreted as the overall impact of disability on employment prospects (averaged over all the years for which condition codes are available). A more general interpretation is that it can be considered an indicator of the severity of the disadvantage associated with disability, using employment as the outcome measure to calibrate severity.

This scoring system based on the number and type of conditions enables us to distinguish between people reporting more and less severe sets of impairing conditions. The system will not be as precise as one based on direct measures of severity but nevertheless can be treated as a scale of impairment.

The distribution of disability impact scores has been divided into five categories, as recorded in Table 4. The group labelled ‘low’ consists of the large group of disabled people who reported one limiting condition, which was not one of the five high-impact conditions listed in Table 3. All of this group had a disability impact score of 0.96 (0.66+0.30). The group labelled ‘minimal’ scored even less than that – they reported at least one of the last three conditions listed in Table 3, but their activities were not limited. The scores of those with more than one limiting condition, or at least one limiting condition among the high-impact group, have been divided into

three roughly equal groups, labelled ‘moderate’, ‘high’ and ‘severe’. Each of these groups accounted for only about 3 per cent of the sample, but represents about 5,000 respondents across the 16 years for which conditions were recorded. The last two columns clearly illustrate how sensitive the probability of employment was to this grading: those with ‘minimal’ disability were almost as likely to have a job as those with none at all, but only 27 per cent of ‘severely’ disabled people were in work.

Table 4 Distribution and characteristics of severity grades derived from disability impact score

	Percent of total	Mean impact score	Percent in work	Logistic coefficient
None	81.5	0	77%	0
‘Minimal’	1.9	0.44	70%	-0.33
‘Low’	6.6	0.96	63%	-0.87
‘Moderate’	3.2	1.26	53%	-1.13
‘High’	3.5	1.57	43%	-1.67
‘Severe’	3.2	2.44	27%	-2.45
<hr/>				
‘Substantial’ (‘moderate’, ‘high’ and ‘severe’ combined)				
	10.0	1.76	41%	-1.64

Logistic regression coefficients derived from an equation the same as reported in Table 3, but with the sequence of grades substituted for the LLI and condition variables.

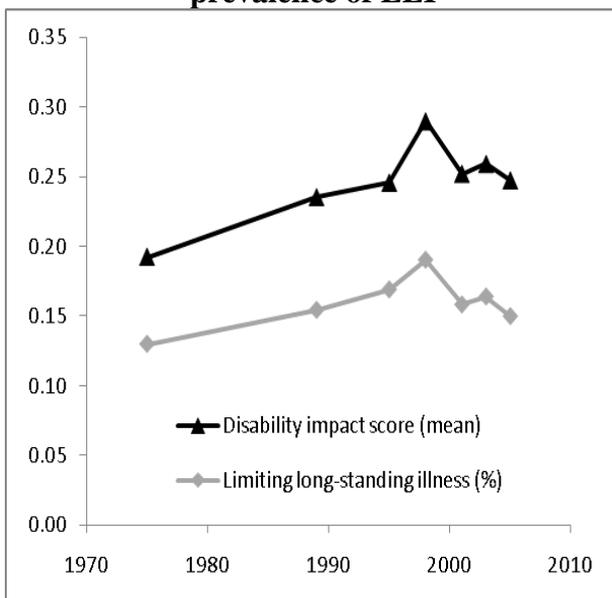
It will be helpful to analyse the three groups of disabled people whose impairments are at least moderate, as a single category. This group is shown at the foot of Table 4, labelled ‘substantial’. They account for 10 per cent of adults in the age range under consideration (compared with 16 per cent of those defined simply as LLI). Their average employment rate is 41 per cent (compared for 50 per cent of those defined as LLI). An employment penalty can also be calculated for the groups of people with ‘substantial’ disability – averaged over the 16 years with appropriate data, the group has an employment rate 31 per cent lower than it would have been if they had not been substantially disabled (compared with the LLI penalty of 22 percentage points).

