Disabled People's Financial Histories: Uncovering the disability wealth-penalty

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Centre for Analysis of Social Exclusion

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Editorial note and Acknowledgements

Abstract

It is well established that on average disabled people and the households in which they live face greater financial disadvantage in terms of income than their counterparts. What is less well understood is how they fare in terms of their wealth status. In this paper we use data from two large scale social surveys to examine the relationship between disability status and household wealth holdings. We find that overall disabled people have substantially lower household wealth and all components of wealth (property, financial, pension, physical) than non-disabled people but even these average differences mask important lifecycle patterns. The incidence of disability increases with age and the effect of this is that disabled people are on average older than non-disabled people. As wealth accumulation also increases with age up to retirement the effect is that average differences understate the true disability wealth-penalty. People who experience disability later in life have been in a stronger position to accumulate assets over their working lives than people who experience disability over the crucial wealth-accumulation stage (35-64 years) of the lifecycle. The full extent of the disability wealth-penalty can only be observed by looking at age or lifecycle profiles. We find evidence of cumulative disadvantage related to disability longevity and cumulative advantage to remaining disability free. Part of the disability wealth-penalty can be accounted for by lower average levels of education among disabled people and by their lower position in the socio-economic classification (NS-SEC) reflecting lower profiles of lifetime earnings and household income. The evidence points to a situation where disabled people have been unable to save and accumulate assets to anything like the extent of their non-disabled peers most likely through lower long term income and extra costs associated with disability. This puts them at a disadvantage in terms of being able to draw on an asset in times of need when expenditure needs exceed current levels of income, lower pension wealth on entering retirement and less likely to be in a position to benefit from the 'asset-effect' and more generally is a matter of concern in terms of equality and social mobility.

Key words: wealth, disability, inequality, lifecycle

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1.   Introduction and policy context

Individuals are motivated to accumulate financial assets for a number of reasons; some are short term and some are long term. People save for luxuries, holidays, to buy a car, to cope with unexpected expenses, a deposit for a house, to smooth income over periods when it is relatively high and relatively low, for their children and for their retirement. When people don't have enough savings to cover these expenditures, or even to cover current expenditure, they turn to credit markets – bank overdrafts, credit cards, bank loans, pay-day-loan companies, credit unions – or family and friends. Financial assets, therefore, play a key role in determining the financial well-being and welfare of households. Theory and empirical evidence support the notion that asset accumulation and depletion follows a distinct lifecycle pattern; asset levels are generally low in early adult life, gradually increase to reach a peak around the age of retirement and then decline.

In addition to the benefit of accumulating assets to fund future expenditure there is new evidence that asset-holding appears to play an important role in influencing a number of long term outcomes (Bynner and Paxton, 2001; McKnight and Karagiannaki, 2013). This has become known as the "asset-effect". Recent evidence for the UK has shown that there is a positive relationship between parental asset holdings and children's education and later employment outcomes, over and above any influence from parents' education and income (Karagiannaki, 2012). Individuals' own asset-holdings are also associated with improved employment and health outcomes in later life, even after controlling for a wide range of background factors (McKnight, 2011).

Despite the fact that financial assets are so important much less is known about people's wealth status and asset-holding histories than about their income or earnings. This is partly because of the lack of high quality data, particularly longitudinal data, on financial assets, debt and wealth. Improvements in survey design, the introduction of dedicated surveys – such as the UK Wealth and Assets Survey – and methods for weighting samples and imputing missing values, have meant that knowledge on this aspect of people's lives is improving. For the UK a recent book examines trends in household wealth accumulation, the distribution of wealth and how and why it has changed in recent times, the impact of inheritance and policy in relation to the taxation of capital (Hills, et al., 2013). An independent commission – the fourth Birmingham Policy Commission – recently published its final report on the distribution of wealth in the UK (Rowlingson and Mullineux, 2013). The Commission reviewed existing evidence on wealth inequality, made an assessment of the extent to which wealth inequality is problematic and put forward a number of important policy recommendations. However, the position of disabled people was not covered in either of these publications reflecting the limited amount of research that has been conducted in this area.

It is well established that on average disabled people and the households in which they live face greater financial disadvantage in terms of income than their counterparts. There is reason to believe that disabled people face particular challenges when it comes to accumulating financial assets. This seems to be largely driven by the fact that, on average, disabled people have lower household incomes than non-disabled people (DWP, 2013) and therefore are less likely to have an excess of income over their expenditure needs which they can save. The reasons for this are complex but largely related to differences in ability to generate income and the extra costs associated with a long-term condition of impairment. Where employment is more precarious, as is the case for many disabled people who are disproportionately employed in low wage jobs (Jones, 2008; Burchardt and McKnight, 2003), income can fluctuate more. Expenditure can also be 'lumpier' particularly where disabled people require additional, often costly, equipment and services. There are also 'extra costs' of living associated with some types of disability (Smith et al., 2004). Some disabled people may require additional assistance to understand the suitability of financial products and savings vehicles as well as credit to meet their particular needs. The benefit system, which many disabled people are reliant on, can discourage savings and asset accumulation.

Little is currently known about the financial asset status and financial histories of disabled people. What is known is that at least at the aggregate level disabled people are less likely to have saved in the previous 12 months or to save regularly than non-disabled people and more likely to have reported that this was because they couldn't afford to save. They are less likely to have bank accounts (current or savings/deposit) or to have tax-free savings vehicles such as Individual Savings Accounts (ISAs) (Ipsos MORI, 2013). They also appear to be less likely to buy on credit or even own credit cards but are more likely to borrow from "loan sharks" (ibid). Although this gives us some indication of the aggregate financial situation of disabled people the population of disabled people is not homogeneous and disability status is far from fixed.[1] Households' economic and demographic characteristics play an important role in determining households' wealth status (Cowell, Karagiannaki and McKnight, 2012), and it is necessary to understand whether it is these characteristics that shape the financial asset profiles of disabled people rather than other factors associated with their disability status.

There are five key reasons why wealth is a crucial indicator of individuals' and families' financial well-being:

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[1]   Burchardt's analysis of longitudinal data shows that only a small proportion of working age people who experience disability are long-term disabled, despite the fact that at any one time, long-term disabled people make up a high proportion of all disabled people. Over half of those who become limited in activities of daily living as adults have spells lasting less than two years, but few who remain disabled after four years recover. Intermittent patterns of disability, particularly due to mental illness, are common (Burchardt, 2000).

(1)   Wealth holdings at a point in time provide an important indicator of past financial health, in the extent to which savings represent the excess of income over consumption needs or inheritance and inter-vivos transfers;

(2)   It indicates their ability to cope with financial hardship in the future and fund income and expenditures during retirement;

(3)   Asset-holdings help ensure that individuals and children are in a position to profit from the additional benefits that arise through the 'asset-effect';

(4)   Wealth allows parents to assist their children through inter-vivos transfers and inheritance;

(5)   It can provide a signal of financial distress where a household is severely indebted or entering retirement with few financial assets.

Despite the clear importance of asset accumulation, the high levels of wealth inequality in the UK (Hills et al., 2013) and the additional advantages enjoyed by people who have accumulated assets (for them and their offspring), asset-based welfare was brought to an abrupt halt by the Coalition government who terminated the Child Trust Fund initiative and cancelled the national roll-out of Savings Gateway. Junior ISAs in part replaced the CTF by offering tax-free savings accounts but, unlike the CTF, there are no financial contributions from the government and these accounts are not automatically opened for all children at birth. As the poorest people are outside the tax system, tax-free saving incentive schemes (such as ISAs) tend to benefit better-off individuals and households.

To better understand disabled people's finances and to inform the development of recommendations for policy and practice, robust empirical evidence is needed. It is hoped that the research presented in this paper will be used to help inform this debate and highlight the gulf between the financial position of non-disabled and disabled people and the households in which they live.

2.   Aims and objectives

In this research we aim to provide a comprehensive picture of the wealth status of disabled people and of the households in which they live in terms of household wealth holdings and financial liabilities. We will compare the household level wealth status of disabled people with non-disabled people and household wealth of households in which there is an adult disabled member with households without any adult disabled members. This information will be used to assess whether or not there is evidence of a disability related wealth-penalty. There is an emergent and growing body of research on household wealth in the UK which has highlighted the recent substantial growth in household wealth holdings associated with the house price boom between 2000 and the start of the financial crisis in 2007 (Hills et al., 2013; Crossley and O'Dea, 2010). This growth was accompanied by falling relative wealth inequality but big increases in the absolute gaps between wealthy and less wealthy households. There is, however, little (if any) evidence on how disabled people fared over this period and we aim to fill this knowledge gap.

As noted in the introduction, disability is by no means a lifelong status for many people who experience it. Making use of a longitudinal data source we set out to understand the dynamic nature of disability in relation to the evolution of wealth accumulation over the lifecycle. This will allow us to assess whether or not more transient experience of disability has a different impact on wealth accumulation than longer term experience of disability. Importantly we will examine if experience of disability at different stages of the lifecycle is more or less detrimental in the context of wealth accumulation. Looking at the duration of disability status will allow us to assess the cumulative effect of disability on household wealth holdings.

Some simple statistical analysis will be used to help understand what personal and household characteristics are important in accounting for differences in household wealth holdings between disabled and non-disabled people.

3.   Data sources

Two high quality national data sources are used in this study of household wealth. The British Household Panel Survey (BHPS) is used to analyse change in wealth holdings between 1995, 2000 and 2005. The longitudinal nature of this survey allows the possibility to compute actual changes in household wealth holdings over this 10 year period alongside changes in disability status. The Wealth and Assets Survey (WAS), as its name implies, is a specialist financial survey of households. This means that wealth information collected in this survey is superior to that collected in general household surveys. Data from the most recent wave of this survey, conducted in 2008/10, is used to provide the most up to date information on household wealth holdings.

The original sample for the BHPS was interviewed in 1991 (9,092 adults living in 5,050 households) and since then efforts have been made to interview these people on an annual basis. Where new households are formed by members of the original sample or where children have left home and set up their own households, these too have become part of the BHPS sample. New people entering the households of original sample members (cohabitation, marriage, etc.) also become part of the survey sample. In 2008 the BHPS came to an end but BHPS sample respondents were invited to join the new Understanding Society survey and many have chosen to do so. In the future, as these data become available it will be interesting to continue tracking the wealth status of BHPS members in this new survey.

Every year the BHPS collected information on households' financial flows of individual earnings and household income. Annual information was also collected on housing wealth but detailed information on households' assets and debts was only collected periodically. Every five years, starting in 1995, a special module was used to collect detailed information from respondents on financial assets and liabilities and housing wealth and housing related debt. This results in three cross-sectional observations in 1995, 2000 and 2005 which are used in this study. The fact that the

records are longitudinal means that we are able to link respondents' records over these years and measure actual changes in wealth and disability status.

The Wealth and Assets Survey is conducted on behalf of the Office for National Statistics. Data for each cross-sectional wave is collected over a two year period. Two waves of the WAS are currently available: 2006/08 and 2008/10. There is a longitudinal element within WAS but here we make use of the cross-sectional information as the longitudinal records are currently very short (2006/08-2008/10). The sample size is large (53,300 adults, aged 16 years and over, living in 30,595 households in the 2006/08 wave and 34,500 adults living in 20,170 households in the 2008/10 wave) and careful consideration has been given to the design of the sampling frame to ensure sufficient coverage of high wealth households which are often missed by household surveys or not covered in sufficient numbers for reliable statistical inference. This is particularly an issue for wealth due to the high concentration of wealth within a relatively small number of wealthy households. ONS statisticians have conducted a considerable amount of work designing weights and imputing missing data values. The 2008/10 wave is used in the following analysis although all of the analysis has also been conducted for the 2006/08 wave and is available from the author on request. The 2008/10 data is more up to date and for the computation of total household net worth the sample size is larger than for the 2006/08 wave as in the earlier wave physical wealth (household contents, personal possessions, valuables and collectables, etc.) was only collected from half the sample while in the later wave it was collected from the full sample.

4.   Methodological issues

In this section we highlight a few key methodological issues in relation to the empirical analysis of wealth data.

Lifecycle analysis

The lifecycle nature of wealth accumulation means that it is imperative that any analysis of wealth holdings is conducted with a lifecycle model in mind. This is particularly important in the context of disability status as incidence of disability varies over the lifecycle and for those whose experience of disability is not life-long the age of onset of disability could be important.

Cross-sectional data can be used to examine the relationship between age and wealth at a point in time. This is different from examining true lifetime profiles of wealth because there may be important cohort and time effects that mean that, for example, the average level of wealth of those currently aged 45-54 year is not indicative of the average level of wealth of those currently 24-34 years by the time they reach 45-54 years. There are many reasons why this may be the case, such as increases in home ownership during periods of cheaper credit (or more generally changes in access to credit) may benefit younger age cohorts, and the wealth status of older cohorts may not be indicative of how these younger cohorts fare when they reach similar ages.

Changes in public provision of pensions or financing of social care or higher education will change people's incentives to accumulate private assets and these may impact on different age cohorts in different ways and at different times.

In the analysis presented here we examine cross-sectional profiles of average wealth holdings by age and complement this with longitudinal analysis of wealth holdings and disability status.

Weighting

National household surveys generally aim to be representative of the population they seek to cover but the sample of respondents surveyed can end up being unrepresentative either because of the way the sampling frame was defined, interviewers being unable to make contact with some households or because individuals chose not to take part in the survey. To enable users to make population inferences from an unrepresentative sample a series of weights are often constructed to correct for differences in sample selection probabilities, non-response and attrition (in longitudinal surveys). The weights are based on known population characteristics and give greater weight to respondents who are under-represented in the sample and lower weight to respondents who are over-represented in the sample. Weighting algorithms are fairly sophisticated but a weighted sample is not the same as a randomly drawn population sample. The weighted sample of individuals relies on the sample of individuals who responded to the survey being representative of the group to which they belong (however that group is defined for weighting purposes). Weighting will also result in lower variance than would be found in the true population, although some weighting techniques add an element of random variation. For technical details on the construction of weights for the WAS see Black (2011) and for the BHPS see the BHPS User Manual.

For the analysis presented in this paper the issue of whether weighted or unweighted data should be examined/presented is hampered further by the fact that the Wealth and Assets Survey disability status is only defined for part of the full sample for which the sampling weights were devised. This is because only respondents who were not in full-time education and didn't respond via a proxy were asked the questions used to define disability status (reducing the sample size to 29,608 individuals in wave 2, from 34,500). If this sub-sample is different from the full sample then the weights will clearly behave in an unintended way. The advice received from ONS is that weights should be applied to the non-proxy sample of respondents although they recognise that the weights were not designed for this sub-sample. In the BHPS an estimate of wealth is not available for all households due to incomplete information. In some cases this is addressed through imputation methods (more on this below) but overall it remains that the sample of households used in the analysis is only a sub-sample of the full BHPS sample in any given year and therefore not the sample for which the series of weights were devised.

There are also differences between the WAS weights where greater emphasis was on producing reliable estimates of wealth than the BHPS which is a general household survey and the weights were not devised with the view to producing wealth estimates.

We present findings using weighted and unweighted data where appropriate.

Imputation
For the BHPS data the values of wealth used in this research draws on a dataset created for a previous study of wealth in the UK. An extensive part of the data preparation for this previous research, funded by the Nuffield Foundation, involved the imputation of missing wealth component values and the imputation of values reported within bands for financial holdings. See Karagiannaki (2011) for a full description of the methods used. Estimates of net housing wealth in the BHPS are based on respondents' own estimated value of their property and outstanding mortgages and property loans.

