

Disability and employment

Measuring the effects over the course of a
working life time

NIESR
March 2011

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Acknowledgements



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Cass Business School

Financial support

Economic & Social Research Council RES-000-23-7393

Economic & Social Research Council RES-000-22-0883

Institute and Faculty of Actuaries



Guide

1. Start with numerous difficulties in measurement, normally glossed over
2. Approaches/models of effect of disability on employment
3. Life time measures -motivation is application to the damages calculation in personal injury litigation
4. We find large effects when measured over a life time which have proved to be controversial due to the implication for damages
5. Why so big? Dig around a bit further in the data
6. Estimates might be wrong
7. Size of the effect and its growth since 1970s is an issue for scholars who engage with the world of work



Definition is important

Sloppy definitions are unhelpful

Necessary to distinguish between impairment and disability

“Disability refers to the mismatch between an individual’s reduced ability and the level of ability that is required or expected in order to function at home or at work.”



Disability in the LFS

1. Impairment must be long term (over a year)
and its effects must
2. Substantially adversely affect ability to carry out day-to-day activities (ADL-limiting) (same as DDA 1995)
and
3. Adversely affect the amount or the type of work that can be undertaken (Work-limiting)



Disability is a continuous concept

Disability is measured as a dichotomous variable. The choice of threshold determines

- ◆ The prevalence rate –the wider the definition the greater the prevalence
- ◆ The average level of severity –the wider the definition the lower the average level of severity
- ◆ The employment rate – the wider the definition the higher the employment rate

Definitions and rates

	Disability prevalence rate %	Employment rate among disabled %
DDA and work-limiting	12.6	31.3
Work-limiting	16.3	39.4
All disabled	20.3	47.8

LFS 1998-2003

Disability metrics

- ◆ 20 % working-age population have a long standing illness or disability LFS 2001 (Smith & Twomey 2002)
- ◆ 12.6 % have the above which is also ADL- and work-limiting Butt et al (2008) LFS 1998-2003 (11.1% 2009)
- ◆ 30 % employment rate for the disabled HDS 1996 (12.5%)
76 % employment rate for the non-disabled (Berthoud 2006) (46% point gap)
- ◆ 31.3 % employment rate for the disabled
81.4 % employment rate for the non-disabled LFS 1998-2003
Butt et al (2008) (50% point gap)
- ◆ GHS 1975-2003 upward trend in prevalence of disability and downward trend in disabled employment rates (Foster and Wass 2011)

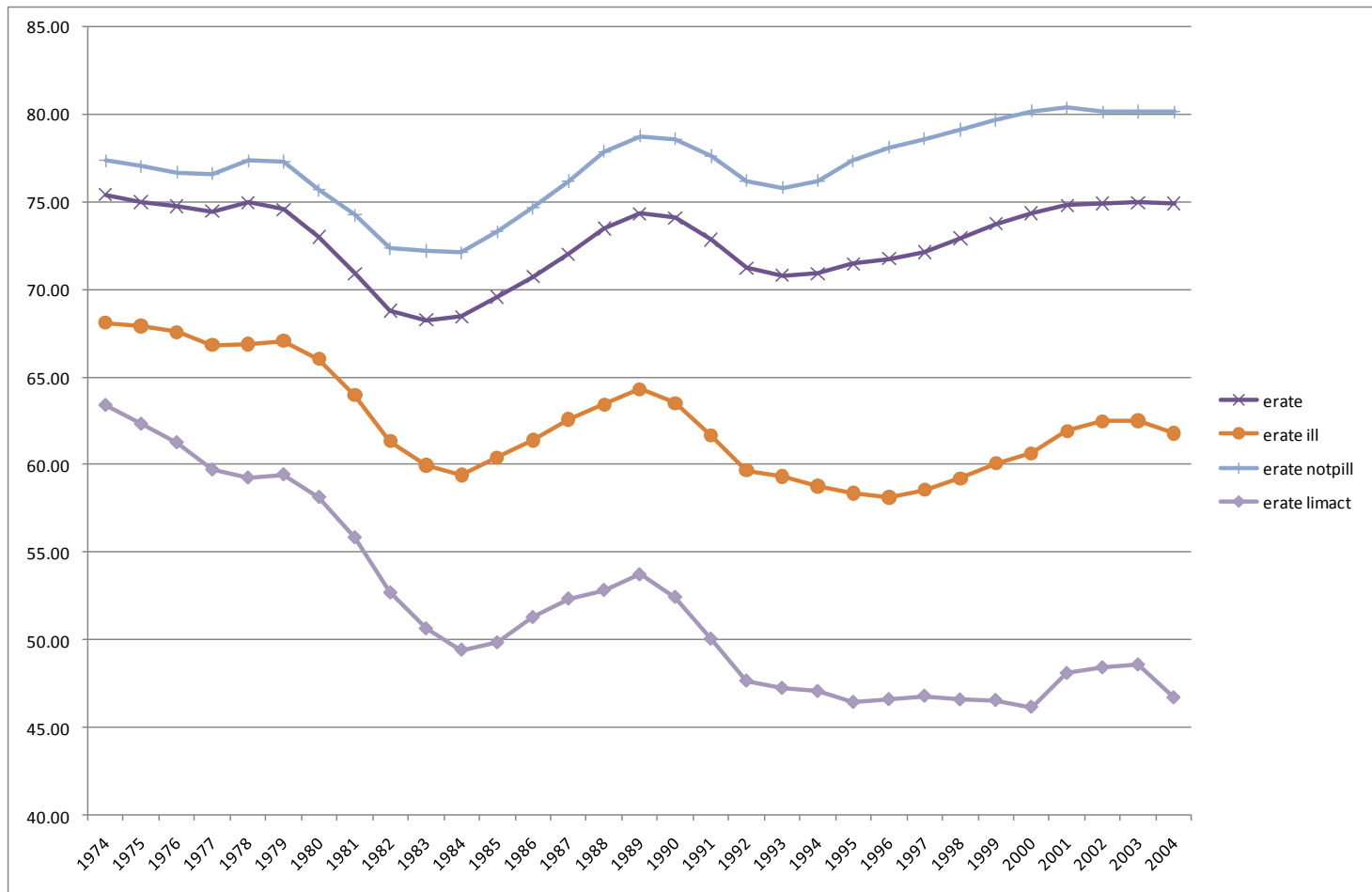
GHS Limiting long-standing illness or disability 1974-2003