Trends in 'severity'

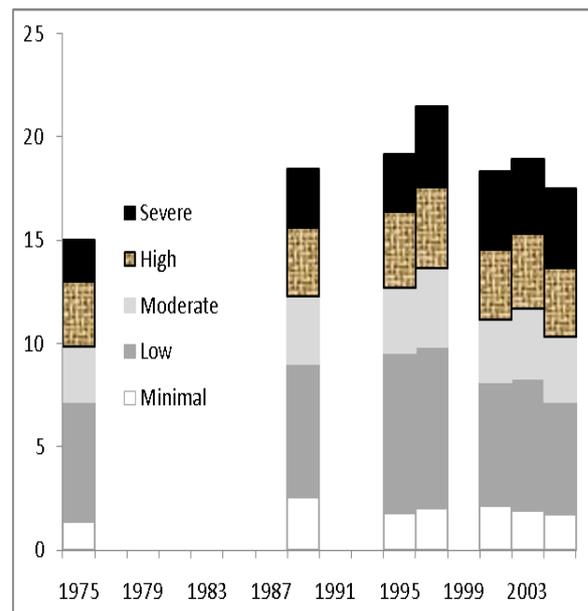
One test of the disability impact score derived in the previous section is that it should be consistent across the period, especially when comparing the two coding systems adopted in 1974/1975 and 1988/1989/1994-2005. Figure S plots, on the left, the prevalence of LLI and the average disability impact scores, for pairs of years 1974/75, 1988/89, 1994/95 and so on. It is clear that both measures of prevalence follow a similar pattern – both LLI (which is consistently asked and coded across GHS years) and the disability impact score. It can be concluded that comparisons of the impact score over time are reasonably consistent with trends in the overall measure of prevalence.

Figure S Disability impact scores over time – pairs of years for which condition codes are available

Comparison of average scores with prevalence of LLI



Distribution of scores



It is often suggested that trends in the prevalence of self-reported disability may be affected by employment conditions – people out of work tending to exaggerate, or people in work tending to understate, their impairments. If this self-justification bias was an important explanation of trends, one would expect it to be most relevant at the lower boundaries of the scale of impairment, rather than among those with severe conditions. The trends in the impact score tend not to support that hypothesis: as the right hand side of Figure S shows, the increase in the prevalence of severe and high

levels of impairment between the mid-1970s and the mid-1990s was just as important as that of low and minimal conditions. So the proportion of people reporting ‘substantial’ disability (the top three categories) rose from 8 per cent in 1974/75 to 12 per cent in 1996/98, before fading to 11 per cent in 2004/05.