In the WAS two methods of imputation have been applied by ONS to deal with missing wealth data. Deterministic imputation was used wherever possible which uses rule-based editing to replace missing values, Where deterministic imputation was not possible, statistical imputation was used whereby missing values were replaced through a process of statistical editing using the Nearest Neighbour/Minimum Change methodology. This method replaces missing data with plausible values drawn from other records in the data on the basis that the imputed record introduces the least amount of change to the recipient record. See Black (2011) for the technical details of imputation methods applied to WAS data.

5.   Definitions

This section describes key aspects in relation to the definitions of disability status and wealth used in this research.

Disability
A number of different definitions of disability are used in the literature some of which reflect those used to denote entitlement to disability related benefits or legal definitions (eg the Disability Discrimination Act definition or the Equality Act 2010 definition[2]). In general definitions used in the analysis of household survey data are limited by what information is collected in the questionnaires and interviews. This study adopts a definition of disability designed to capture long term and limiting disability within the limitations of the information collected in the BHPS and the WAS.

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[2]   You're disabled under the Equality Act 2010 if you have a physical or mental impairment that has a 'substantial' and 'long-term' negative effect on your ability to do normal daily activities.

In this research we use information collected from adult respondents (aged 16 and over) in the two surveys to define disabled people. For the WAS this is further restricted to respondents who are not in full-time education and those who didn't respond via a proxy.

In the BHPS, individuals are classified as disabled if they report that their health in any way limits their daily activities compared to most people of their age, and/or if their health limits the type of work or the amount of work they can do (paid or unpaid). The precise questions are shown in Box 1. This is not an ideal definition of disability due to the emphasis on health rather than disability which could result in healthy disabled people not being captured, but it is the best available. Within the BHPS questionnaire the questions do follow on from a detailed question on disability and so it is fair to assume that survey respondents will have disability and health in mind when answering these questions.

Box 1: Disability definition - the British Household Panel Survey

Does your health in any way limit your daily activities compared to most people of your age?
Yes
No

Does your health limit the type of work or the amount of work you can do?
(Both paid and unpaid work)
Yes
No

In the Wealth and Assets Survey (WAS) respondents are defined as disabled if they report having any long-standing illness, disability or infirmity that limits their activities in any way (survey questions in Box 2). As noted above, proxy respondents are not asked the questions on long standing illness and disability so individuals in this dataset whose response to the WAS was via a proxy are excluded from this analysis.

Wealth

The measures of wealth used in this study are dependent on the information collected and this varies between the two surveys. The main differences between the BHPS and WAS measures of household wealth are that the WAS collects additional information on private pension wealth and physical wealth and greater coverage of financial assets due to the inclusion of cash, current accounts and overdrafts. The advantage with the WAS is that it is a specialist wealth survey and therefore the coverage of financial matters is more complete and more detailed. The WAS is also designed to provide good coverage of higher wealth households through sampling design and there are more comprehensive and sophisticated methods of imputation for missing data and weighting to correct for sample selection. The BHPS is a general household survey; its coverage of higher wealth households is not as good but it has the advantage of following the same individuals and households over a long period of time.

For the BHPS data it is possible to compute net housing assets (property assets less mortgages and property related loans), net financial assets (financial assets less non-housing debt) and net wealth (net housing assets plus net financial assets). The measures of wealth using BHPS data do not include private pension wealth or physical wealth.

For the WAS data there is information on net housing assets, net financial assets, private pension wealth and physical wealth. Physical wealth was only collected from a proportion of the full sample in wave 1 so any analysis of total household wealth in wave 1 is limited to this smaller sample. In wave 2 the full sample provided information on physical wealth.

Box 4: Wealth definitions - the Wealth and Assets Survey

Net housing wealth
Property wealth is comprised of the value of the main residence for a household and the value of any additional property or properties owned by the household. The gross value of household property and the value of mortgages (liabilities) are combined to provide an estimate of net housing wealth.

Net financial assets
Financial wealth comprises formal financial assets (such as bank accounts, savings, stocks and shares and other recognised savings vehicles), informal financial assets (such as borrowing from family), assets held by children in the household and liabilities (such as formal borrowing, overdrafts and debts). The gross value of financial assets and the value of debts and other liabilities are combined to produce estimates of net financial wealth.

Pension wealth
Pension wealth is an estimate of private (non-state) pension wealth.

Physical wealth
Physical wealth is derived from respondents' own estimates of the value of the contents of their main residence, the contents of any property which the household owns other than main residence and also collectables, valuables, vehicles and personalised number plates. All estimates of physical wealth are given on a gross basis.

Total net wealth
This is the sum of net housing wealth, net financial wealth, pension wealth and physical wealth.

Unit of analysis
Wealth is normally measured at the household level, summing assets and debts of all members of a household. The reason for doing this is because many household assets are jointly held and shared within a household and so wealth is typically treated as a common good, although clearly within a household some assets and debts are viewed as belonging to certain individuals. Total household wealth is rarely equivalised to reflect differences in household size and composition. There is no consensus on whether or not wealth should be equivalised or which scale should be applied. Household income is equivalised to adjust for differences in 'need' between households but 'need' in terms of wealth holdings is an undefined concept.

Like the majority of studies the measure of wealth used here is at the household level and it is not equivalised for differences in household size and composition. In this way wealth is treated as a common-good – for example, all members of a household are

assumed to 'benefit' equally from living in a house of a certain value and all members of a household are assumed to 'suffer' from the burden of a household being in financial debt.

The distributions of wealth can be analysed at the individual level, where each individual is assigned the totality of wealth or liabilities of the household in which they live or the unit of analysis can be the household. For an analysis of disability it is interesting to look at both because the individual level analysis allows us to compare the wealth of households by individuals' own disability status. However, this approach misses the fact that some non-disabled people will be living in households in which a disabled person lives potentially affecting the wealth of the household in which they live. The household level analysis allows us to compare households in which there is a disabled member with households where no disabled people live. However for household level analysis the household is described by the characteristics – most importantly age – of the household reference person who may or may not be the disabled person. This is because it is the characteristics of the HRP that are most likely to determine the wealth of households. In this study we analyse household wealth holdings at both levels: where the unit of analysis is the individual and where the unit of analysis is the household.

6. Disability incidence and dynamics

In understanding the interplay between disability and wealth it is important to have a strong grasp of the pattern of disability status over the lifecycle. Figure 1 shows the share of individuals in the BHPS defined as disabled within each of the specified age groups and across the whole sample. Overall around one if five respondents are defined as disabled according to this definition but this varies over the lifecycle with less than 10 per cent of respondents in the 16-24 age group compared with over half of respondents aged 75 and over. It is clear that the incidence of disability increases with age with the largest increments occurring between the 45-54 and 55-64 age groups, and the 65-74 and the 75+ age groups. The age related nature of disability incidence has important implications for the relationship between disability status and wealth holdings as will be shown later.

Figure 1 also shows the incidence of limiting disability by age and overall in the three years for which we have detailed information on wealth holdings. This shows that there was a small increase in the incidence of limiting disability after 1995 with the greatest increases occurring in the older age groups. The reason for the fall in the 55-64 age group between 2000 and 2005 in this series is not known.

A comparison between the unweighted series (Figure 1a) and the weighted series (Figure 1b) shows that there is very little difference between the two series. Weighting seems to slightly increase the incidence of disability suggesting that disabled people are marginally under-represented in the raw data. Around one-fifth of adults in the BHPS are classified as disabled (23% in the weighted series).

Figure 1 also shows the share of households with a disabled adult member in the BHPS, unweighted (Figure 1c) and weighted (Figure 1d). As expected there is a higher share of households with an adult member who is disabled than the incidence of disability among the adult population, particularly in households with younger household heads (HRP). Weighting tends to increase the incidence of household disability. There is some fluctuation between years within age groups but overall little change over this ten year period in the incidence of household disability; around one-third in the unweighted series and 36-37% in the weighted series.

Figure 1: Incidence of disability among respondents and households in the BHPS

Share of BHPS respondents with limiting disability by age group 1995, 2000 and 2005

a) unweighted　　　　　　　　　　　　　　b) weighted
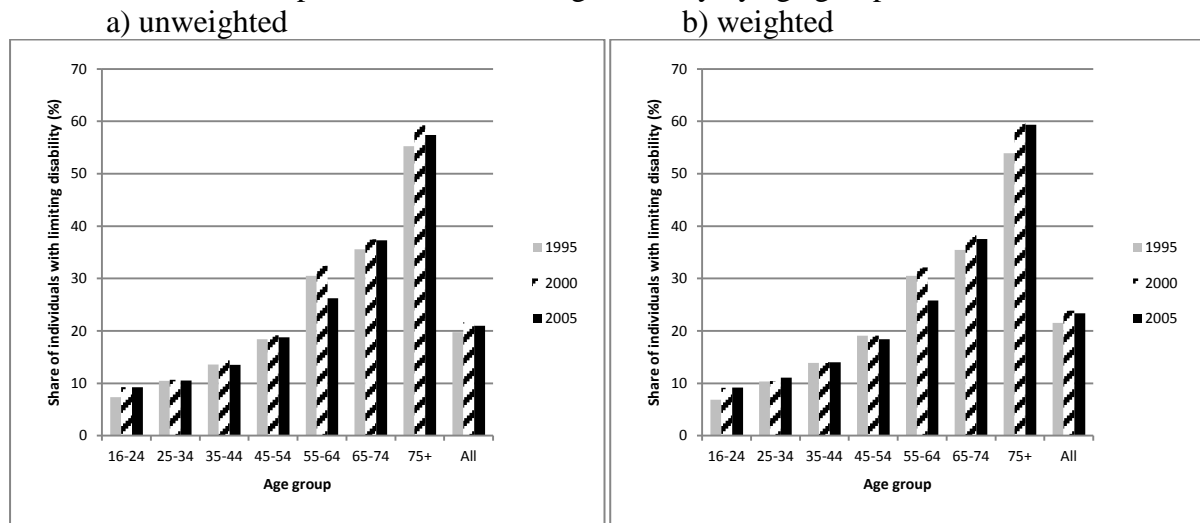
Share of BHPS households with a disabled member by HRP age group 1995, 2000 and 2005
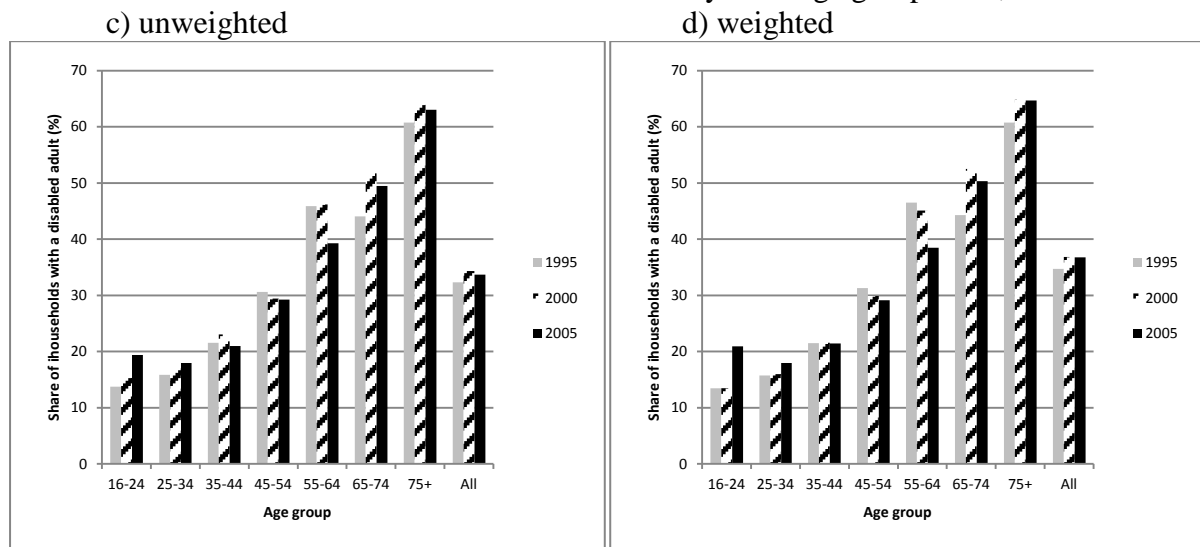
c) unweighted　　　　　　　　　　　　　　d) weighted

Note: Does your health in any way limit your daily activities compared to most people of your age? (yes) or Does your health limit the type or amount of work you can do? (paid and unpaid) (yes)

In the WAS there is a slightly larger share defined as disabled which could reflect differences in the definition of disability used, sample coverage or the different time period covered. The exclusion of proxy respondents (in addition to the exclusion of individuals aged over 16 in full-time education) results in a big reduction in the sample size. This led to a sample size of 45,636 in wave one and 29,608 in wave two with valid responses (out of full sample sizes of 53,300 and 34,500, respectively). The overall proportions defined as disabled in wave one is 24 percent unweighted and 23 percent weighted and in wave two 25 percent unweighted and 24 percent weighted.

Figure 2 shows the percentage of individuals in the WAS who are disabled in wave 1 and wave 2 for the weighted and unweighted series. There is very little change (if any) in the incidence of disability between these two waves. The effect of weighting leads to a slightly higher incidence of disability suggesting that disabled people are under-represented in the raw data particularly from age 55 upwards.

Figure 3 shows the incidence of disability at the household level. Households are defined in terms of the age of the Household Reference Person (HRP) and the disability status of adults within each household. The incidence of disability at the household level is higher than at the individual level simply because disabled people are dispersed across households rather than all members of a household being either disabled or not disabled. Weighting slightly increases the incidence of households defined as disabled and there is no great change between the two waves.

Figure 2: Individuals: percentage of WAS respondents defined as disabled in wave one (W1) and wave two (W2) (weighted and unweighted) by age groups
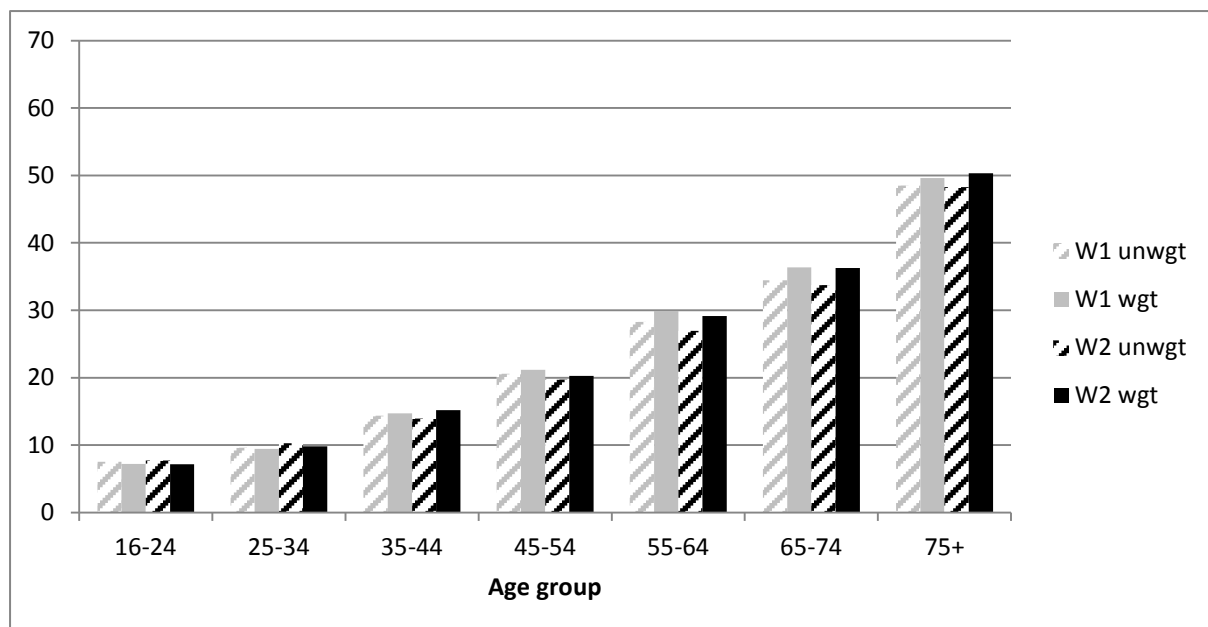