Table 1 Prevalence, employment rates and employment gaps
(%) by impairment

	1	2	3	4	5	6	7
1974	20.21	12.84	77.71	67.81	9.9	62.88	14.83
1984	27.82	14.76	72.11	59.69	12.42	49.22	22.89
1994	29.48	17.00	76.35	59.25	17.10	46.31	30.04
2004	28.15	15.57	80.66	60.82	19.84	45.71	34.94

Source: GHS Time Series 1972-2004

Employment rate in the GHS 974-2003





Two models of disability effects

1. The individual medical model

Disability arises from functional limitations and generates incapacity and exclusion.

2. The social model

Society is constructed by and for the able-bodied such that the functionally impaired are disabled in their ability to fully participate.

Economics literature

- ◆ Earnings disadvantage minimal when control for other characteristics (Blackaby et al 1999, Jones et al 2006, Longhi et al 2010)
- ◆ The incidence of reported disability is non-random (Berthoud 2007)
- ◆ Average employment gap is around 40% depending on definition (Berthoud 2006, Burchardt 2000, Haardt 2006, Jones et al 2005, Butt 2008)
- ◆ No discernable DDA-induced effect on the employment rate (Bell & Heitmuller 2009)
- ◆ No effect from time series reduction in replacement ratio (Berthoud 2006, 2007, 2011)



Sociology literature

- ◆ Disability established as an economic identity (Berthoud 2007)
- ◆ Discrimination – refusal of employers to recognise the productive capacity of the impaired (generally and specifically) or to adapt their premises and practices to enable them to take a job (Oliver 1990)



Work life expectancy

- ◆ Anticipated no. years spent in employment to final separation (retirement age)
- ◆ Like a life expectancy (years to anticipated death) except there is one one-way transition here
- ◆ Reduction Factor (calculated from the WLE) is the proportion of a life expectancy to retirement that is likely to be spent in employment (standardised across age)

Valuing Personal Injury Compensation in England and Wales

- Future pecuniary losses measured as a lump sum are determined by the courts as the product of:
 - ***multiplicand***: the annual loss (or expense)
 - ***multiplier***: the future expected time period over which the loss is expected to occur
- the multiplier is the WLE and accounts for the significant future risks which affect mortality and non-employment
- discounted by the real rate of interest to account for early receipt

The Ogden Tables

- An actuarial tool to aid the valuation of monetary losses in personal injury and fatal accident cases in England and Wales.
- Named after Sir Michael Ogden QC, who chaired the first multi-disciplinary working party in the early 1980s.
- 6 editions starting from the early 1980s (1984, 1994, 1998, 2000, 2004, 2007) Formally recognized in the Damages Act of 1996 and by the House of Lords in *Wells v. Wells* 1999.
- Contains a collection of base multipliers which account for mortality risk to retirement age and Reduction Factors (RFs) for labour market contingencies
- While the value of mortality risk has been constantly updated, the value of the RF remained unchanged up until the 6th edition (2007).