Graded employment penalties

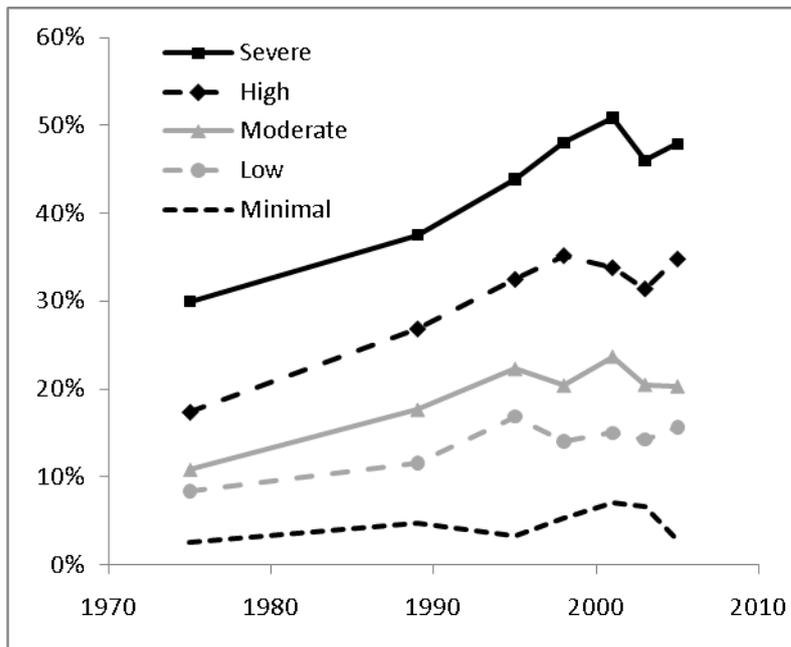
An employment penalty can be calculated for each of the five grades of the disability impact score, exactly equivalent to the penalty calculated for limiting long-standing illness in Section 5. For each pair of years for which condition coding is available, a logistic regression equation is used to predict whether or not each member of the sample had a job, based on their complete set of underlying characteristics (gender/family, age, education, ethnic group, regional unemployment rate), and their position in the disability gradient. The penalty associated with each grade (in each pair of years) is calculated as the average of the differences between each person’s actual chance of having a job, and what his or her chances would have been if he or she had not been disabled at all (ie his or her disability impact score had been zero). The outcome is a graded estimate of the penalty, from which it is clear that those allocated to the ‘severe’ category are much more disadvantaged than those allocated to the ‘minimal’ category. The key question is how these comparisons have changed over time.

Figure T plots these graded penalties over time. The ordering of the grades, from ‘severe’ to ‘minimal’, is a direct outcome of the definition of the grades. The important issue is how the penalties varied over the years. A general pattern across all grades is that penalties increased between the mid-1970s and the mid-1990s. After the mid-1990s, the penalties wobbled in detail, but there was no consistent upward or downward trend.

People whose conditions indicated ‘minimal’ disadvantage increased their penalty from 3 percentage points to 7 percentage points, before falling back again. People whose conditions signified ‘severe’ disadvantage increased their penalty from 30 percentage points to 51 percentage points, before falling back again. These parallel trends suggest that economic conditions moved against all disabled people between the mid-1970s and the more recent period (1995 to 2005). There is no sign that the

massive rise in the number of people reported to be ‘incapable’ of work consisted largely of those with minor conditions. On the contrary, the biggest increase in employment penalties affected the types of disabled people who were already heavily disadvantaged at the start of the period.

Figure T. Employment penalties by grade of disability impact score



8. Discussion

The increase in the number of men and women receiving incapacity related benefits between the mid 1970s and the mid 1990s is well known, and has been much discussed in political as well as in academic debate. Governments of all political colours have implemented (or are planning) a series of reforms, using both carrots and sticks, designed to reduce the number of these claimants, but the statistics have remained stubbornly high.

The administrative statistics measure the combined outcome of three sets of processes:

- the prevalence of disability;
- the effect of disability on employment rates;
- the number of non-working disabled people who are eligible for, and claim, earnings replacement benefits on grounds of ‘incapacity’.

Public debate has tended to be mesmerised by the benefit statistics, and has largely sought to explain the trends in terms of the impact of the social security system on the behaviour of disadvantaged people. Actually, the social security system itself was very stable during the period of rapid growth in claims. This paper has aimed to look at the trends from the opposite end, considering the impact of disability and disadvantage on the social security system. So, for the first time, the analysis shows how the prevalence of disability and the extent of the disability employment penalty have changed over the years. This leads to conclusions which both support the idea that the role of social security has changed, and also counteract the idea that the design of the system makes much difference.