Note: Does your health in any way limit your daily activities compared to most people of your age? (yes) or Does your health limit the type or amount of work you can do? (paid and unpaid) (yes)

Figure 3: Households: percentage of WAS households with at least one disabled member in wave one and wave two (weighted and unweighted) by age groups (HRP)
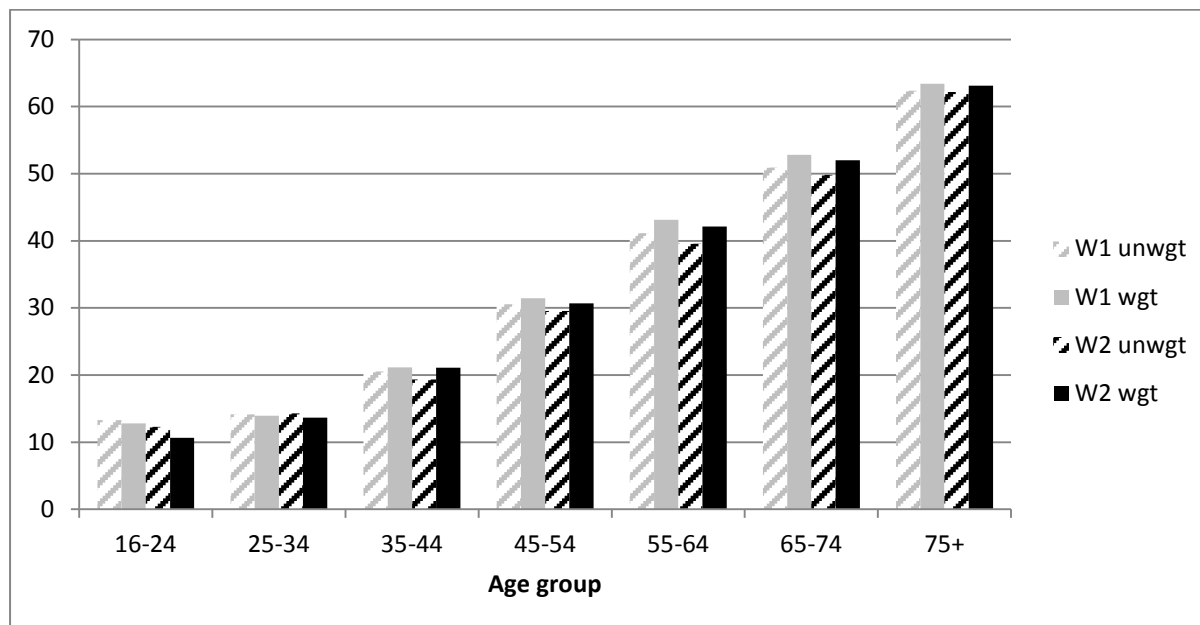
Note: Does your health in any way limit your daily activities compared to most people of your age? (yes) or Does your health limit the type or amount of work you can do? (paid and unpaid) (yes)

The incidence of disability in the oldest age group (75+ years) is higher in the BHPS data than the WAS data. This could be to do with sampling differences between the two surveys and the emphasis on comparing health limitations to most people of your age in the BHPS but not in the WAS.

7.   Age wealth profiles

In this section we examine the relationship between age and wealth at different points in time comparing household wealth and debt holdings for disabled people and non-disabled people and for the households in which they live. We use information from the BHPS (1995/2000/2005) and the WAS (2008/10) to assess changes in household wealth and changes in the relationship between disability and wealth holdings for different measures of wealth and debt in the two surveys. We use two measures of average wealth: the median – the value of wealth held at the 50th percentile of the distribution – and the arithmetic mean. Due to the skewed nature of the wealth distribution the mean is likely to give an unrepresentative value of typical wealth holdings as it is sensitive to outliers. A comparison between the median and mean values gives an indication of the concentration of wealth among richer households. For the individual level analysis we look at individuals' own disability status and their age but household level wealth holdings. For the household level analysis we classify households on the basis of whether or not any adult member is disabled; the age of the household reference person and household level wealth is used to describe the household.

British Household Panel Survey – 1995, 2000 and 2005

Figure 4 shows the age-wealth profiles in (a) 1995, (b) 2000 and (c) 2005 where average values are computed within age groups and disability status and the analysis is conducted at the individual level. The measure of wealth used is total household net worth (net housing assets plus net financial assets) and all estimates are shown in 2005 values[3] and therefore any increase over time shows a real terms increase. Average household net worth holdings increase with age, peaking in the 55-64 age group (the exception being that average household net worth peaks in the 65-74 age group in 2000 for disabled people). There has been an increase in average household net worth over this 10 year period, particularly marked between 2000 and 2005. The higher average levels of household net worth found in the 16-24 age group relative to the 25-34 age group is due to the fact that many of the 16-24 age group are living at home and the estimated average level of household wealth for this age group typically relates to their parents.

In all age groups average levels of household wealth are higher for non-disabled people than for disabled people. Disabled people in the 25-34 and 35-44 age groups appear to have missed out on the big increase in wealth experienced by non-disabled people between 2000 and 2005. We know from previous research that this increase was driven by house price rises (Bastagli and Hills, 2013) and therefore this finding suggests that disabled people (certainly in these age groups) didn't benefit from the housing boom. This could have long term implications for the inequality between these two groups as they age and become reliant on their accumulated wealth holdings.

The all-age average gaps in household net wealth are smaller than those observed within age groups (in some cases quite considerably smaller). This is due to the greater incidence of disability at older ages (as shown in Figures 1-3) when wealth holdings are typically higher and the fact that when the onset of disability occurs later in life these individuals have been in a stronger position to accumulate assets relative to individuals who have experienced disability from a young age. This means that the all-age average gaps mask the true extent of the difference in wealth holdings between disabled and non-disabled people.

Figure 5 shows age wealth profiles by disability status but for these data the unit of analysis is the household. Age is defined in terms of the household reference person and disability status is determined by the status of all adult members of the household. While the overall age-wealth profiles are very similar to the individual level profiles shown in Figure 4, the much lower average levels of household net worth for the 16-24 age group demonstrates the fact that the higher average wealth levels shown in the individual level data are driven by the fact that these young people are typically living with their parents. It is worth noting the much higher average levels of wealth for non-disabled individuals in Figure 4 which does suggest that the parental wealth of young

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[3]   Values of wealth in 1995 and 2000 are adjusted by inflation to show their equivalent value in 2005.

disabled people in this age group who are living at home is much lower than is the case for their non-disabled peers. Again we see that the all-age average gaps mask the true extent of the disability household wealth-penalty. In fact we observe in 1995 and 2000 mean and median levels of household net wealth are virtually the same for households with disabled adults and households where there are no disabled adults. This is not the picture that emerges from the age-wealth profiles which show quite considerable gaps in wealth holdings within age groups.

Figure 4: Individuals: Total household net wealth by own age and disability status (medians – columns; means – lines)
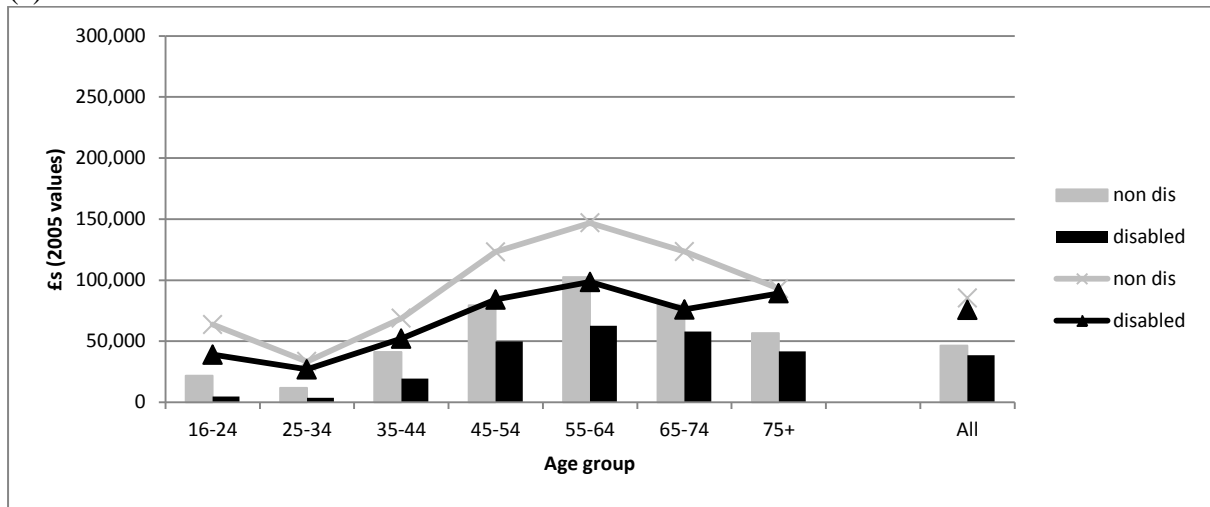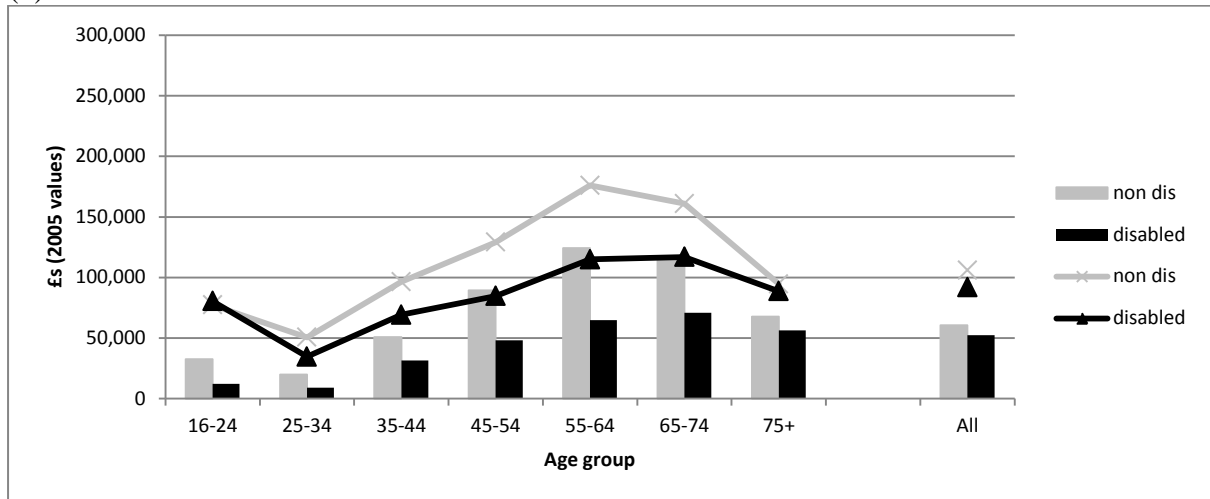
(a) 1995

(b) 2000

(c) 2005

Source: British Household Panel Survey
Note: Data are weighted

Figure 5: Households: Total household net worth by HRP age and household disability status (medians – columns; means – lines)

(a) 1995
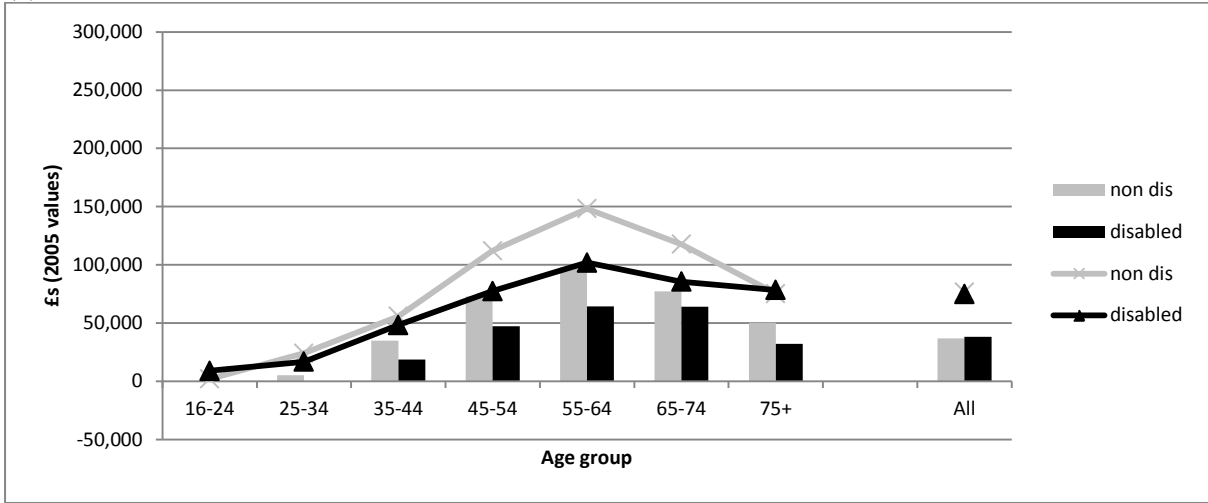
(b) 2000
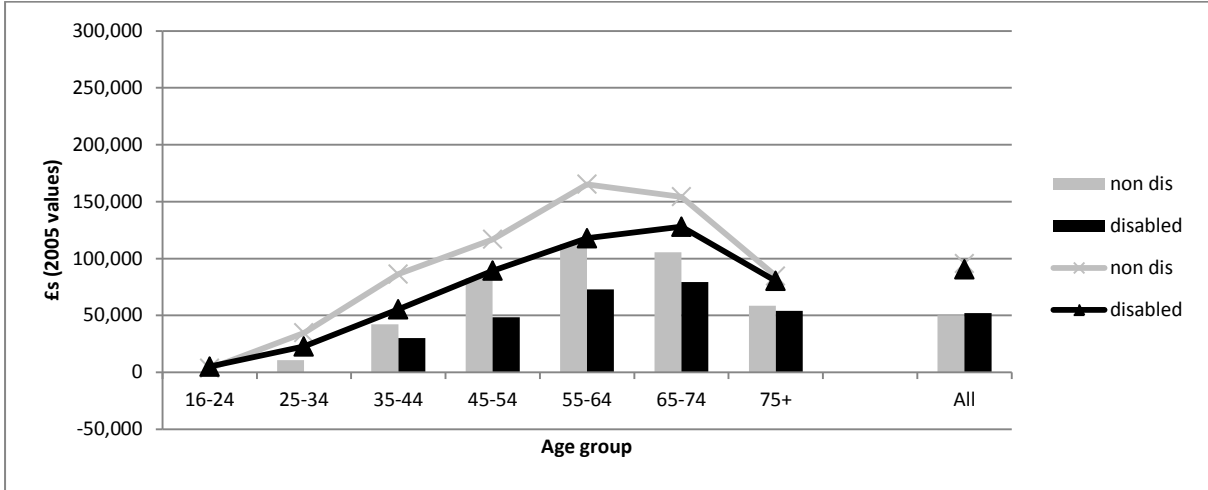
(c) 2005
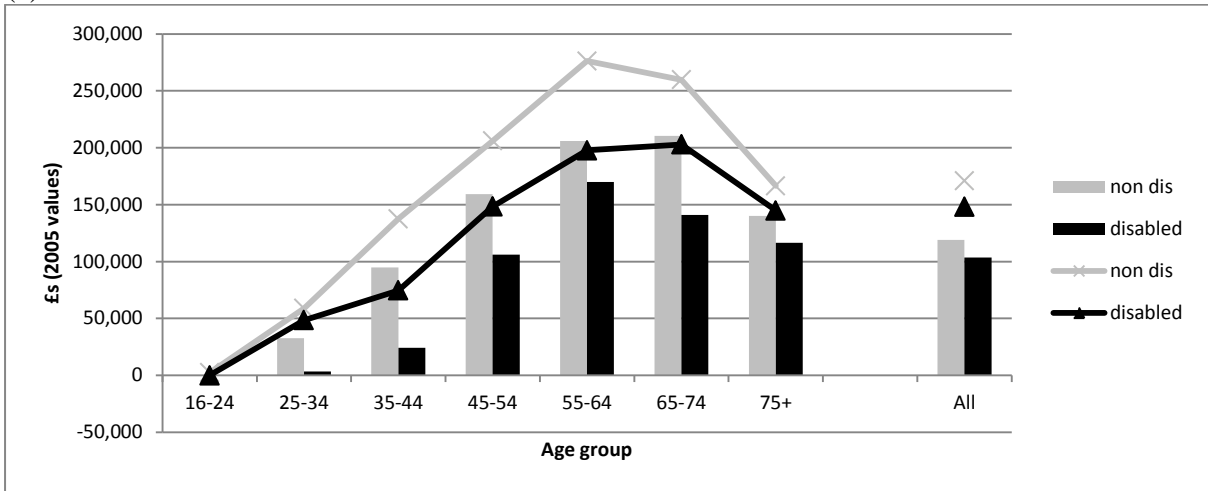
Source: British Household Panel Survey
Note: Data are weighted

Figure 6 shows the age profiles for gross household financial assets (i.e. assets held without adjusting for liabilities) for individuals by their own disability status. There is much less growth over time in gross financial assets than in net worth, signalling the importance in the growth of housing wealth over this period. The big gaps between mean financial assets and median financial assets indicate the skewed nature of financial assets with a greater concentration of financial assets in wealthier households than is the case for property wealth. In all age groups and in all years we observe that average gross household financial assets are lower for disabled people than for non-disabled people.