The 5th ed. Ogden Tables

- Provide guidance to future employment risks in the form of Reduction Factors (based on the Haberman & Bloomfield, 1990) according to:
 - ✓ sex
 - ✓ age at trial and age at retirement
 - ✓ occupation
 - ✓ level of economic activity
 - ✓ geographic location
 - ✓ expected future rate of interest
- No allowance for:
 - ✗ employment status before and after the injury
 - ✗ the effects of impairment (disability)



Smith v Manchester Award

- ◆ Evaluation of the disadvantage on the labour market arising from disability
- ◆ 6-24 months of non-employment

The loss of earnings calculation

51 year old man (not disabled) and was earning £20,327 at time of injury. After injury he is disabled and earning £13,645 (Ogden Tables 5th edition)

Pre-injury loss

£20,327 x 11.41 x 0.93

Post-injury loss

£13,645 x 11.41 x 0.93

Smith v Manchester £13,645

Total award = £84,550



Inconsistency

Magnitude of the measured impact of disability on employment (35% in 1996 GHS, 44% 1996 HDS)

greater than

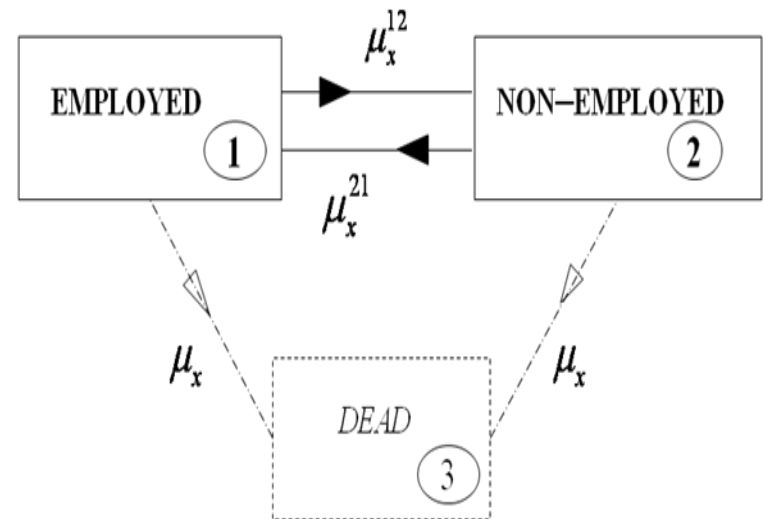
6-24 months conventional Smith V Manchester award

Would a WLE estimated for a disabled person give this result?

Model Estimation

Transition Intensity Approach (TIA)

- ◆ Calculate central exposures using the census method
- ◆ Estimate age-specific transition intensities (hazards)
- ◆ Calculate age-specific transition probabilities based on the smoothed transition intensities
- ◆ Calculate WLE for each age based upon a life time of transitions



Labour Force Survey (LFS)

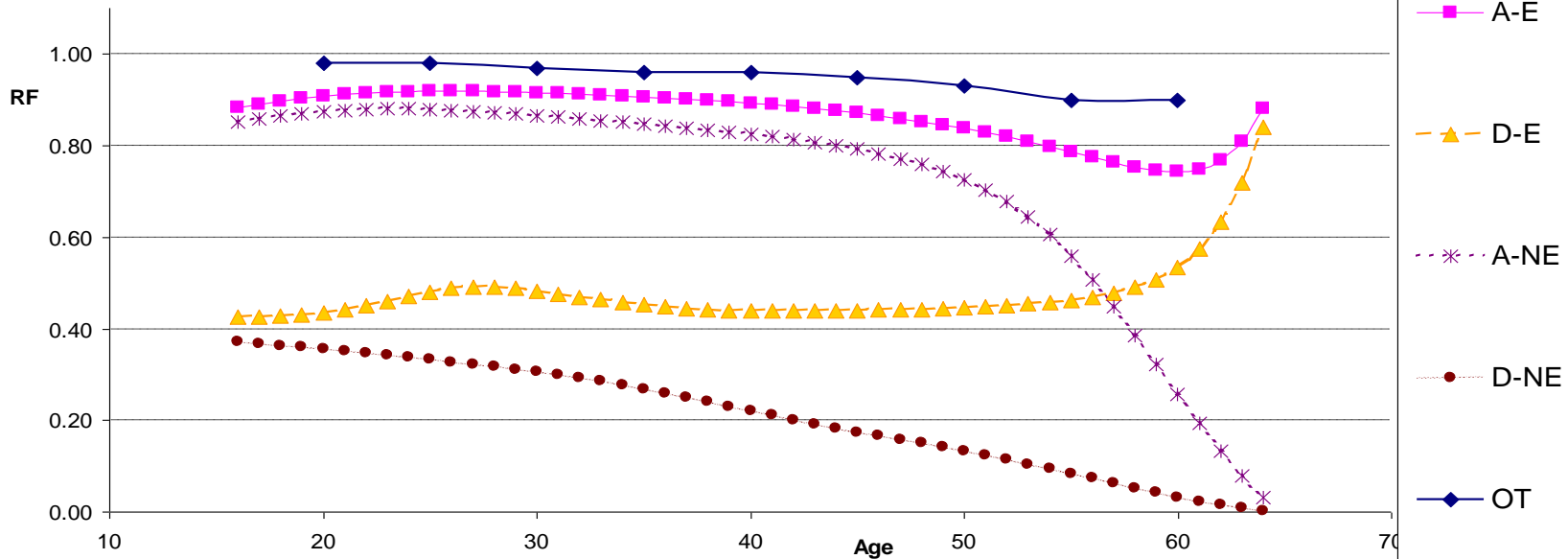
- ◆ Rotating sample of around 60,000 households
- ◆ Repeated cross-section survey of socio-economic variables of the working age population.
- ◆ Since 1992 information is collected on a quarterly basis, so each household is normally re-interviewed exactly 5 times over a one year period.
- ◆ Link the records of the same participants in 5 consecutive quarters and create quasi-longitudinal data set
- ◆ Each five-quarter data set provides a one year observation window into the transition patterns of the respondent.
- ◆ We make use of 20 five-quarter data sets from *Spring 1998 – Winter 2003* . Disability variables collected from 1998