Each of the three components of disability (listed above) has an area of uncertainty associated with its measurement. So for example, it is possible for people to overstate or underplay the extent of their impairments – either deliberately or sub-consciously. It is possible for people to exaggerate or deprecate the effect of impairment on their job chances. It is possible for people to claim benefits to which they are not really eligible, or fail to claim when they are genuinely entitled. This means that observed trends might be caused by changes in people’s attitudes to their situation, rather than by changes in the situation itself. Neither of the sources of data used in this paper (the

GHS and benefit statistics) allows us to observe the changing effect of attitudes. But the GHS data are at least partly independent of assumed changes in the behaviour of benefit claimants. First, the GHS questionnaire asks about limiting long-standing illness in a context quite distinct from labour market behaviour or benefit claims. Second, the estimate of the disability employment penalty is derived statistically from comparisons of people with and without jobs, rather than from people's own opinion of the effect of disability on their chances. Third, the majority of those reporting LLI were in work (not claiming benefit) and so had no fiscal motive for exaggerating their impairments. Fourth (as discussed again below) the trends in prevalence and in the disability penalty were observed more at the upper end of the scale of severity of disadvantage, rather than at the lower end (where subjective influences might have been expected to be relatively more powerful).

The GHS view is designed to show what has been happening in the real worlds of health and employment, potentially explaining what has been happening in the constructed world of the social security system.

Summarising the trends

Although it has often been assumed that the prevalence of disability must have been going down, the logic behind that assumption is very unclear. In practice the prevalence estimate (based on the LLI definition) rose gradually between the mid-1970s and the mid-1990s, before falling gradually over the following ten years. It is possible to interpret this as a steady rise followed by an abrupt reversal; or alternatively as a slowly evolving change in trend (Figure D).

The extent of employment disadvantage faced by disabled people – the employment penalty – followed a different pattern. It rose very slowly at first, increased rapidly between 1987 and 2000, and then steadied (Figure I).

Neither of these overarching trends can easily be explained by changes in the social security system. The latter was more or less constant for most of the period to the mid 1990s; changed sharply in 1996; and was then subject to a series of lesser reforms over the period to 2005. (The second major change, in 2008, falls outside the period for which data are available.) On the other hand the gap between falling prevalence

and rising disadvantage opened decisively in the mid-1990s, so that the end of the period was characterised by a relatively low rate of prevalence but a high level of disadvantage (Figure O).

Varying disadvantage

Popular and political commentary has tended to blame the rise in claims for incapacity related benefits on people with trivial health conditions either exaggerating their impairments, or exaggerating the effect of disability on their job prospects. No doubt both of these exaggerations occur on occasion (although the medical test for incapacity introduced in 1996, and its successor tests, were explicitly designed to counteract them), but we have no objective measure of the severity of impairments to compare with the subjective assessments made by either benefit claimants or survey respondents. Nevertheless, the reports of health conditions available in some years of the GHS series provide a helpful indirect measure of variation in the severity of disadvantage associated with various patterns of ill-health. This analysis confirms what one would have expected – that some sub-groups of disabled people are, and have always been, much more disadvantaged than the overall estimate of the disability penalty would imply. It also shows that most of the growth in the prevalence of limiting long-standing illness, and most of the rise in the disability employment penalty, has affected people at the more severe, rather than the less severe, end of the spectrum (Figures S and T). This suggests that the underlying trend is a true one, not simply associated with people's reports of, or responses to, trivial conditions.

Although the limited set of GHS questions about health conditions provides a far from complete account of variations in the nature and severity of people's impairments, it provides an essential reminder that it does not make sense to think of 'disabled people' as a single group with common labour market prospects summarised by a single employment rate. A small number are unaffected by their impairments. A small number have virtually no chance of working. A large number face reduced expectations, but still have a 50:50 chance of working, depending no doubt on personal circumstances and individual trajectories. This sliding scale of disadvantage contrasts with the dominant political rhetoric which assumes that people can be divided into two distinct groups: those who are simply unable to work (employment

rate = 0); and those who are as able to work as everyone else (employment penalty = 0). Note for example the term “incapacity” to label the benefit introduced by the Conservative government in 1996; the mantra “work for those who can, security for those who cannot” enunciated by the Labour government in 1998 ; and the attack on people who see benefits as a “lifestyle” by the coalition government in 2010. The new finding of the current research is that most of the trends in the prevalence and outcomes of disability over the 30 year period were broadly shared across the spectrum of disabled people, rather than affecting those at one end or other of the scale of disadvantage.