Figure 7 shows the other side of financial assets, focusing on financial debts (excluding mortgage and housing related debt – see definition in Box 3). Mirroring the lifecycle profile of wealth accumulation, financial debt tends to be concentrated in younger age groups reflecting typical lifecycle patterns where expenditure exceeds income and the difference is met through borrowing and credit. Over this ten year period there was a big increase in mean and median levels of household financial debt for individuals in the 25-34 and 35-44 age groups. For disabled people aged between 25 and 34 median financial debt increased from around £650 in 1995 to £1,900 in 2005 and mean financial debt increased from £2,000 in 1995 to £6,000 in 2005. The increasing gap between median and mean levels of debt within age groups suggests that the distribution of debt has become more skewed, with some individuals holding very high levels of financial debt.

In the 35-44 age group, and to a certain extent other age groups, it is noticeable that average household financial debt (mean and median) is lower among disabled people than for non-disabled people. This may be a very welcome finding but it also may signal unequal treatment in terms of access to credit. The average values for the 16-24 age group, as noted earlier, are shaped by parental household circumstances.

Figure 6: Individuals: Gross household financial assets by own age and disability status (medians – columns; means – lines)
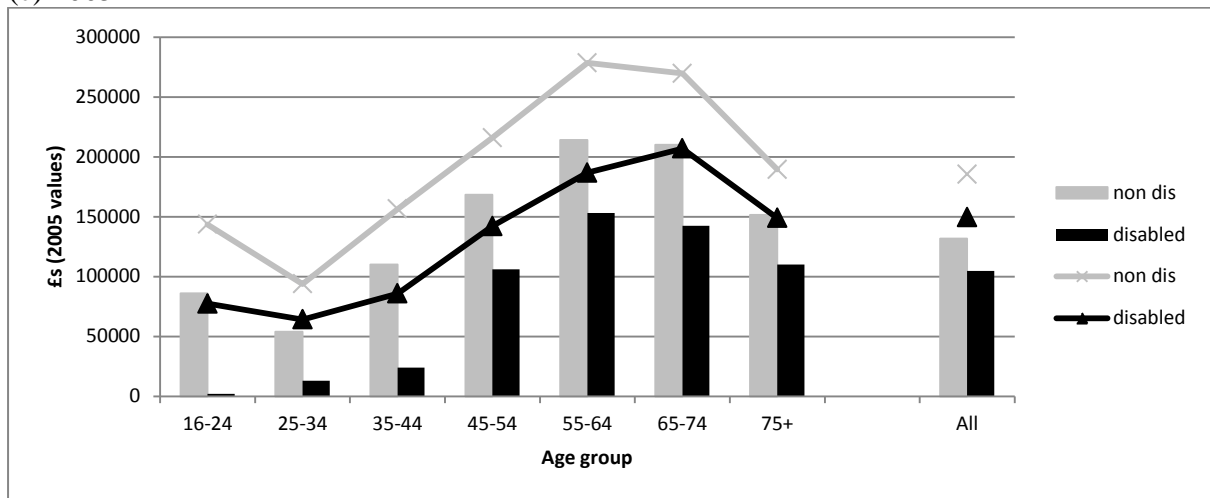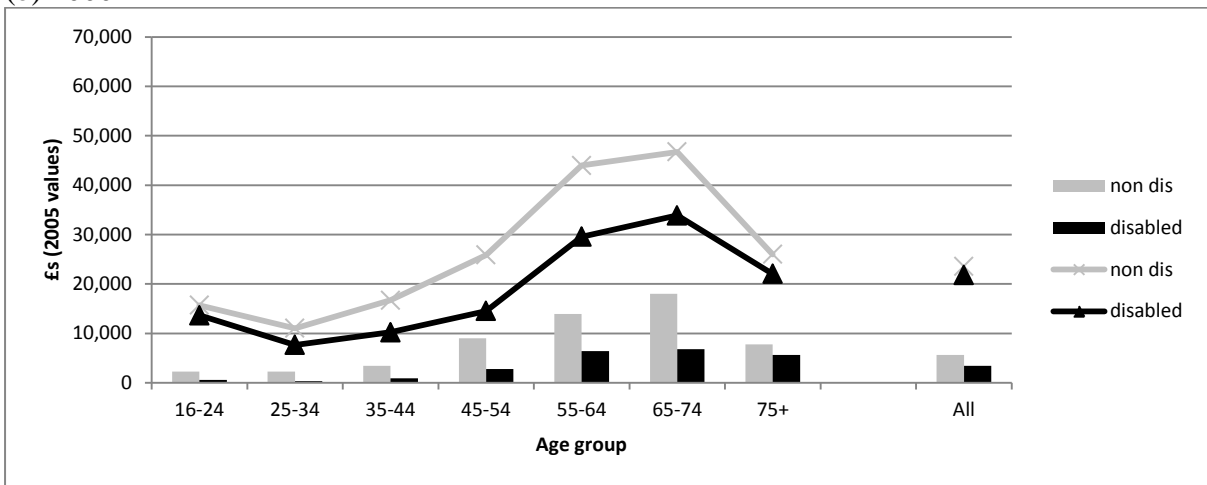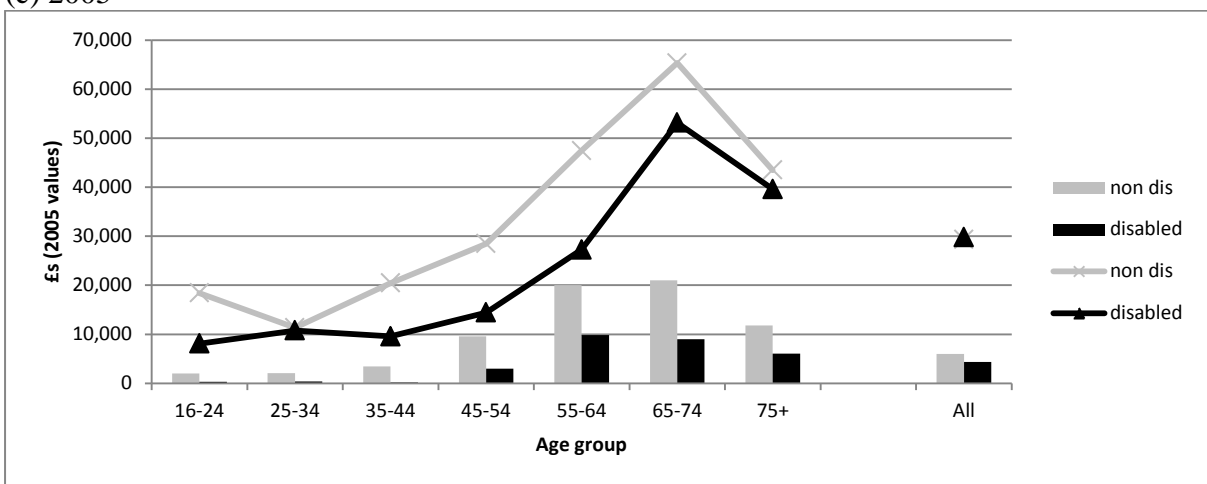
(a) 1995

(b) 2000

(c) 2005

Source: British Household Panel Survey
Note: Data are weighted

Figure 7: Individuals: Total household financial debt by own age and disability status (medians – columns; means – lines)

(a) 1995
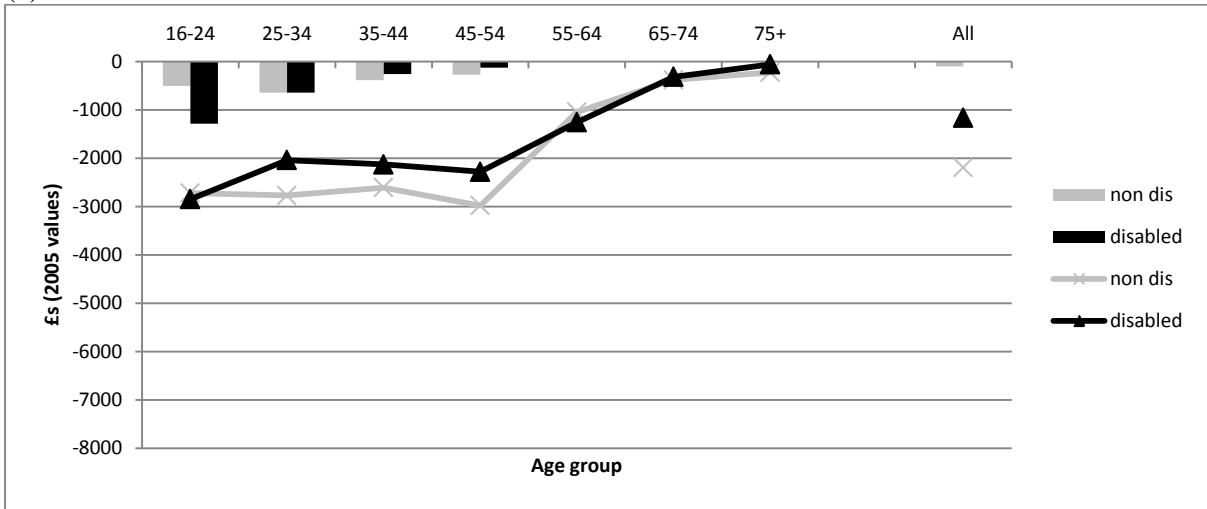
(b) 2000
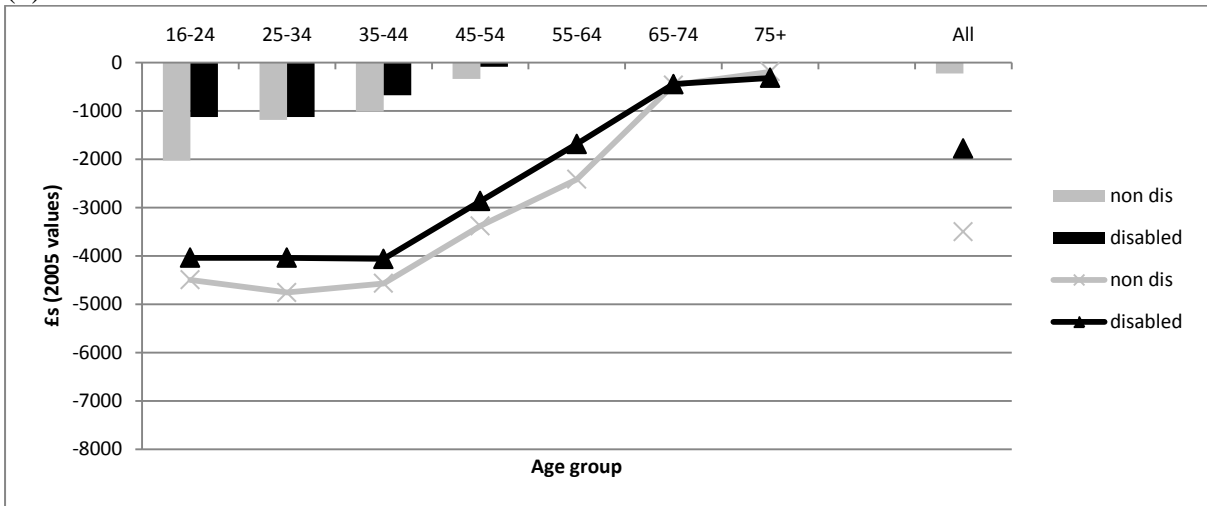
(c) 2005

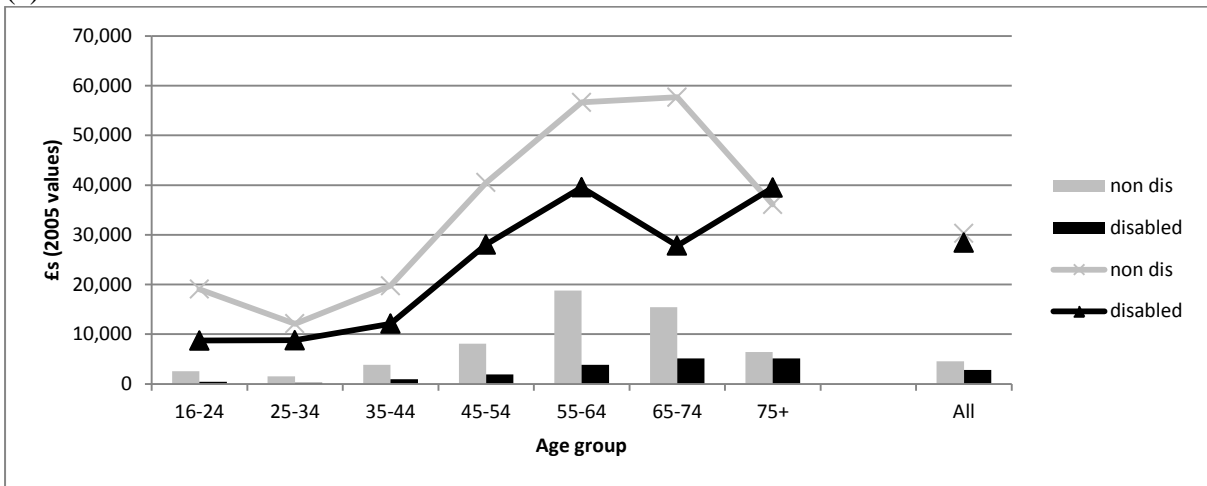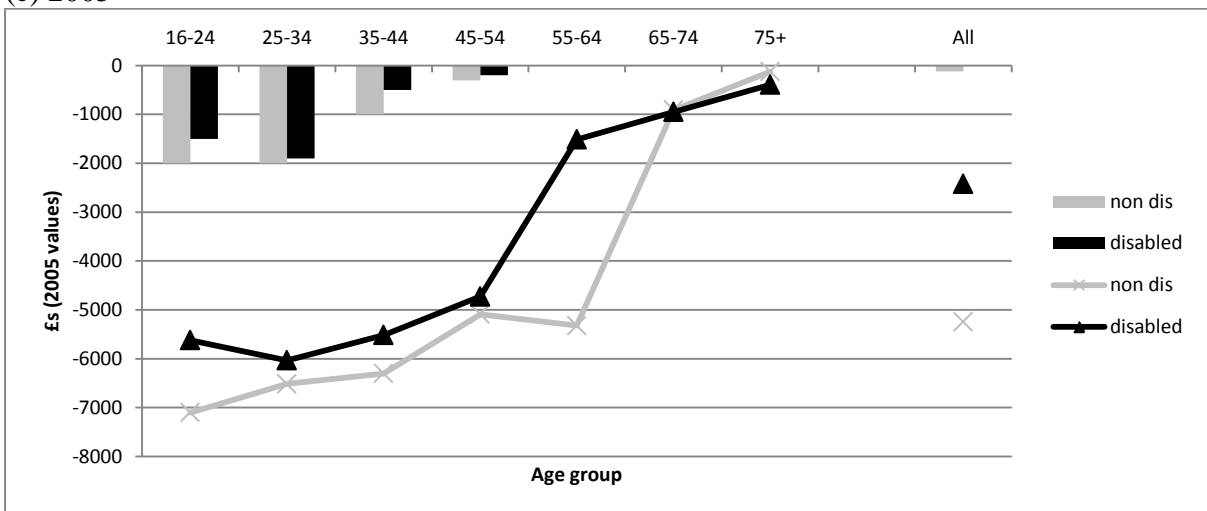Source: British Household Panel Survey
Note: Data are weighted

The Wealth and Assets Survey 2008/10

The Wealth and Assets Survey is a dedicated wealth survey with a much larger sample size than the BHPS and better coverage of high wealth households and therefore more representative of the population and wealth holdings. The WAS has a more comprehensive coverage of wealth, collecting information on a larger number of wealth components, in particular the inclusion of cash in financial assets, and identification of physical wealth and private pension wealth. Not only are we able to look at a wider range of wealth components but the overall measure of wealth is more comprehensive including cash, physical and pension wealth; none of which are included in the BHPS measure of total net wealth. Here we present the findings for the most recent wave of WAS (wave 2) conducted in 2008/10. The results for 2006/08 are available from the author on request. We focus on the individual level of analysis using individuals' own disability status and household level measures of wealth and debt.