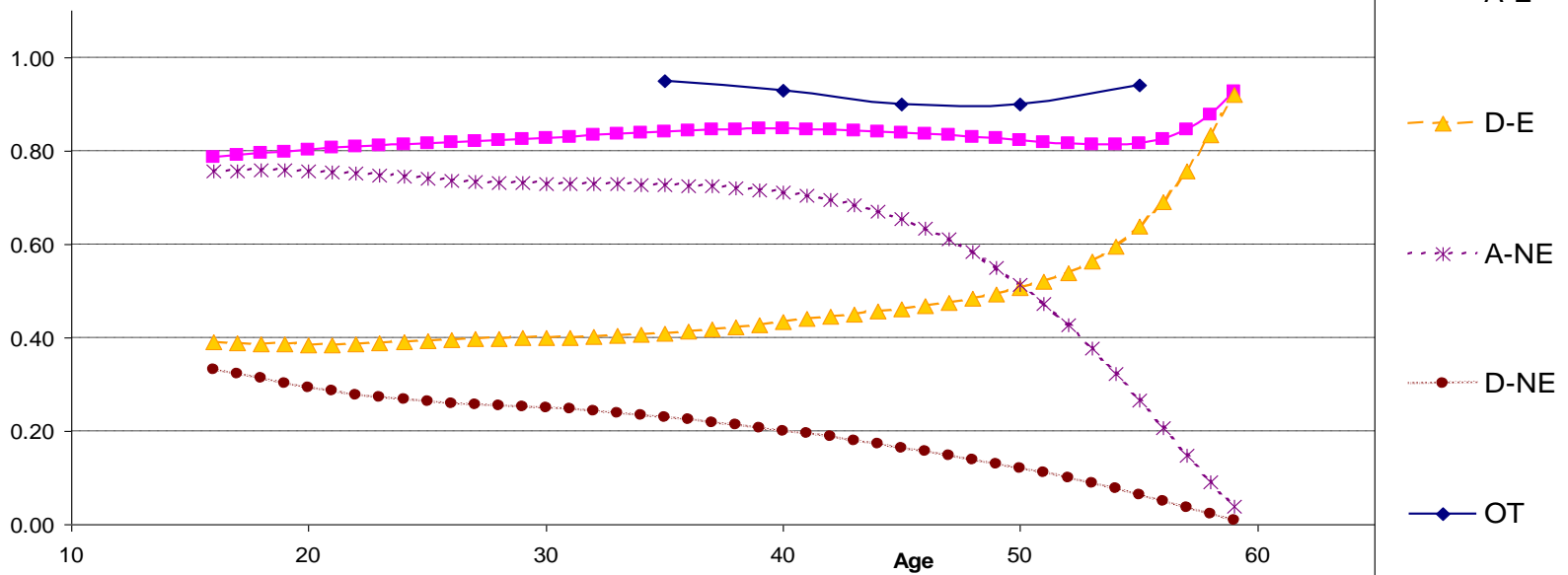
Variables

1. male/female
2. age (working years: 16 – 60/65)
3. economic activity status (INECACA)
4. disability status (DISCURR)
5. highest educational qualification (HIQUAL)