It is worth adding that the development of policy has not been quite as naïve as the political rhetoric might have led us to expect. The Employment and Support Allowance introduced in 2008, for example, aims to divide potential claimants into three groups – not two.

- The “support” group whose illness or disability is judged to have a severe effect on their ability to work. They are not expected to take part in any work-related activity, but can do so on a voluntary basis if they want to and can ask for help. They receive about £31 per week in addition to their basic benefit.
- The “work related activity” group, who are recognised to have some impairment, but are expected to take part in work-focused interviews with a personal adviser, and accept support to help them prepare for suitable work. They receive about £26 per week in addition to their basic benefit – as long as they continue to meet the activity conditions.
- Those who are judged not to have impairments serious enough to affect their employment prospects, who are rejected by ESA and expected to claim Jobseekers Allowance or Income Support instead.

It is not yet clear how often the imposition of conditions on the second tier of claimants will have helped them return to work, and how often it will have set up impossible hurdles and made things worse. But there is at least the potential to vary the policy response according to variations in individual capabilities and prospects.

The labour market

The rapid growth in Invalidation Benefit claims over the 1980s was often explained (at the time) in terms of Britain’s wider economy – a period of recession, deindustrialisation and high unemployment. The longer time-perspective provided by

the GHS suggests two potentially contradictory conclusions about the influence of underlying labour market conditions on disabled people (Table 2).

- On the one hand, the disability employment penalty has tended to rise steadily, unaffected by the ups and down in the national demand for labour. There is little sign that disabled people have been much affected by booms or busts.
- On the other hand, disabled people have always been more disadvantaged in regions with persistently high unemployment rates. Almost the whole of regional variations in the availability of jobs is born by disabled people, with non-disabled people enjoying consistent prospects wherever they live.

These twin findings suggest that disabled people's job prospects are indeed affected by macro-economic conditions, but it is long-term rather than cyclical variations that are most important to them.

Skills

The substantial expansion of educational opportunity over the decades means that the number of adults with no qualifications has been falling rapidly. But disability and disadvantage have been increasingly concentrated within this dwindling group. The age-standardised proportion of non-qualified people who reported limiting long-standing illness rose from 16 per cent in 1975 to 25 per cent in 2004 (Figure H). Meanwhile the employment penalty faced by unqualified disabled people – the difference between their job probabilities and those of unqualified non-disabled people – rose from 18 to 40 percentage points (Figure M). These two trends combined suggest that the economic disadvantage associated with disability was more than three times as serious for the recent group of unqualified people as for the earlier group. Since the great majority of disabled people experienced their health problems long after they completed their education, for most of them it seems that lack of education led (in some way) to disability, rather than that their education was hampered by their condition. This combination of disability and lack of skills is very serious for the people involved, and requires urgent policy attention. But (on its own) it by no means accounts for the expansion of disability disadvantage, because the number of unqualified people has been falling so rapidly.

At the other end of the educational range, graduates were less likely to be disabled, and less likely to be disadvantaged by disability. The only major change in the experience of people with higher educational qualifications was a sharp rise in their

disability penalty over the first half of the 1990s (Figure M). These comparisons help to show that impairments *on their own* are not necessarily disadvantaging – it is the *combination* of disability with other factors that affects the outcome for better or for worse. But because the total number of graduates has risen, disadvantage facing well-qualified disabled people is an increasingly serious issue.

Comparing surveys and statistics

The combination of GHS data on the prevalence of disability, and on the employment rates of disabled people, can be grossed up to provide estimates of the total number of disabled people with and without jobs in each year analysed. Disabled people with a given set of impairments can be thought of statistically as consisting of three groups:

- a) those who have a job in spite of their disability;
- b) those who do not have a job and would not have had a job even if they had not been disabled;
- c) those who do not have a job *because of* their disability.