The first figure shows the profiles of mean and median total household wealth (see definition in Box 4) by disability status (Figure 8). The more comprehensive measure of wealth than that available in the BHPS is reflected in the higher average wealth values shown. Looking first at the mean and median values for all individuals over the age of 16 it is clear that average levels of total household wealth are higher for non-disabled people than for disabled people but the age profiles show that these overall average figures mask the fact that in the key wealth accumulation ages the gaps between disabled and non-disabled individuals are much greater than the all-age average. This is counterbalanced by the fact that at older ages (65+ years) the gap between these two groups is much lower. The absolute gap in median total wealth between all disabled and non-disabled people aged 16 years and older is approximately £98,000, while the gap in median total household wealth between disabled and non-disabled people aged 55-64 is approximately £303,000 (the gap in mean total household wealth is £367,000). In Figure 2 above it was shown that the incidence of disability is higher among older age groups and the lower gap in average wealth holdings between disabled and non-disabled people is driven by the greater heterogeneity in the financial histories of older disabled people.

**Figure 8: Individuals: Total net household wealth (own disability status) –
(medians – columns; means – lines)**
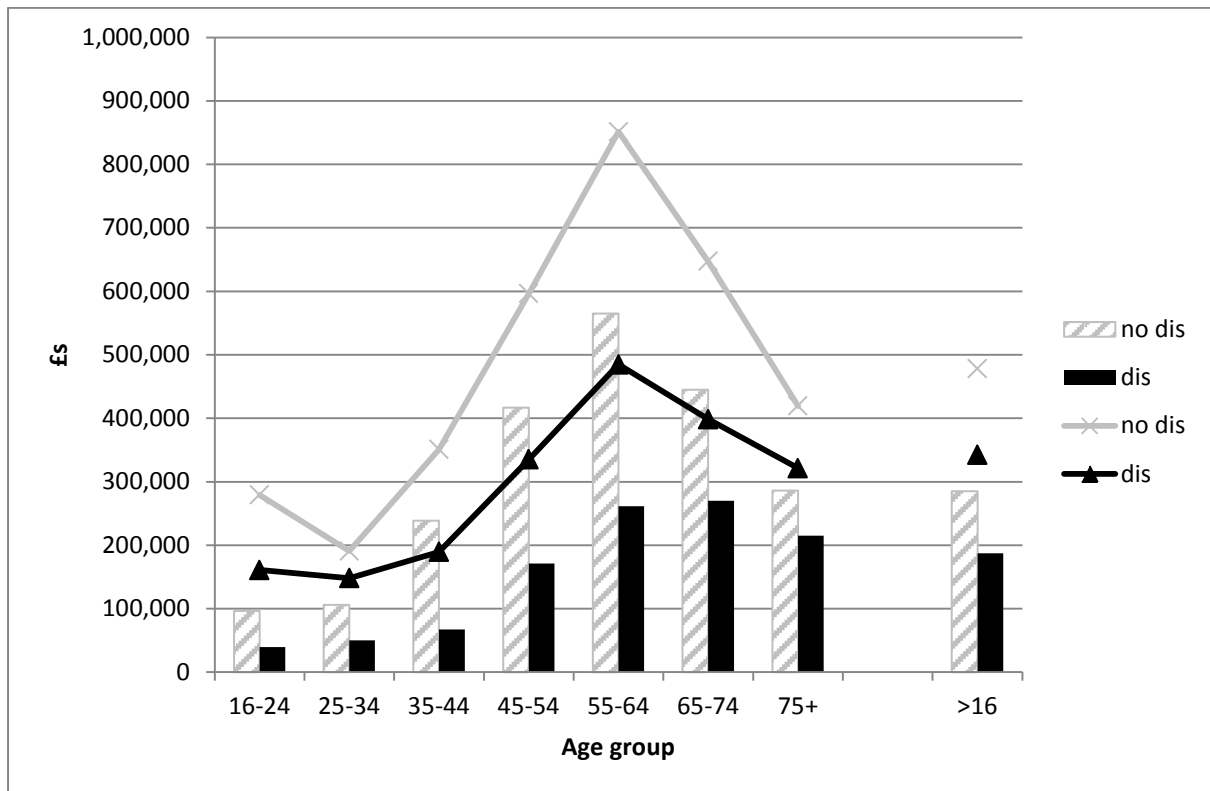
Source: Wealth and Assets Survey, 2008/10.
Notes: Wealth is expressed in contemporaneous values. Data are weighted.

Next we look at the different components of household wealth. Figure 9 shows the profiles for net financial household wealth for individuals by their disability status. The gaps between the mean and median values illustrate the skewed nature of the financial wealth distribution where wealthier households hold disproportionately large amounts of total financial wealth. The figure also shows the very low absolute and relative levels of net financial household wealth of disabled people, particularly in the critical wealth accumulation stage of the lifecycle (35-64 years). Again we note that the all-age average gaps mask important differences over the lifecycle and under-estimate the gaps evident in the age groups between 35 and 64.

**Figure 9: Individuals: Net financial household wealth (own disability status) –
(medians – columns; means – lines)**
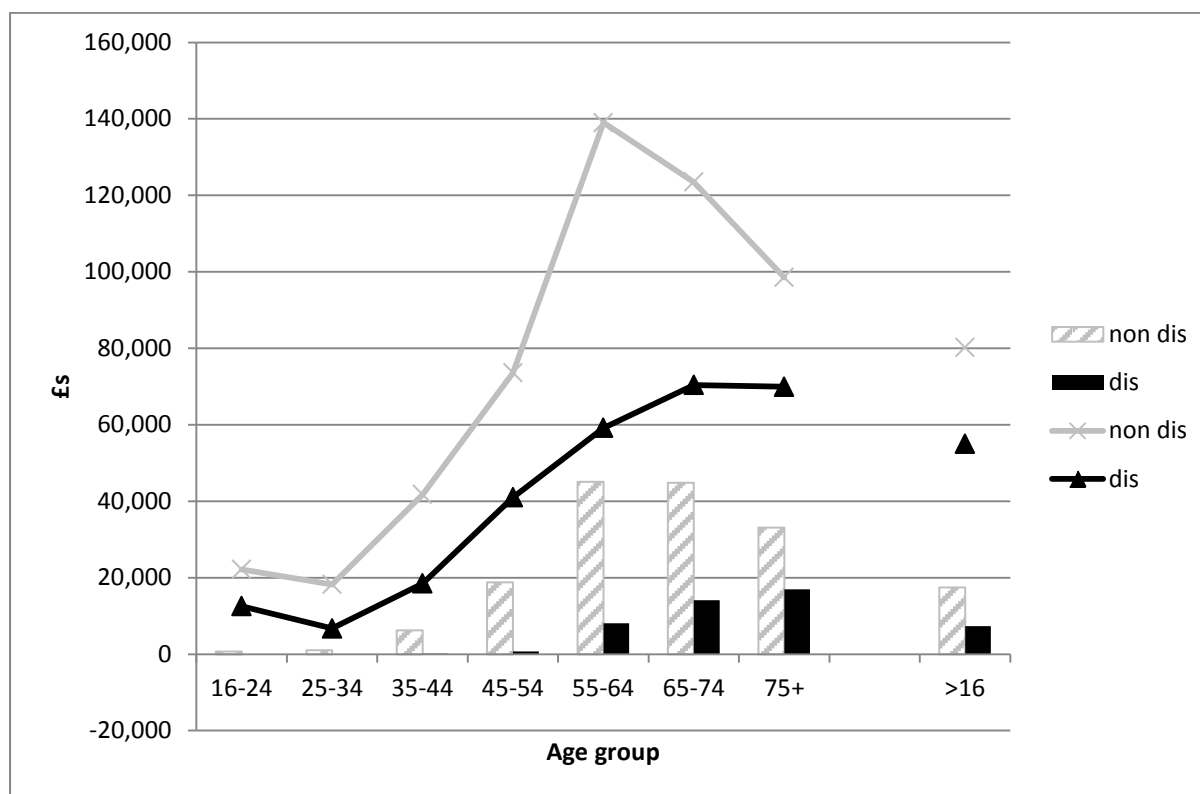
Source: Wealth and Assets Survey, 2008/10
Notes: Wealth is expressed in contemporaneous values. Data are weighted.

This is also the case for property household wealth (Figure 10). For property household wealth the all-age median levels for disabled people is £108,000 and £138,000 for non-disabled people (an absolute gap of £30,000) (Figure 10(a)). However, this conceals the fact that in the three age groups under the age of 45, median property household wealth is zero for disabled people. This means that over half of all disabled people in this age group live in households with no property wealth. In contrast median household property wealth for non-disabled people in the 35-44 age group is around £88,000, £24,000 in the 25-34 age group and £12,000 in the 16-24 age group. Figure 10(b) focuses on the property household wealth among home owning households and allows us to deduce that part of the difference shown in Figure 10(a) is due to the fact that disabled people are less likely to live in owner occupied housing (and therefore have zero property wealth unless their household has other real estate investments) and among home owning households the value of property wealth is lower for disabled people than for non-disabled people at the mean and the median. The higher wealth at the median for young disabled people relative to non-disabled people is due to the fact that young disabled people are more likely to live in the parental home and these figures relate to the household wealth of their parents.

Figure 10: Individuals: Total property household wealth (own disability status) – (medians – columns; means – lines)
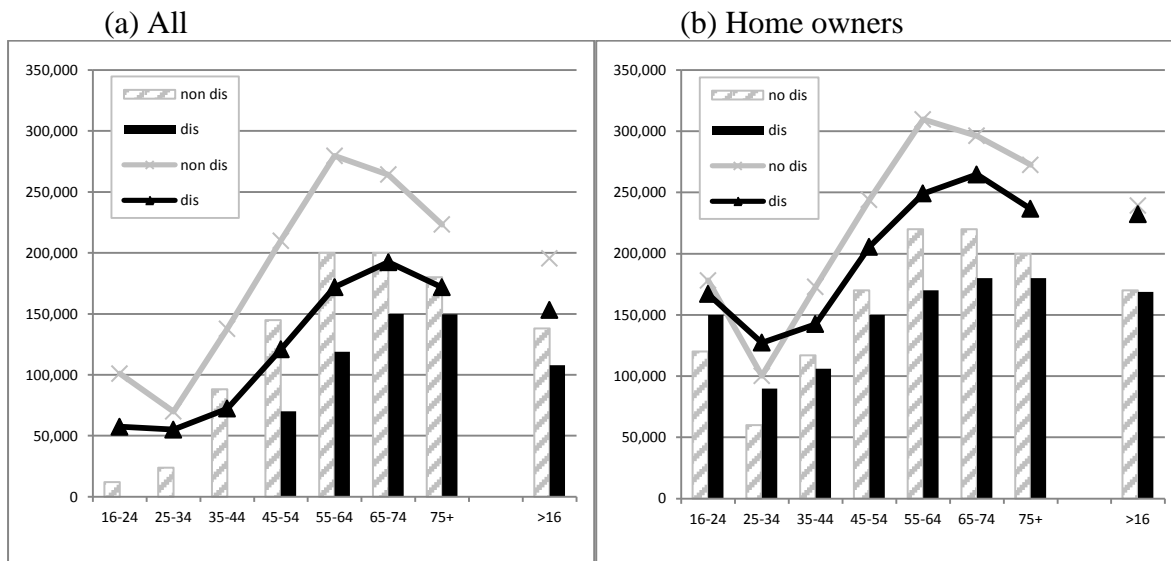
(a) All	(b) Home owners

Source: Wealth and Assets Survey, 2008/10
Notes: Wealth is expressed in contemporaneous values. Data are weighted.

The WAS also collects information on private pension wealth. There is no estimate of the value of State pension wealth. Pension wealth is accumulated over the working life and then used to finance retirement income, therefore we would expect to find that pension wealth increasing over the working life (although, as noted earlier, cohort effects can affect the cross-sectional age profiles). Indeed this is what we observe in Figure 11 and the fact that we observe the greatest absolute gaps in median (£75,000) and mean (£125,000) values of private pension wealth between disabled and non-disabled people in the 55-64 age group reflects the fact that their working lives have not provided disabled people with the same opportunities to amass private pension wealth and this has serious implications for their financial well-being in retirement.