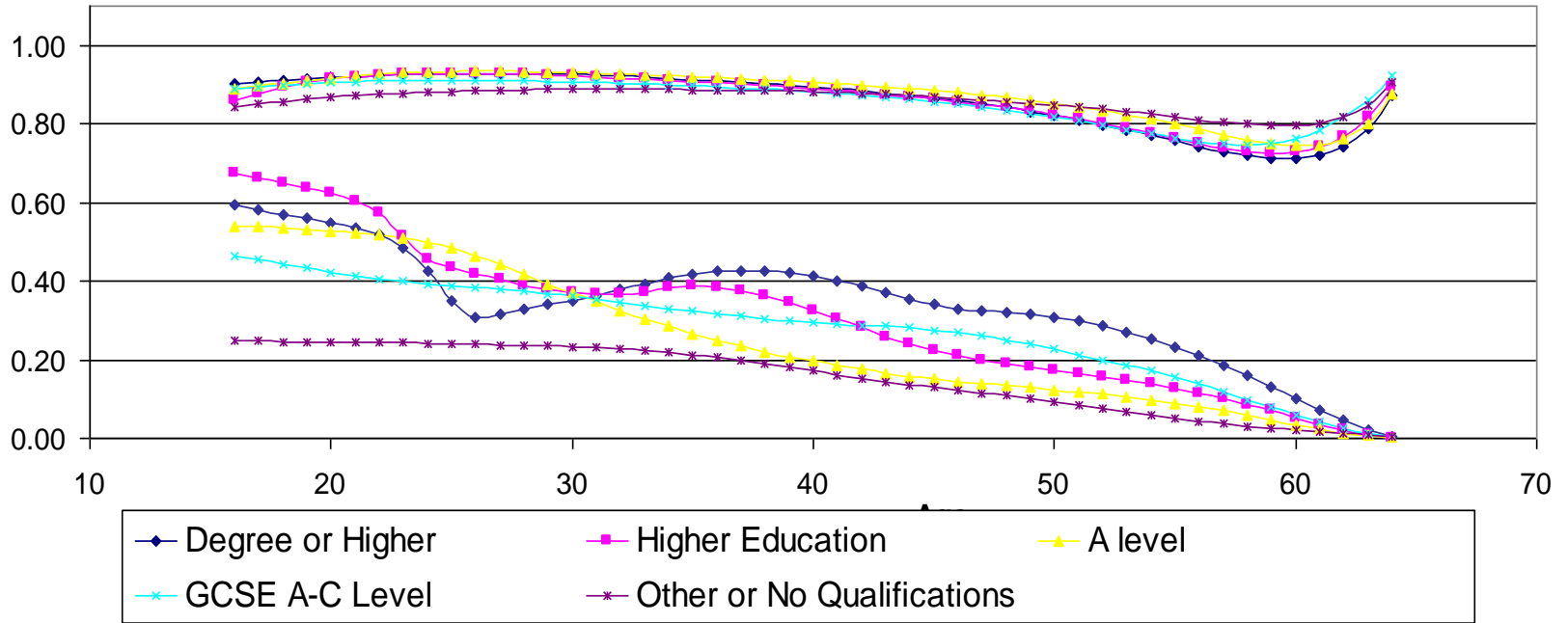
Males Reduction Factors by Disability



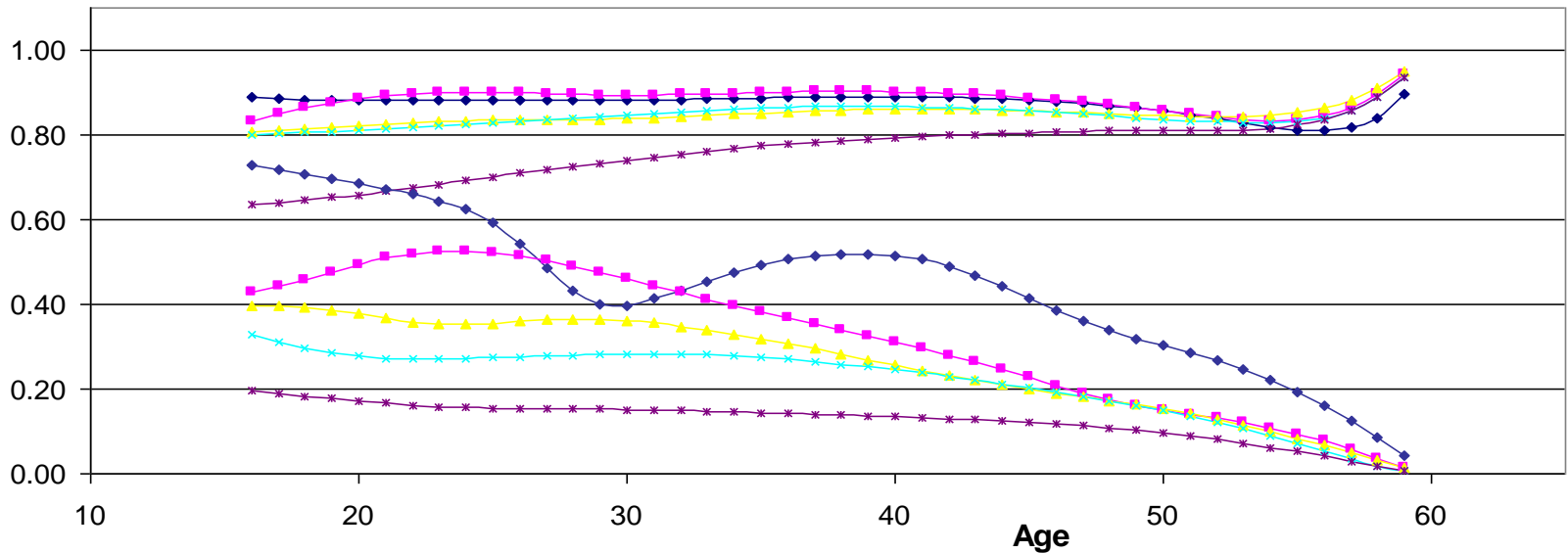
Females Reduction Factors by Disability



Males Pre- and Post-Injury Reduction Factors by Education



Females Pre- and Post-Injury Reduction Factors by Education



Does the Ogden Six approach make a difference?