It is important to understand that analysis of a large sample can be used to estimate the relative size of each of these groups, even though it is not possible to say which individual survey respondents, nor which potential benefit claimants, would have been out of work in any case, even if not disabled (group b), and which were out of work because of their disability (group c).

The grossed up survey figures suggest that the number of disabled men affected by the disability penalty (group c) increased substantially over the three decades, with a particularly sharp rise over the early 1990s, followed by a period of decline (Figure P). For women, the trend in the number affected by disability was flatter, but there was still an increase over the early 1990s (Figure Q). Comparison of survey estimates with statistics on the number of people receiving IB and SDA shows that benefit receipts lagged behind disadvantage at the start of the period (especially for women), but caught up over the 15 years to about 1990 (especially rapidly for women). Since 1990, the numbers of benefit recipients and the numbers of disadvantaged disabled people were roughly equal, with no clear upwards or downwards trend in the ratio. There is no sign that this ratio responded to the major policy changes implemented in 1996 – nor that subsequent efforts to tackle dependence on benefits made any difference.

Conclusion

This analysis of the trends over three decades has tended to undermine some of the hypotheses frequently put forward to explain the experience of disabled people:

- there is little sign that most of the changes observed over the period have mainly been associated with minor sets of impairments;
- there is little sign that disabled people are especially sensitive to the ups and downs of the business cycle;
- although there was a substantial shift in the ratio of disability-disadvantage (as estimated by the survey) to incapacity-related benefit payments (reported by the DWP) up to about 1990, there is little sign that this ratio was influenced by major changes in the rules governing eligibility for benefits.

Year-on-year comparisons do not really show what processes are at work. The research has been more effective at casting doubt on the validity of existing hypotheses than in putting forward and validating a new explanation for the adverse change in disabled people's employment prospects. It is possible that the main shift has been at the boundary point between social convention and labour market activity. The same period witnessed a major positive shift in the economic identity of women with children - mothers have increasingly seen themselves as potential workers. It is possible that an opposite trend is affecting disabled people, who increasingly see themselves, and are seen by others, as permanently unable to work – in spite of the new emphasis on disability rights in public discourse. While employers have become more willing to recruit from the large pool of well-qualified women, they have become less motivated to hire or retain people who combine ill-health with low skill levels.

Appendix: Coding of health conditions

In 1974 and 1975 the GHS coded respondents' health conditions using the full three-digit International Classification of Diseases (version 6).

In 1988 and 1989, respondents' health conditions were coded direct to 40 categories which were clearly intended to form a subset of ICD groups. The same code list was used again from 1994 onwards.

For the analysis reported in section 7:

- The three-digit ICD codes used in 1974 and 1975 were grouped into the 40 categories used in later GHS years.
- The 40 categories were regrouped into 19 summary codes for analysis.

Table A1 shows the 40 coding categories used from 1988 onwards, and how the ICD codes presented in 1974 and '75 have been grouped to match those categories. The third column shows how the 40 categories were then summarised in 19 groups.¹⁵ The shading is designed to highlight the 19 groups.

Table A2 then records the prevalence of the 19 condition groups in the three sequences of years for which the codes are available. In general these prevalences are stable, although there was an increase in the reported or coded prevalence of some conditions over the period.

¹⁵ Note that the 40 category codes in the first column are not in exact numerical sequence so that hypertension (17) and asthma (23) could be listed first in their series, and so distinguished from 'other circulatory' and 'other respiratory' in the 19 group listing.