**Figure 11: Individuals: Total private pension wealth (own disability status) – (medians – columns; means – lines)**
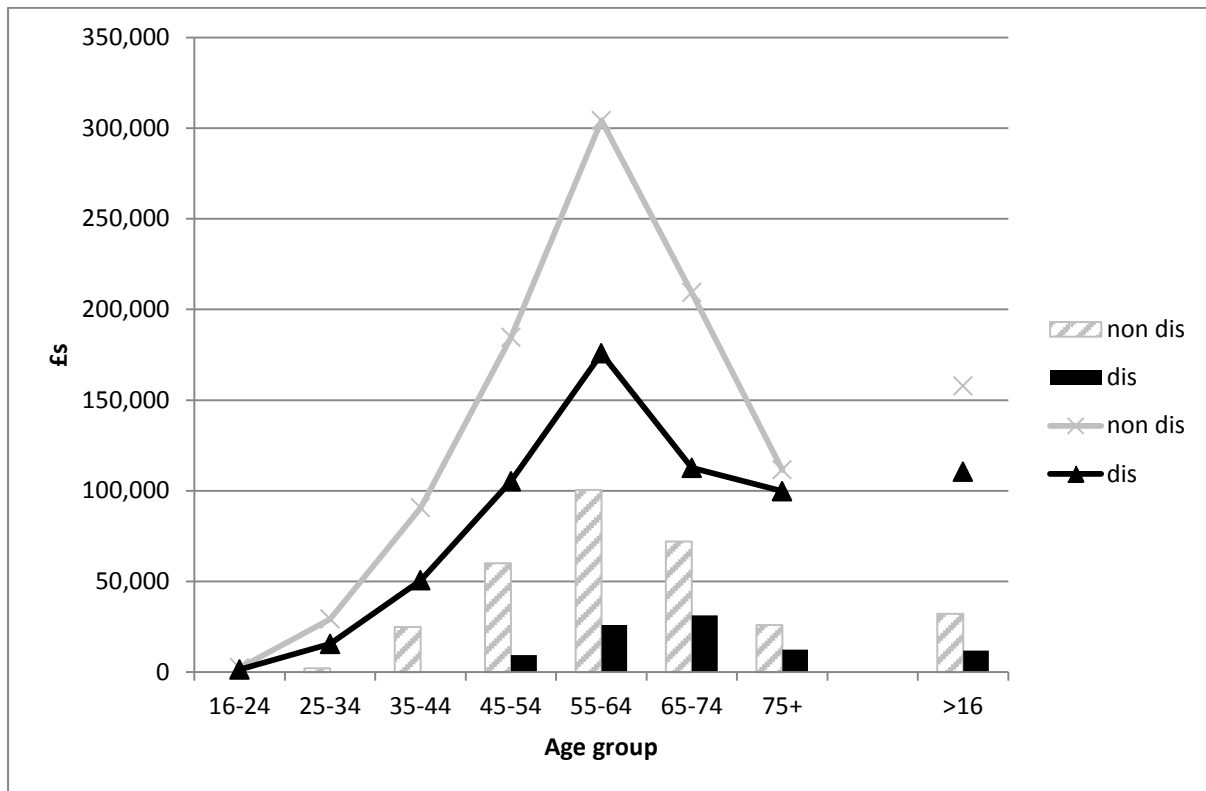
Source: Wealth and Assets Survey, 2008/10
Notes: Wealth is expressed in contemporaneous values. Data are weighted.

The final wealth component we examine is physical wealth (Figure 12). Physical household wealth, as described in Box 4, is the value of the contents of the home and other properties, collectables, valuables and vehicles, etc. As physical wealth is reported in banded values by WAS respondents, ONS advise against computing medians so in line with their guidance we only report mean values of physical household wealth. Like all other wealth components examined in this paper, disabled people record lower average values of physical wealth than their non-disabled counterparts both across all ages (16+ years) and within each age group. The gap between the means for these two groups across all ages is £9,000 and at the peak of wealth holding at age 55-64 years the gap is £17,000.

Figure 12: Individuals: Physical household wealth (own disability status) - means
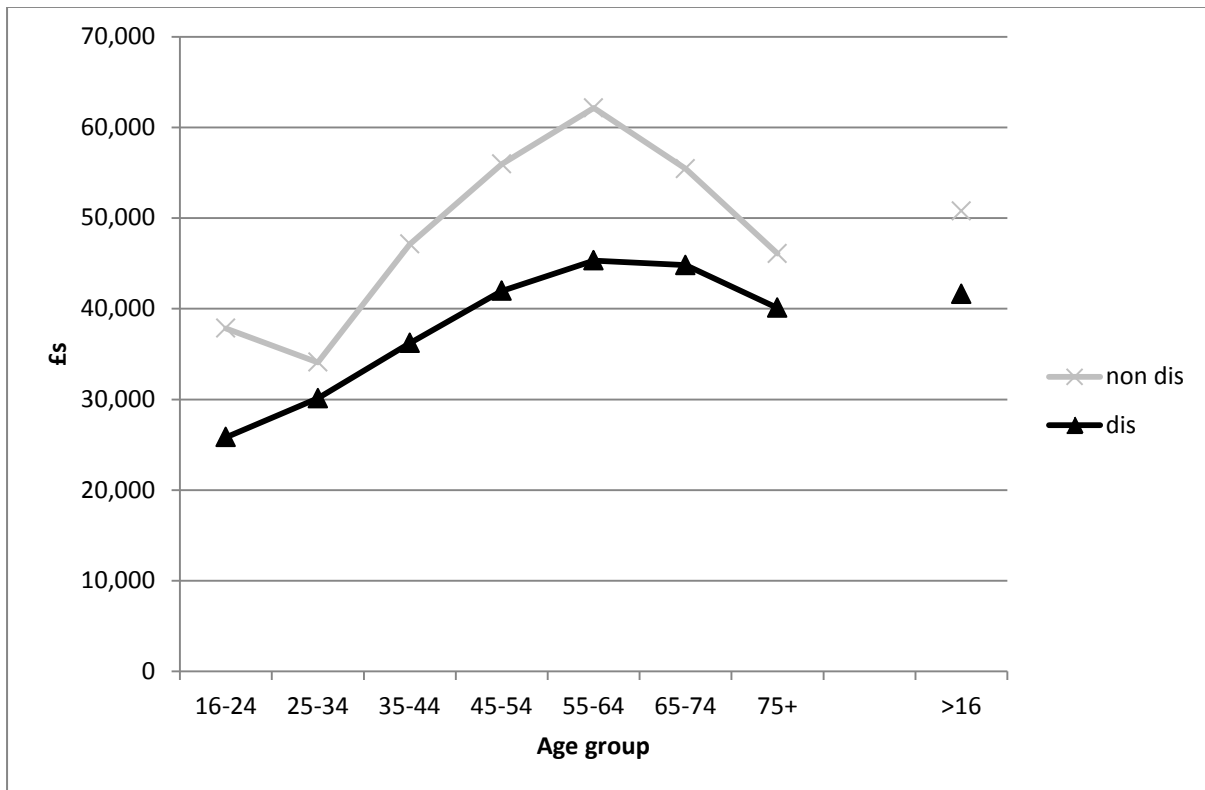
Source: Wealth and Assets Survey, 2008/10
Note: ONS advise against computing medians for physical wealth due to banded nature of reported values and imputation of final physical wealth values. Wealth is expressed in contemporaneous values. Data are weighted.

8.   Longitudinal analysis

The cross-sectional profiles shown so far are informative about the relationship between disability status and age-wealth profiles at a point in time and how these profiles have changed over time. While they are likely to be indicative of how average wealth changes with age, cohort effects and time effects could mean that the actual shape of individuals' lifetime profiles may differ from the cross-sectional age profiles. As the BHPS is a longitudinal survey, following the same individuals and households over time, it is possible to track the age groups across years – for example, the 25-34 age group in 1995 will be aged 35-44 in 2005 – to provide an indication of how wealth has evolved over time for different age cohorts. However, the dynamics of disability mean that the characteristics and composition of the groups may change over time. It is possible to compute true longitudinal profiles by linking the BHPS individual records over time. This allows us to compare the actual wealth profiles of individuals by their disability status at a point in time with individuals who are disabled/not disabled over longer periods of time. All of the analysis in this section is conducted at the individual level using household level measures of wealth.[4]

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[4]   The data used in this section are unweighted. The cross-sectional and longitudinal weights for

Figure 13 shows the age profiles of median net wealth in 2005 for three different groups. The first column in each age group shows median net wealth in 2005 for people who were disabled in 1995 (wave 5); that is the median net wealth by age groups for people who were defined as being disabled 10 years earlier irrespective of their disability status in 2005. Age is defined in 2005. The second column shows the median net wealth for people who were known to be disabled in 1995 and 2000 (wave 10) and the final column shows the median net wealth of people who were known to be disabled in 1995, 2000 and 2005. The results are very striking. Focusing first on individuals under the age of 55 in 2005, it is clear that household net wealth in 2005 is negatively related to disability persistence. Household net wealth in 2005 was lowest for people who were disabled in 1995, again in 2000 and also in 2005. For the 45-54 age group this amounted to a difference at the median of around £83,000. Turning to individuals aged over 55 in 2005, although a negative gradient by disability longevity exists, it is not nearly as steep as that observed in the younger age groups. This is likely to be driven by the higher incidence of disability at older ages and while we know that there is a positive relationship between low income and risk of disability onset (Jenkins and Rigg, 2004), the group of individuals with disabilities have more heterogeneous financial histories than younger age groups to the extent that average wealth holdings are higher. What is clear is that long term disability (as it is defined here), particularly during the crucial wealth accumulation stage of the lifecycle (35-64 years), has a strong negative impact on household wealth. The longitudinal information shows that there is a clear accumulation of disadvantage in wealth associated with longer term disability status.

Figure 14 focuses on individuals not classified as disabled, showing the age profiles of median net wealth in 2005. The first column in each age group shows median net wealth in 2005 for people who were not disabled in 1995 irrespective of their disability status in 2005. A comparison with the information in Figure 13 shows that disabled people have much lower net wealth ten years later than non-disabled people irrespective of whether or not they remain disabled over the same period. Two further groups are identified: people who were not disabled in 1995 and 2000 and people who were not disabled in 1995, 2000 and 2005. The differences in median household net wealth within age groups across these three groups are less than those observed for disabled people but it does indicate that there is an accumulation of advantage in wealth associated with remaining disability free over longer periods of time.[5] That is to say that people with the highest median net wealth within each age group are those who were not classified as disabled in 1995, 2000 and 2005 and the group with the lowest median household net wealth are people who are classified as disabled in 1995, 2000 and 2005. It is also interesting to note that there is not the stark divide between

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the BHPS were designed for the whole sample not the restricted sample of individuals with complete wealth data and longitudinal records. We therefore chose to conduct the analysis on the raw data as it is not clear that the weighted data would produce a more accurate picture.

[5]   We are not suggesting here that either group is continuously disabled or non-disabled as we only observe their status at three points in time each of which are five years apart.

the under 55 and over 55 age groups in the non-disabled group as that observed among disabled people.

The information contained in these two figures can be used to compare the wealth holdings of long-term disabled with long-term non-disabled. The penalty for being long-term disabled (individuals who are currently disabled who were also disabled 5 and 10 years previously) in the 45-54 age group in 2005 with their counterparts who were long-term non-disabled is very large; estimated in these figures to be £133,400 (in 2005 values).

Figure 13: Individuals: Net wealth in 2005 for people who were disabled in 1995
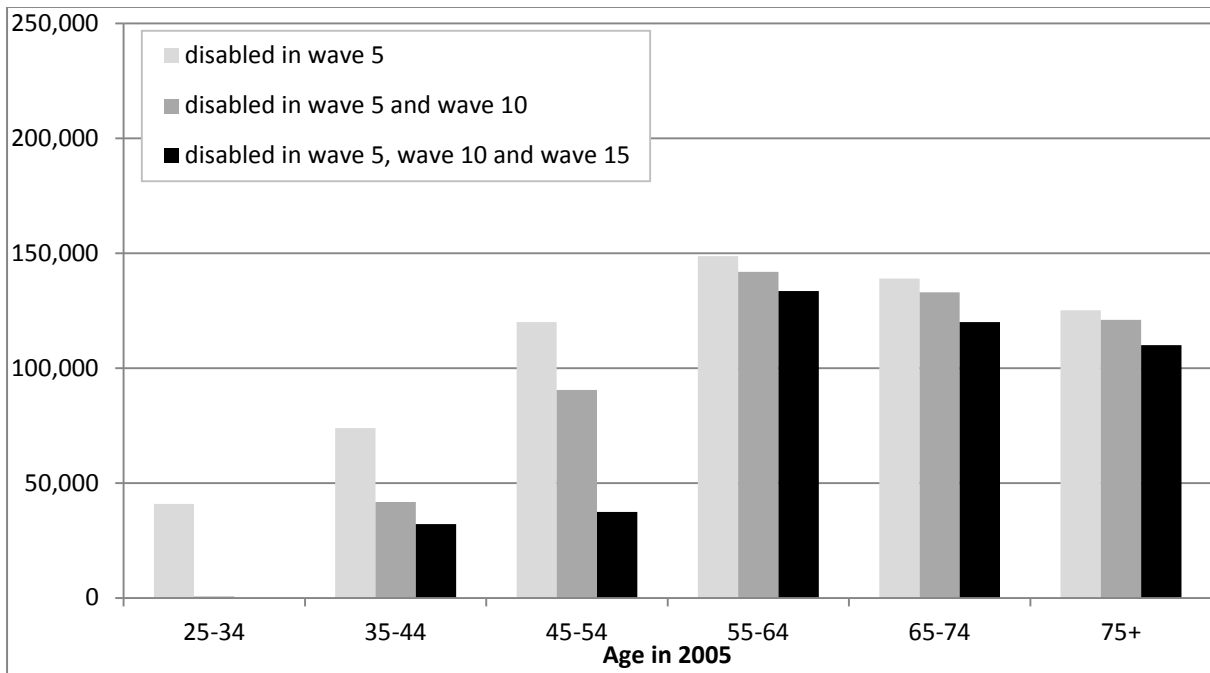
Source: British Household Panel Survey

Figure 14: Individuals: Net wealth in 2005 for people who were not disabled in 1995
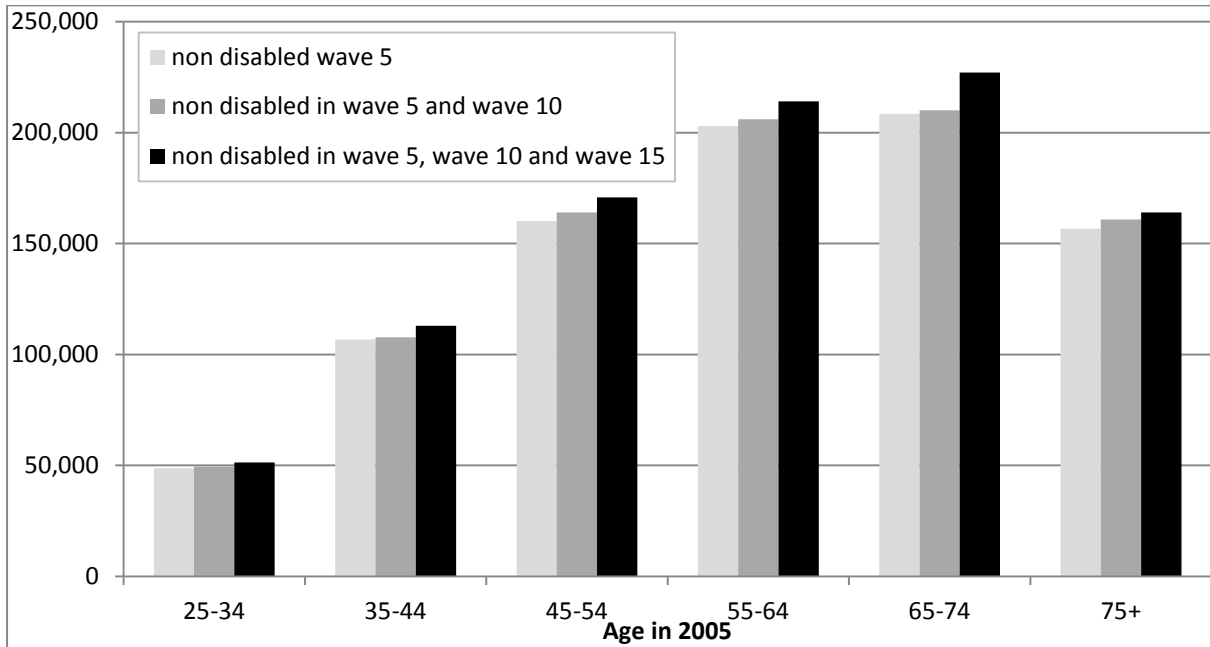
Source: British Household Panel Survey

The next pair of figures reproduce the same type of longitudinal analysis but this time using net financial household assets as the measure of wealth. Looking first at people who were disabled in 1995 (Figure 15), median levels of net financial assets are negative (in other words over half of all disabled people in this age group have financial liabilities that exceed their financial assets at the household level) for those under the age of 45 in 2005 and only marginally positive for the 45-54 age group. In the 55-64 age group, while net financial assets at the median are positive, there is a negative gradient as lower values of net financial assets are associated with the number of years in which individuals are disabled. The older age groups are affected by the greater incidence of disability in older ages and later onset of disability leading to greater heterogeneity in asset accumulation histories.