51 year old (not disabled) and was earning £20,327 at time of injury.
After injury he is disabled and earning £13,645.

Old Style method under Ogden Five:

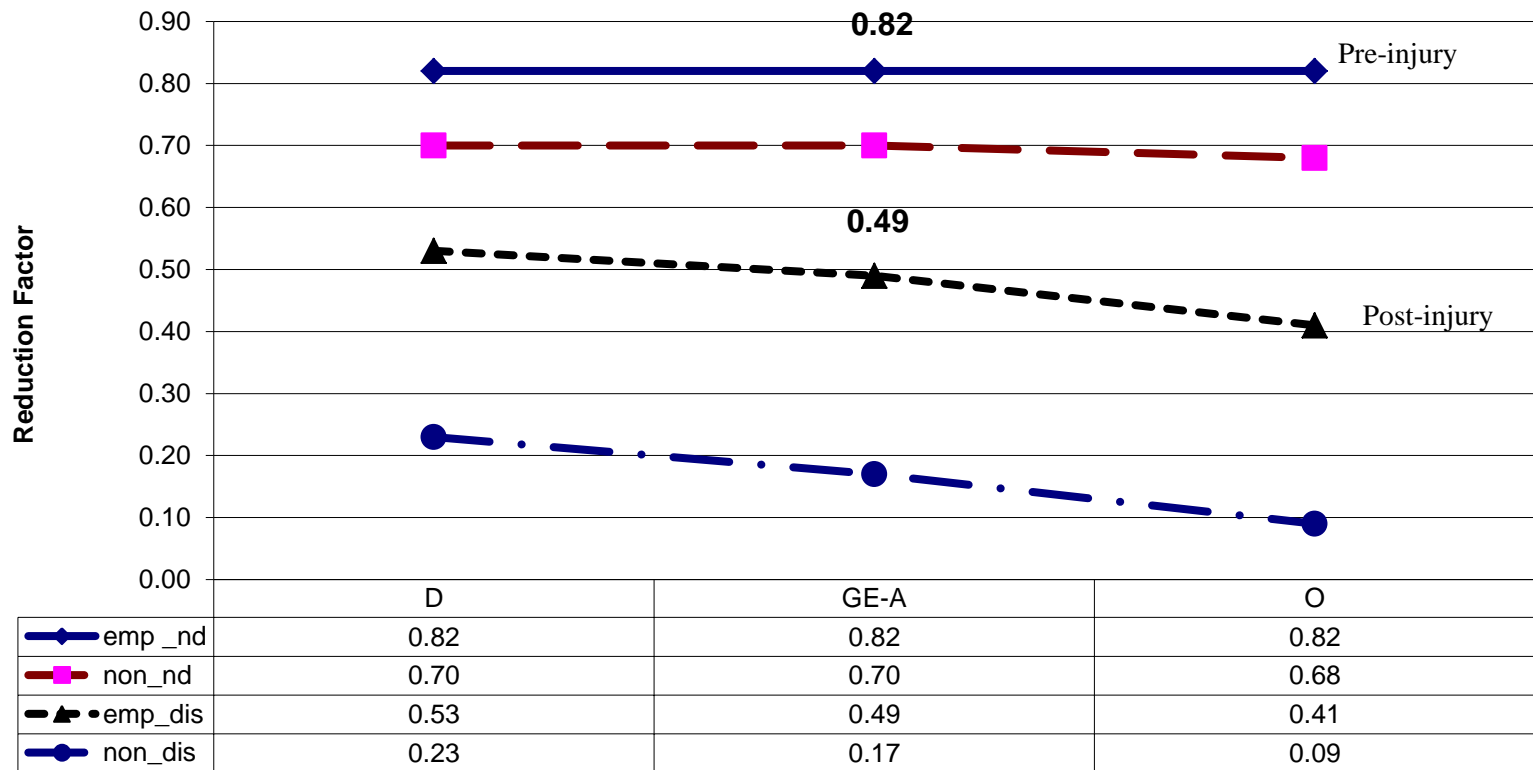
$$\begin{aligned} & (\text{£}20,327 \times 11.41 \times 0.93) - (\text{£}13,645 \times 11.41 \times 0.93) \\ & + \text{Smith v Manchester } \text{£}13,645 = \qquad \qquad \qquad \text{£}84,550 \end{aligned}$$