Table A1: Coding and grouping of conditions (complaints) in the GHS

40 category code list (1988 onwards)	Equivalent ICD codes (1974 and 1975)	19 groups used for analysis
1 Cancer (neoplasm)	140-239 = 1	Cancer
2 Diabetes	250 = 2	Endocrine
3 Other endocrine/metabolic	240-249 251-279 = 3	
4 Mental illness	290-299 300-309 790 = 4	
5 Learning difficulties	310-315 742 758 759 = 5	Other nervous system
6.Epilepsy/fits/convulsions	345 = 6	
7 Migraine/headaches	346 = 7	
8 Other problems of nervous system	320-324 330-333 340-344 347-349 350-358 741 743 780 781 791 794 850 851 853 854 951 952 954 955 956 958 959 = 8	
9 Poor eye sight/blindness	370 371 376 374 379 365 = 9	
10 Other eye complaints	364 366-369 372 373 375 377 378 744 870 871 921 930 940 950 = 10	
11 Poor hearing/deafness	389 386 388 = 11	Ear
12 Tinnitus	387 = 12	
13 Meniere's disease/ balance problems	385 = 13	
14 Other ear complaints	380-384 745 872 = 14	
17 Hypertension	400-404 = 17	Hypertension
15 Stroke	430-439 = 15	Other circulatory
16 Heart attack/angina	410 413 = 16	
18 Other heart problems	411 414 420-429 390-398 412 746 861 = 18	
19 Haemorrhoids	455 = 19	
20 Varicose veins/phlebitis	451 454 = 20	
21 Other blood vessels/embolic	440-448 450 452 453 456-458 747 782 = 21	
23 Asthma	493 = 23	Asthma
22 Bronchitis/emphysema	466 490 491 492 518 = 22	Other respiratory
24 Hayfever	507 = 24	
25 Other respiratory complaints	460-465 480-486 470-474 500-506 508-517 519 748 783 860 862 = 25	
26 Stomach ulcer	531-534 544 550-553 = 26	Digestive
27 Other digestive complaints	530 535-537 570-579 540-543 749-751 784 785 863 = 27	
28 Complaints of bowel	560-569 = 28	
29 Complaints of mouth etc	520-529 = 29	
30 Kidney complaints	590-592 580-584 593 = 30	Genitourinary
31 Urinary tract infection	599 595 597 598 = 31	
32 Other bladder problems	594 596 753 = 32	
33 Reproductive system disorders	600-607 610-616 620-629 634-637 643 650 660 671 673 674 677 752 762 768 770-776 786 789 866 867 868 = 33	
34 Arthritis etc	710-718 = 34	
35 Back problems	725 728 735 = 35	Back problems
36 Other problems of bones/joints/muscles	720-724 726 727 729 730-734 736-738 754- 756 787 800-849 880-897 901-907 941 = 36	Other musculoskeletal
37 Infectious and parasitic disease	000-136 = 37	Infection
38 Disorders of blood and blood forming organs	280-289 = 38	Blood
39 Skin complaints	680-709 757 942-949 = 39	Skin
40 Other complaints	* = 40	Other

Table A2: Prevalence of 19 groups of conditions among GHS respondents aged 20-59

	1974-75	1988-89	1994-2004
Cancer	0.4%	0.7%	0.7%
Endocrine	1.0%	2.0%	3.0%
Mental illness	1.9%	1.7%	2.6%
Other nervous system	2.1%	3.1%	3.1%
Eye	0.9%	1.1%	0.8%
Ear	0.9%	1.4%	1.1%
Hypertension	0.8%	2.0%	2.3%
Other circulatory	2.5%	3.0%	2.7%
Asthma	0.9%	2.9%	4.3%
Other respiratory	2.7%	3.2%	1.4%
Digestive	2.1%	3.0%	2.5%
Genitourinary	0.8%	1.4%	1.0%
Arthritis	2.5%	4.2%	4.0%
Back problems	1.3%	4.7%	4.6%
Other musculoskeletal	2.4%	3.0%	3.0%
Infection	1.0%	0.2%	0.2%
Blood	0.4%	0.3%	0.3%
Skin	0.8%	1.3%	0.9%
Other	0.7%	0.3%	0.3%