The reverse is found for people who were not disabled in 1995 (Figure 16). While net financial assets are low or even non-existent, people aged under 45 in 2005 who were not disabled in 1995 were in a better financial position than people who were disabled. People in the 45-54 age group have positive levels of net financial household assets at the median in 2005 (around £6,000). Those who are also classified as not disabled in 2000 and 2005 have increasingly higher median levels of net financial assets in 2005 showing an accumulation of advantage.

Figure 15: Individuals: net financial assets (savings and investments) in 2005 for people disabled in wave 5 (1995)
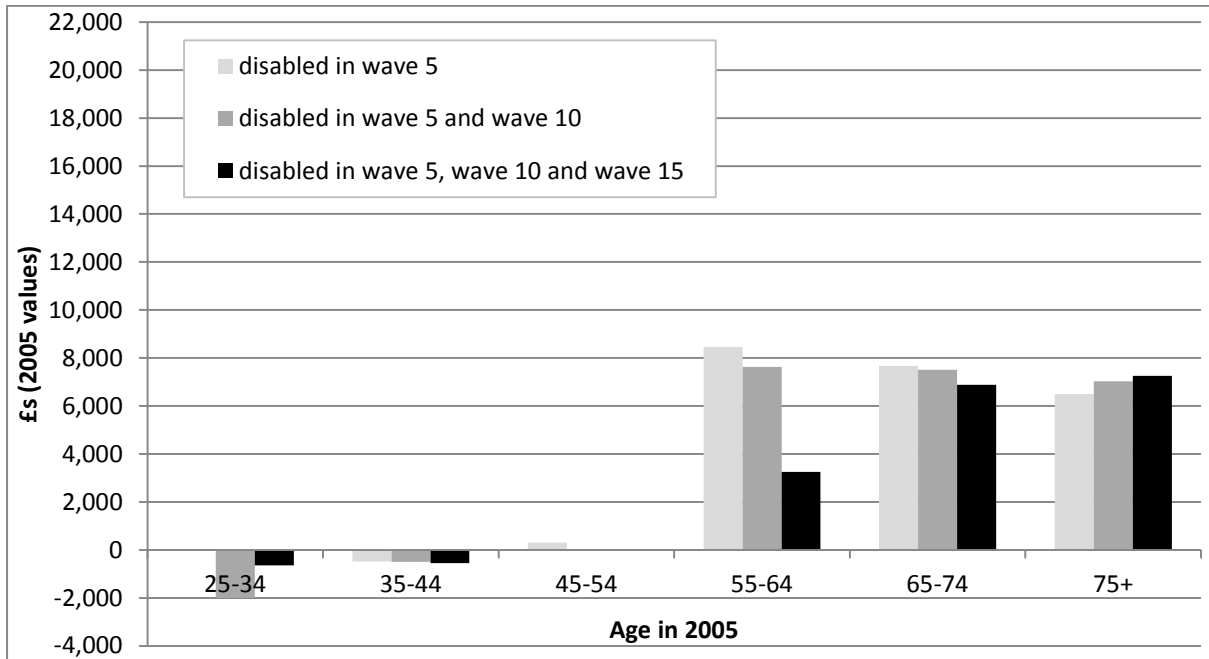
Source: British Household Panel Survey

Figure 16: Individuals: Net financial assets (savings and investments) in 2005 for people not disabled in wave 5 (1995)
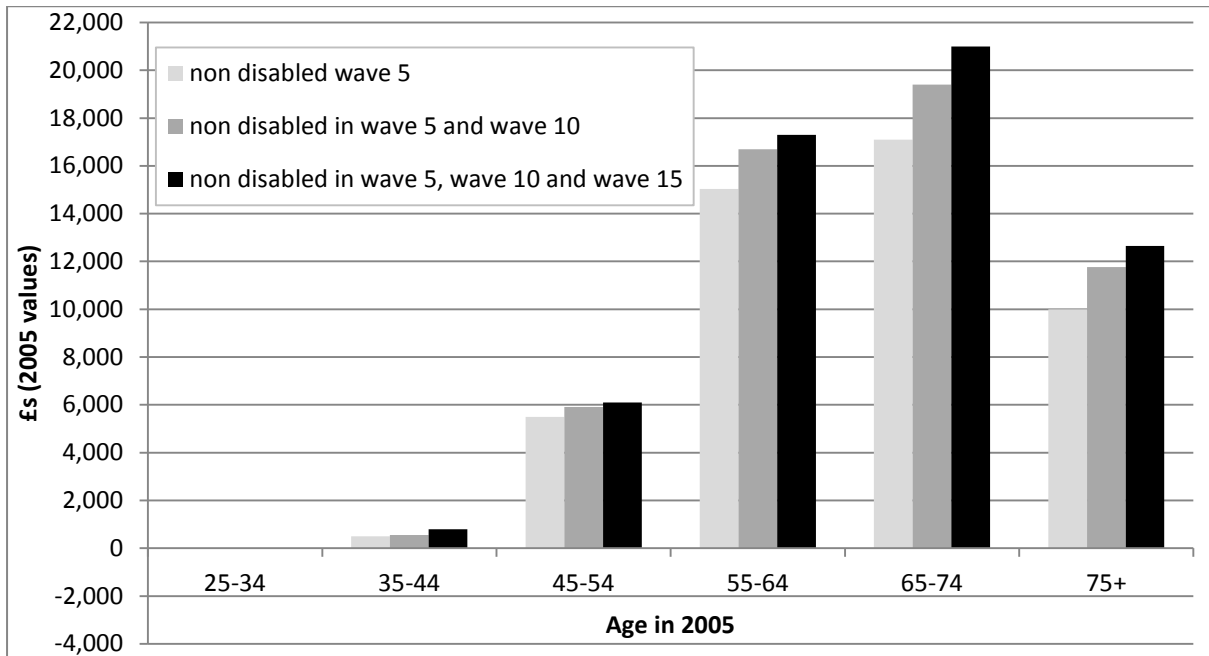
Source: British Household Panel Survey

9.   Modelling asset holdings

Wealth holdings are determined by a wide range of factors. People vary in both their ability and their desire to accumulate assets and these are affected by family background, tastes and preferences, earning power, the necessary level of expenditure needed to lead a life of certain standard and relationships. Economic climate, returns to investments shaped by changing asset prices, bequests and inheritances also affect how the value of wealth holdings change over time. We have highlighted the lifecycle pattern of wealth accumulation and depletion and how average differences between population groups can mask important differences over the lifecycle between groups. In this section we present some simple statistical analysis from models of wealth holdings (total household net wealth and net financial wealth) controlling for a range of personal and household characteristics. This exercise provides estimates of how much the disability 'wealth penalty' can be explained by personal and household characteristics and the part that is not explained by these factors.

The Wealth and Assets Survey (2008/10) data is used for this analysis which is conducted at both the individual and household levels. Starting from the simplest model which just includes a disability indicator variable the models are gradually built up adding more explanatory variables to assess their effect on explaining the disability penalty and also to understand how they relate to wealth holdings.

Table 1 contains the regression results for six models estimating the effect of disability status on total household wealth. These models are estimated at the individual level using respondents' own disability status and the wealth of the household in which they live. Model 1 contains only the disability status indicator, and the estimated coefficient on this variable predicts that in 2008/10 disabled people lived in households with around £136,000 lower total household net wealth than non-disabled people. The constant shows that the mean value for people without disabilities (according to this definition) is £478,154 and these figures are consistent with those shown in Figure 8. Model 2 adds controls for age. The estimated coefficients on the age variables reflect the age profiles shown earlier in Figure 8. Average wealth of households in which 25-34 year olds live is lower than for 16-24 year olds, no doubt reflecting the fact that we use a measure of household wealth and not personal wealth and many of the 16-24 year olds are still living at home with their parents. As they leave home and live independently they form households with initially lower wealth than that of their parents. In older age groups, wealth increases with age peaking in the 55-64 age group before declining.

The inclusion of age as a control variable leads to an increase in the estimated average difference in wealth holdings between disabled and non-disabled people. This is because of the greater incidence of disability in older age groups where typically, due to lifecycle factors, wealth holdings are higher and the fact that where onset of disability occurs later in life, individuals have been in a better position to accumulate assets. After controlling for age it is estimated that in 2008/10 disabled people lived in households with £217,000 lower total household wealth than non-disabled people.

Adding further controls for marital status and presence of dependent children (Model 3) reduces the size of the disability penalty to £184,000. This is because disabled people are more likely to be in a status associated with lower wealth holdings. Married individuals and those in a civil partnership have the highest wealth holdings reflecting the fact that here we are modelling household wealth and where there are more adults present in a household there are more people contributing to household wealth. Cohabiting couples and people who have separated have the greatest difference (lowest average wealth) after controlling for age effects. Having dependent children is associated with higher average total wealth. While we are not able to identify the reason for this, likely explanations are that parents with dependent children have an increased need to hold a store of wealth or it may reflect greater housing wealth arising from greater housing needs (size of property, the need to live in the catchment area of good schools, etc.). There is no significant difference in household wealth holdings between men and women (Model 4).

Next we control for education (Model 5) and Socio-Economic Class (NS-SEC) (Model 6). Education affects individuals' earning potential and their income and, conceivably, their investment choices and decisions. We would therefore expect to observe a positive relationship between education level and household wealth. We also know from previous studies that, on average, disabled people have lower educational qualifications and therefore we anticipate that part of the difference in wealth holdings between disabled and non-disabled people in the raw data will be due to differences in educational qualifications between these two groups. The results from Model 5 show that this is the case.

Adding controls for educational qualifications reduces the difference in disabled and non-people's household wealth holdings to £130,000. This suggests that around £50,000 worth of the difference in wealth between these two groups is due to differences in their education. As education is an important determinant of people's employment prospects and earning potential this highlights the knock-on effects. We are only able to include three broad education categories in the analysis due to the limited information collected in the WAS. Finally, additional controls for individuals' socio-economic class explain some of the disability wealth penalty, reduced it to £108,000. There is a strong social gradient in household wealth and the fact that the disability penalty falls after controlling for NS-SEC can be explained by disabled people being in socio-economic groups associated with lower wealth. As classification to NS-SEC is on the basis of individuals' occupation and employment status this variable will reflect respondents' position in the labour market.

Table 2 contains the model estimates for net financial wealth. This measure gives an indication of individuals' access to liquid assets and is an important indicator of financial well-being. Model 1 includes only the disability status indicator which shows that disabled people live in households with, on average, £15,500 lower net financial wealth than non-disabled people. The constant values show that on average non-disabled people have net financial household wealth of £50,791. Controlling for age (Model 2) leads to an increase in this difference to £30,800 – i.e. the difference is

twice as high once age has been controlled for – this is because there is a higher incidence of disability among older people who have higher age-related net financial household wealth holdings. Controlling for marital status and dependent children (Model 3) reduces the difference a little to £26,600. Married people and those in a civil partnership have the highest net financial household wealth, again reflecting the greater number of adults contributing to wealth holdings. Out of the groups of individuals not currently living in a union, individuals who are divorced have the lowest net financial household wealth relative to married people. Model 5 includes additional controls for qualification level and as with total household wealth, education explains some of the difference between net financial household wealth of disabled and non-disabled people with the gap falling to around £19,000. This is because net financial wealth increases with qualification levels and disabled people are less likely to hold higher level qualifications than non-disabled people affecting their earnings capacity and ability to accumulate wealth. Finally, Model 6 includes controls for socio-economic class (NS-SEC) which shows a strong social gradient in net financial wealth. Disabled people are more likely to be in lower socio-economic classes and this explains some of the observed lower net financial wealth holdings of disabled compared to non-disabled people: the difference falls to around £16,400.

Table 1: Individuals: OLS regressions: Total household wealth – Wealth and Assets Survey wave 2 (coeffs)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
No limiting disability												
Limiting disability	-136021	*	-217192	*	-183993	*	-183928	*	-130156	*	-108091.6	*
16-24 years												
25-34 years			-78639.3	*	-132814	*	-133690	*	-230549.7	*	-261971.7	*
35-44 years			73037.98	*	16467.28		15120.1		-48374.98	*	-85763.11	*
45-54 years			301121.9	*	231141.6	*	229906.5	*	192860.6	*	159980.2	*
55-64 years			521372	*	431428.2	*	430242.4	*	423512.1	*	388756.4	*
65-74 years			349488.7	*	263206.6	*	261882.1	*	299415.4	*	261386.7	*
75+ years			192916.8	*	161889.8	*	160503	*	228846.6	*	171810.7	*
Married												
Cohabiting					-172962	*	-173083	*	-150501.7	*	-136975.7	*
Single					-181894	*	-182461	*	-158186.1	*	-138896.3	*
Widowed					-287508	*	-284287	*	-240985.9	*	-223360	*
Divorced					-377105	*	-375194	*	-349630.1	*	-338984.5	*
Separated					-324181	*	-323221	*	-296948	*	-272900.7	*
Civil partnership					118283.6	*	118620.9	*	7024.03		-296.45	
No dependent children												
Dependent children					48926.8	*	47628.5	*	32638.38	*	22923.87	*
Female												
Male							11076.5		-8308.11		-19727.62	*
No qualifications												
Quals less than degree									207500	*	139049.7	*
Degree or higher									534286	*	346738.2	*
Quals missing									81037.4		59592.8	
NS_SEC 1.1 Large employers and higher managerial												
NS-SEC 1.2 Higher professional											-129384	*
NS-SEC 2 Lower managerial and professional											-262859	*
NS-SEC 3 Intermediate											-320774.6	*
NS-SEC 4 Small employers											-343389.2	*
NS-SEC 5 Lower supervisory and technical											-464434.9	*
NS-SEC 6 Semi-routine											-463703.2	*
NS-SEC 7 Routine											-504995.4	*
NS-SEC 8 Never worked/Long term unemployed											-431585.4	*
NS-SEC not classified											-321744.8	*
Constant	478154.5	*	286334.3	*	363257.3	*	361116	*	155026.7	*	626826.3	*
R-squared	0.0045		0.0568		0.0779		0.0780		0.1156		0.1333	

Notes: * denotes statistical significance at the 5% level. Unit of analysis is the individual. These data are weighted using ONS supplied cross-sectional weights. N=29,608. Within sets of dichotomous variables, the variable shown in italics is the comparison group.