Ogden Six new approach

$$(\text{£}20,327 \times 11.41 \times 0.82) - (\text{£}13,645 \times 11.41 \times 0.49) = \qquad \qquad \text{£}113,895$$

The difference is £29,345 (35%)

The court's discretion in Conner v Bradman



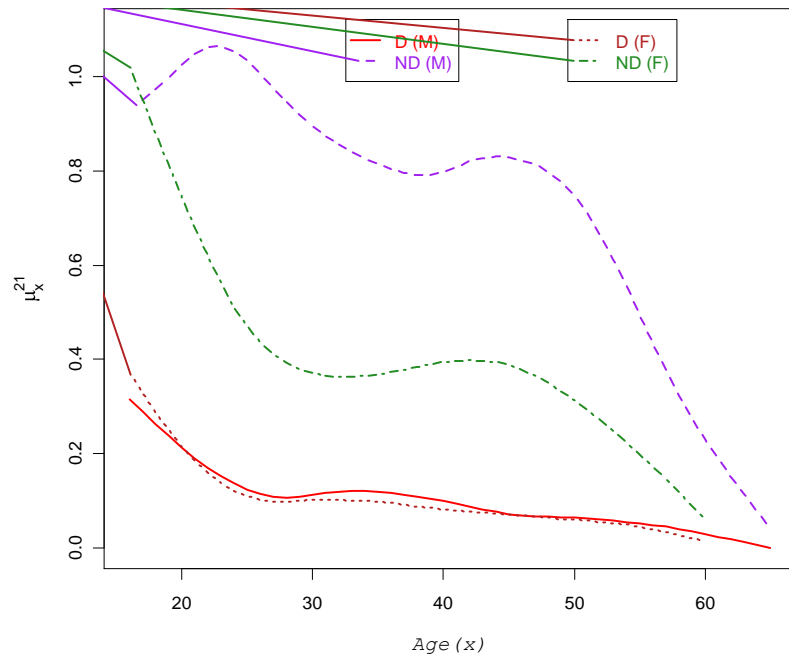


The dynamics of employment

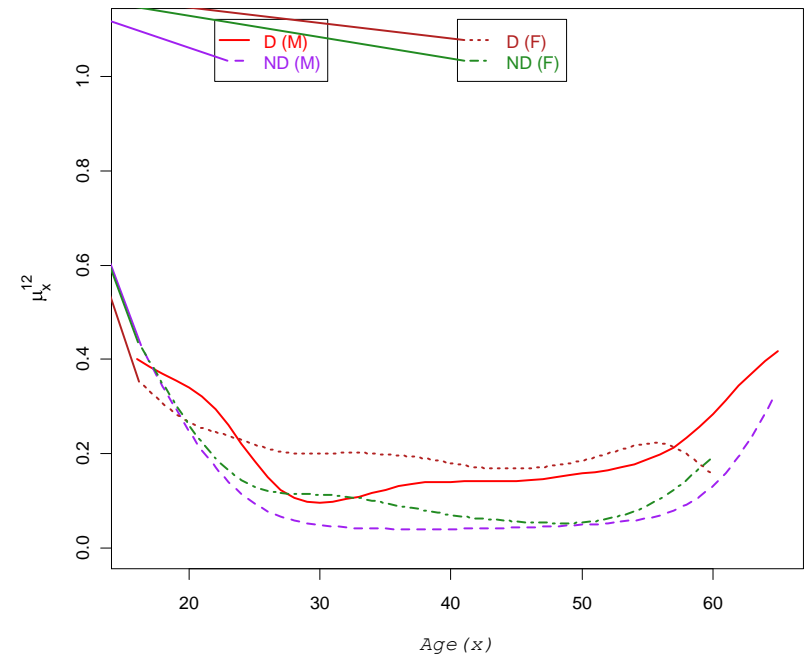


- ◆ Higher disabled exit rates from employment
- ◆ Lower disabled entry rates into employment
- ◆ Higher levels of disabled non-employment