Table 2: Individuals: OLS regressions Net financial wealth – Wealth and Assets Survey wave 2 (coeffs)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
No limiting disability												
Limiting disability	-15501.6	*	-30772.8	*	-26569	*	-26562.4	*	-19073.64	*	-16357.75	*
16-24 years												
25-34 years			-1425.82		-5257.28	*	-5345.97	*	-19783.26	*	-22003.49	*
35-44 years			15470.67	*	12850.85	*	12714.43	*	3228.03		201.35	
45-54 years			36371.61	*	32921.79	*	32796.72	*	27023.02	*	24586.04	*
55-64 years			70668.87	*	65402.25	*	65282.18	*	63666	*	61053.86	*
65-74 years			63921.25	*	60151.1	*	60016.97	*	64427.02	*	61432.89	*
75+ years			52545.93	*	58010.58	*	57870.14	*	66246.9	*	60723.47	*
Married												
Cohabiting					-17052.8	*	-17065.2	*	-13791.17	*	-11548.61	*
Single					-15888.2	*	-15945.7	*	-12629.15	*	-10055.74	*
Widowed					-44794.8	*	-44468.6	*	-38500.68	*	-35965.36	*
Divorced					-48502.2	*	-48308.7	*	-44618.69	*	-43135.51	*
Separated					-44708.3	*	-44611.1	*	-40856.83	*	-38211.18	*
Civil partnership					8287.88		8322.04		-8262.21		-10494.11	
No dependent children												
Dependent children					6210.41	*	6078.94	*	3850.96		2929.48	
Female												
Male							1121.66		-1506.79		-4213.84	*
No qualifications												
Quals less than degree									25915.47	*	17375.51	*
Degree or higher									75190.61	*	50319.53	*
Quals missing									11894.52	*	8957.65	
NS_SEC 1.1 Large employers and higher managerial												
NS-SEC 1.2 Higher professional											-26508.38	*
NS-SEC 2 Lower managerial and professional											-51153.09	*
NS-SEC 3 Intermediate											-55624.95	*
NS-SEC 4 Small employers											-45900.87	*
NS-SEC 5 Lower supervisory and technical											-75354.22	*
NS-SEC 6 Semi-routine											-74835.81	*
NS-SEC 7 Routine											-80707.3	*
NS-SEC 8 Never worked/Long term unemployed											-60056.81	*
NS-SEC not classified											-46073.14	*
Constant	50791.01	*	19097.99	*	22665.78	*	22448.94	*	5234.91		68216.42	*
R-squared	0.0011		0.0186		0.0257		0.0257		0.0406		0.0486	

Notes: * denotes statistical significance at the 5% level. Unit of analysis is the individual. These data are weighted using ONS supplied cross-sectional weights. N=29608

The next set of models focus on estimating differences in wealth holdings where the unit of analysis is the household not the individual. In this analysis households are classified according to whether or not they have a disabled adult member. The personal characteristics used in the analysis relate to the household reference person and not necessarily the disabled person.

Table 3 contains the regression results for total household wealth. A comparison with the results in Table 1, where the unit of analysis is the individual, reveals that the disability effect at the household level is lower than at the individual level for models that only include controls for disability and age. This suggests that disabled people are more likely to be living in larger households (i.e. where there is more than one adult contributing to household wealth holdings) and this is verified by the fact that the estimated disability penalty at the household level is higher than at the individual level once controls have been included for marital status (the exception is Model 6 which also includes controls for NS-SEC status of household reference person).

Households with a disabled member have on average £116,000 lower total household wealth than households where none of the adults have a disability. Controlling for differences for age (household reference person) increases this penalty to £195,000, part of this is explained by differences in marital status of the household reference person (£188,000) and a considerable amount due to differences in the qualifications held by the HRP (£131,500) and their NS-SEC (£106,100).

Estimates of the net financial household wealth disability penalty appear greater at the individual level than household level effects. This simply arises because wealthier households typically have more adults contributing to wealth accumulation increasing the estimates at the individual level. Households with a disabled member have net financial wealth £12,000 lower than households with no disabled adult members who on average have £46,900 net financial wealth. This increases to £25,400 once differences in age have been controlled for (age of the household reference person) and drops a little after controlling for the marital status of the HRP and presence of dependent children (to £24,700). Qualifications held by the HRP explain even more of the difference, which falls to £16,600. Differences in the socio-economic class of the household reference person also explain some of the difference (£13,300).

Overall the statistical analysis has shown that the household wealth-disability penalty observed in the raw data is even higher after controlling for differences in age between disabled people and non-disabled people. Part of the differences is due to compositional differences in terms of marital status (i.e. the presence of other adults in the household). Although detailed information on educational qualifications is not available in the WAS, controls for three levels (no qualifications, qualifications less than degree level and degree level qualifications and above) reduced the size of the disability-wealth penalty. This shows that lower average levels of education among disabled people contributes to the disability-wealth penalty. Similarly part of the disability-wealth penalty is explained by their socio-economic status (NS-SEC) reflecting the lower average quality of the jobs held by disabled people.

Table 3: Households: OLS regressions Total household wealth – Wealth and Assets Survey wave 2 (coeffs) (HRP)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
No limiting disability												
Limiting disability	-115755	*	-195302.4	*	-188285.7	*	-187066.1	*	-131470.4	*	-106116.7	*
16-24 years			-393710.3	*	-392127.1	*	-384861.6	*	-442256.9	*	-374524.4	*
25-34 years			-282842.4	*	-340913.8	*	-338823.5	*	-493978.2	*	-462170.3	*
35-44 years			-130429.2	*	-177593.8	*	-176752.4	*	-295231.9	*	-272654.6	*
45-54 years			89261.68	*	37279.4	*	38090.37	*	-56581.01	*	-33223.16	*
55-64 years			330525.1	*	263926.9	*	264944	*	193401.9	*	216475.5	*
65-74 years			174686	*	112607.4	*	112539.8	*	81430.16	*	100772.6	*
75+ years												
Married												
Cohabiting					-148696.1	*	-144878.8	*	-116669.5	*	-98391.59	*
Single					-264549.3	*	-257371.7	*	-220667.5	*	-185675.7	*
Widowed					-326761.9	*	-310880.8	*	-235491.4	*	-201242.4	*
Divorced					-397762.4	*	-385245.2	*	-333939.9	*	-306107.6	*
Separated					-344856.4	*	-334578.9	*	-287526.7	*	-245944.2	*
Civil partnership					143436.8		154161.6		22637.72		-2975.56	
No dependent children												
Dependent children					43310.25	*	39682.47	*	10096.04		-2430.90	
Female												
Male							26352.76		21497.15		13376.97	
No qualifications												
Quals less than degree									*188979.4*	*	*119729.8*	*
Degree or higher									*529911.7*	*	*327979.1*	*
Quals missing									*119960.4*	*	*93972.21*	*
NS_SEC 1.1 Large employers and higher managerial												
NS-SEC 1.2 Higher professional											-134688.7	*
NS-SEC 2 Lower managerial and professional											-307826.4	*
NS-SEC 3 Intermediate											-371982.2	*
NS-SEC 4 Small employers											-396234.1	*
NS-SEC 5 Lower supervisory and technical											-487707.9	*
NS-SEC 6 Semi-routine											-493846.8	*
NS-SEC 7 Routine											-528385.2	*
NS-SEC 8 Never worked/Long term unemployed											-462055.9	*
NS-SEC not classified											-437648.9	*
Constant	444100.1	*	442455.8	*	572938.6	*	556785.5	*	416517.9	*	853043.5	*
R-squared	0.0034		0.0589		0.0914		0.0915		0.1308		0.1514	

Notes: * denotes statistical significance at the 5% level. Unit of analysis is the household. Weighted. N=18059

Table 4: Households: OLS regressions Net financial wealth – Wealth and Assets Survey wave 2 (coeffs) (HRP)

	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
No limiting disability												
Limiting disability	-12016.45	*	-25409.19	*	-24699.75	*	-24310.15	*	-16582.18	*	-13341.92	*
16-24 years			-61949.05	*	-69403.23	*	-67082.30	*	-73861.74	*	-66345.94	
25-34 years			-51180.13	*	-64352.22	*	-63684.49	*	-85009.40	*	-80446.28	*
35-44 years			-36964.47	*	-47320.38	*	-47051.60	*	-62972.67	*	-60053.03	*
45-54 years			-15675.9	*	-25962	*	-25702.94	*	-38309.10	*	-35370.25	*
55-64 years			19217.65	*	7526.82	*	7851.74		-1614.05		1342.24	
65-74 years			12587.81	*	2594.01	*	2572.42		-1378.11		1171.00	
75+ years												
Married												
Cohabiting					-16865.92	*	-15646.51	*	-11609.13	*	-8806.48	*
Single					-25558.69	*	-23265.83	*	-18239.13	*	-13359.98	*
Widowed					-48536.51	*	-43463.39	*	-33044.89	*	-28210.71	*
Divorced					-50453.83	*	-46455.29	*	-39145.23	*	-35434.19	*
Separated					-46605.94	*	-43322.84	*	-36662.72	*	-31894.44	*
Civil partnership					13511.61		16937.59		-2981.94		-7648.52	
No dependent children												
Dependent children					6893.48		5734.60	*	1436.42		317.66	
Female												
Male							8418.24	*	7859.22	*	5434.66	
No qualifications												
Quals less than degree									*22874.81*	*	*14537.76*	*
Degree or higher									*74229.27*	*	*47960.40*	*
Quals missing									*21575.94*	*	*16944.19*	*
NS_SEC 1.1 Large employers and higher managerial												
NS-SEC 1.2 Higher professional											-31389.97	*
NS-SEC 2 Lower managerial and professional											-58297.50	*
NS-SEC 3 Intermediate											-67920.05	*
NS-SEC 4 Small employers											-53237.95	*
NS-SEC 5 Lower supervisory and technical											-80624.89	*
NS-SEC 6 Semi-routine											-78531.13	*
NS-SEC 7 Routine											-84784.98	*
NS-SEC 8 Never worked/Long term unemployed											-64539.78	*
NS-SEC not classified											-65374.92	*
Constant	46931.18	*	64540.86	*	81601.11	*	76441.08	*	58504.25	*	128877.30	*
R-squared	0.0010		0.0194		0.0315		0.0319		0.0513		0.0629	

Notes: * denotes statistical significance at the 5% level. Unit of analysis is the household. Weighted. N=18059

10.   Summary of findings

It is well established that on average disabled people and the households in which they live face greater financial disadvantage in terms of income than their counterparts. What is less well understood is how they fare in terms of their wealth status. This is partly because reliable information on households' wealth holdings is much harder to find than is the case for income. In this study we attempt to fill this knowledge gap using social survey data for the UK. Information from the British Household Panel Survey (BHPS), which collected information on households' wealth holdings every five years, is used to examine the wealth status of households according to individuals own disability status in 1995, 2000 and 2005. Using longitudinal data from this survey it is possible to track the evolution of wealth holdings for these individuals and households by matching their records over time. The Wealth and Assets Survey (WAS) is used to provide a more up to date assessment (with survey data available for 2006/08 and 2008/10) and a more detailed assessment of the wealth and assets held by disabled and non-disabled people including private pension wealth and physical wealth. Statistical analysis is used to assess the average differences in wealth holdings between disabled and non-disabled people and households and how much of the difference can be accounted for by socio-economic characteristics and household status.

The empirical research presented in this paper has shown that disabled people and the households in which they live are at a disadvantage in terms of wealth holdings. Average values of household wealth holdings for disabled people are considerably lower than average values for non-disabled people but even these differences in average values underestimate the disability-penalty. The reason for this is two-fold. Firstly, there is a greater incidence of disability in older age groups who typically, due to lifecycle factors, have higher average levels of wealth than younger people. This inflates the all-age average wealth holdings of disabled people. Secondly, where the onset of disability occurs later in life these people are less disadvantaged as their ability to accumulate assets prior to retirement was much better than for people disabled from a younger age. This means that post retirement age the difference in average wealth holdings between disabled and non-disabled people is much lower than for younger age groups. The combination of higher incidence of disability in older ages and smaller gaps in average wealth holdings between older disabled and non-disabled people reduces the overall average difference between these two groups. This is demonstrated in the statistical analysis which finds that the average difference in household net wealth and financial assets between disabled and non-disabled people increases after controlling for age.

The disadvantage of disability is felt hardest where it is experienced during the key wealth accumulation ages of 35 to 64 years. This can be seen in the cross-sectional age profiles in 1995, 2000, 2005 and 2008/10. But it is the findings from the longitudinal analysis that are particularly stark as these demonstrate the accumulation of disadvantage that is experienced by people who are observed to be disabled after five and then ten year time periods. The longer an individual is observed to be

disabled, the lower their household wealth holdings over the key wealth accumulation stage of the lifecycle. Likewise there is an accumulation of advantage the longer an individual is observed to be without disability, the higher their household wealth holdings. Not only does the wealth-penalty have significant consequences at the time but it also has long term consequences in terms of financial well-being in retirement, through the 'asset-effect' and more broadly its impact on social mobility.

The key findings are:

➢ Disabled people have lower average household wealth than non-disabled people for all components of wealth – financial wealth, property wealth, private pension wealth and physical wealth. The differences are greater in the working age population than during retirement, driven by the greater incidence of disability in older age and the varied financial backgrounds of people who become disabled later in life.

➢ Average net wealth holdings (mean and median) increased between 1995 and 2005 across all age groups for disabled and non-disabled people with most of the increase occurring after 2000. Previous research has shown that this was driven by increases in house prices. There is evidence that the gap between disabled and non-disabled people widened between 2000 and 2005, particularly for the 35-44 age group, suggesting that disabled people didn't benefit from the housing boom by as much as non-disabled people.

➢ There is an accumulation of advantage and disadvantage. Longitudinal analysis of wealth, where the same individuals are tracked over a period of ten years, highlights some dramatic differences between the average (median) wealth holdings of the population of people who are classified as disabled at a point in time and those who were also disabled five and ten years earlier. This analysis shows that average wealth holdings are progressively lower for those disabled five and ten years earlier and this is particularly stark for people under the age of 55. In contrast, people who are not disabled both have higher average wealth holdings at a point in time compared with disabled people and wealth holdings are even higher if they were also disability free five and ten years earlier. For disabled people in the 45-54 age group the penalty for being long-term disabled (five and ten years earlier) relative to their peers who were not disabled is around £133,000 household net wealth at the median (financial asset, net housing wealth) (2005 values).

➢ In 2008/10 disabled people were living in households where total household wealth (net financial wealth, net housing wealth, private pension wealth, physical wealth) was on average £184,000 less than for non-disabled people (after controlling for differences in age, marital status and dependent children). £50,000 of this gap can be accounted for in terms of lower levels of education among disabled people. A further £22,000 can be accounted for in terms of lower positions in the socio-economic classification (based on occupation) reflecting their weaker position in the labour market.

➢ Disabled people enter retirement with considerably lower private pension wealth than non-disabled people. In the 55-64 age group the gap in the mean

level of private pension wealth is £125,000 and the gap at the median is £75,000. This signals increased likelihood of lower income and greater dependency on cash transfers during retirement.

This attempt to account for parts of the disability-wealth penalty that arise from differences in education and socio-economic class does not recognise the interconnections that exist between disability, education, employment and income. The incidence of disability is not randomly distributed across the population; as Jenkins and Rigg (2004) show there is 'selection into' disability with initially disadvantaged individuals facing higher risks of disability onset than more advantaged individuals. Advantage/disadvantage can be defined in terms of education, employment status, earnings, income or childhood and family circumstances. Disability in turn can directly impact on educational attainment, employment prospects, earnings and income. In the analysis presented here we are not able to control for these selection effects, instead we describe the empirical evidence on the relationship between disability status and wealth holdings. We are not able to say emphatically why disabled people live in households with significantly lower wealth holdings than non-disabled people. We are able to show that some of this can be accounted for by differences in education and socio-economic class (NS-SEC). We can speculate that extra costs of disability leave disabled people at a disadvantage and less able to save and accumulate assets. There is no doubt that a legacy of long-term lower average household income accumulates among long-term disabled people to create a set of circumstances that result in these people being at a substantial disadvantage in terms of household wealth.

While both disabled and non-disabled people have, on average, benefited from the real increase in average wealth holdings between 1995 and 2005, disabled people do not appear to have benefited to the same extent from the house price boom that led to big increases in household wealth between 2000 and 2005. This is because they are less likely to live in owner occupied accommodation than non-disabled people and amongst homeowners disabled people live in households with lower values of housing assets.

These findings have long run implications for disabled people and their families, particularly for those who experience limiting disability through the critical wealth accumulation stages of the lifecycle and over long periods of time. Inequality in the division of wealth between disabled and non-disabled people drives a wedge between these families in terms of their current financial well-being, their future prospects and those of their children, and their need to be reliant on the State.

Clearly in the development of policy options it is important to consider what drives these differences such as: educational attainment, employment prospects, pay, the current operation of the benefit and tax system, financial products (including access to credit), financial advice and regulation of financial markets and the extra costs of disability.

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