Transitions in the LFS



b) Smoothed NE to E rates from LFS 1998 - 2003



a) Smoothed E to NE rates from LFS 1998 - 2003

Enduring Economic Exclusion: Disabled People, Income and Work by Tania Burchardt Joseph Rowntree Foundation 2000

- ◆ 12% of BHPS 1997 disabled
- ◆ 60% disabled non-employed (15%)
- ◆ 17% who acquire a disability while in work exit within a year (7%)
- ◆ Risk factors for exits are manual occupations, severe disability, mobility, sight/hearing, mental health, large firm
- ◆ 33% of the disabled who find work exit within a year (20%)
- ◆ Hazard rate for re-entry into employment within a year for the disabled is 4% (24%)
- ◆ Risk factors for no entry are low and no qualifications, severe disability, no recent work history and recession

Transitions Out of and Back to Employment Among Older Men and Women in the UK David Haardt 2006 ISER

- ◆ Health status is subjective and is measured on a four point scale relative to others of the same age. Age range is 40-65 years.
- ◆ 10% report poor or very poor health
- ◆ Health status is the most important determinant of labour market transitions
- ◆ Men in poor health have an exit rate 2.8 times those in excellent health
- ◆ Men in very poor health have an exit rate 4.1 times those in excellent health
- ◆ Entry rate for those in poor health is 72% lower than for those in excellent health (75% lower for very poor health)



Bias and imprecision

- ◆ Imprecision – correct on average for the population but wrong for the individual
- ◆ Bias- imprecision is systematic and so the average is not the expected value at the population level



Sources of bias and imprecision

- ◆ Employment status over the course of a year does not measure employment history
- ◆ Disability status is insufficiently accurate because it is subjective, it may not be independent of employment status and it does not measure severity



Employment status

- ◆ Claimants are different from the LFS disabled (by age, sex, education and starting employment status) in terms of their employment history. There is more historical inactivity in the LFS disabled.
- ◆ The difference matters for their future employment prospects.
- ◆ The disabled RFs are too low.

Subjective disability measure

1. The prevalence of disability is exaggerated
 2. The LFS disabled are less severely disabled than claimants
 3. The LFS disabled are more severely disabled than claimants
 4. Disability is reported as a result of non-employment (justification bias)
- ◆ 1-2 The disabled RFs are too high
 - ◆ 3-4 The disabled RFs are too low

Why does disability so substantially reduce employment prospects?

Organisation of work

“At the core of any theory of industrial behaviour lies an image of the typical worker”

“The worker with ‘a job’ is the same universal ‘individual’ who in actual social reality is a man. The concept of a universal worker excludes and marginalizes women who cannot, almost by definition, achieve the qualities of a real worker because to do so is to become a man”. (Acker 1990)



Why has the disability-induced employment gap increased?

A material analysis of capitalist social relations

- ◆ Classical management and mass production technology
- ◆ Henry Ford's view
- ◆ Lean Production



EAT transcripts



1. Explore extent to which job descriptions and the organisation of work are founded upon concepts of a universal or ideal worker
2. How employees are disadvantaged by such ideas
3. How employers seek to resolve the mismatch between the standard job spec and the non-standard person



Vuoto v London Underground

- Station Assistant Multi-functional (SAMF)
- Adjustments of 5 years rescinded under the ‘schematic’
- Team members perform same multiple flexible roles, interchangeable
- HR and OH department opinions over-ruled
- Management view ‘duties under the act not limitless’
- ET and EAT found in favour of the claimant



Mrs Garrett v Lidl Ltd

- Store manager
- Team members different job roles not fully interchangeable
- Limit to adjustments
- ET find in favour of claimant
- EAT find in favour of the defendant



Four themes from EAT

1. Standardised job description (no allowance for impairment)
2. Lack of flexibility within the job and the system
3. Measuring performance adds to inflexibility
4. Accommodating employees outside the system

Conclusions

- Large and persistent gap counter to trends
- Broadly consistent upward trend across data, definitions and countries
- Comparing WLE measures the disability impact over a life time
- Application to the law reveals under-compensation for the effects of disability using conventional methods
- Disbelief at size of effects and discretion used to reduce damages implied by estimated effects
- Links to lack of conceptual basis with which to understand size of effect and upward trend
- Ideas from industrial sociology and lean production – multi-tasking and interchangeability . Indirect exchange of jobs between unskilled disabled employees and married women with A levels or more (Berthoud 2007)