

Introductory Module to Economics of Ageing

Gentle Introduction to Poverty and Inequality

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What is poverty?

No single, universally accepted definition. Three, to illustrate:

- pronounced deprivation in well-being.(World Bank, 2000)
- lack [of] the resources to obtain the type of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved, in the societies to which they belong (Townsend, 1979)
- The poor shall be taken to mean persons, families and groups where resources (material, cultural and social) are so limited as to exclude them from a minimum acceptable way of life in the Member States in which they live. (European Commission, 1994)

Narrow vs Wider view

- Narrow view = income
- Wider view = multi-dimensional

Absolute vs Relative Poverty

- Absolute: it is related to a set standard (e.g. living with less than X dollars a day or minimum income standard -ie minimum income to purchase a certain basket of goods)
- Relative: income threshold below which a person is in poverty
- Quasi-absolute: the income threshold of one year (1997) is fixed in real terms and then applied to subsequent years

However:

All approaches to definition [of poverty] must be relative to society, time, place and observer. Thus there can be no absolute definitions: they are all relative.

Poverty: the facts. Child Poverty Action Group, 2001

Relative poverty

Five main issues:

- Measure (mean or median income)
- Threshold (50, 60 or 70 per cent)
- Housing costs (Before or After)
- Individual or Household
- If Household, equivalised income or not

Relative poverty - measure

'Income' usually refers to *disposable or net* income -ie total income minus direct taxes (income tax, national insurance and council tax), plus any social security benefits received.

Mean or median income

The mean is the average of a series and the median is the halfway point.

Say 100,200,300,400,500

Mean: 300

Median: 300

Say 100,200,300,400,1500

Mean: 500

Median: 300

The *median* is preferable -it's not influenced by extreme values

Relative poverty - threshold

How far *below* the median income does poverty start?

Most common threshold: 60 per cent

There is nothing 'special' about this figure -it's simply a convention

Other fractions sometimes used:

40, 50 and 70 per cent (*the lower the threshold, the more severe the poverty*)

Relative poverty - housing costs

Before or After?

Housing costs include:

- rent (gross of housing benefit)
- water rates, community water charges and council water charges
- mortgage interest payments (net of tax relief)
- structural insurance premiums (for owner occupiers)
- ground rent and service charges

Relative poverty - housing costs

Before or After?

There are pros and cons with each indicator.

- *If housing costs vary only because of differences in housing quality, then income BHC would be a better measure of living standards; however, if variations are due to other factors (such as region), AHC income may be preferable*
- *AHC measures put owner-occupiers and tenants on a more even footing*

Poverty: Measures and Targets. /Research Paper 04/23, House of Commons

Individual or Household

The distribution of personal income gives only a fragmented picture of the distribution of welfare in the total population. For example, persons, with no income, like housewives or children are not represented in such an analysis. To draw a more complete picture of the income situation of a society, the income of a household has to be examined.

Tentschert et al., Income Poverty and Minimum Income Requirements in the EU14

Interdisciplinary Centre for Comparative Research, Vienna, 2000

Equivalisation

When we have household income data (as, for example, from the NI Family Resources Survey), it is important to distinguish how many people make up the household.

A £100 household income earned by person living alone is not the same as a £100 household income earned by a couple with two children... and what about a £400 household income earned by a couple with two children?

Equivalisation is a technique that allows comparison of incomes between households of different sizes and compositions. (DSDNI, 2009)

Equivalisation

There are different scales -no one 'ideal'.

The most 'obvious' one is the 'per capita' scale, where we divide the household income by the number of its constituents. (in this case, a £100 household income earned by a person living alone would be equivalent to a £400 household income earned by a couple with two children.

It has its shortcomings, because it does not allow for *Economies of Scale*.

Equivalisation

Economies of scale imply, in this context, that a single person on a £100 income is not in the same situation as a couple with no children earning £200 (the latter are better-off).

Without allowing for economies of scale, we would think that both household incomes would be equivalent.

Shared costs (e.g. rent or mortgage, consumables, etc.) turn the cost for living not fully proportional to the size of the household

Furthermore, a couple with a 1-year old child on the same income as a couple with a 12-year old child do not have equivalent incomes.

Until 2004-05, the most common equivalisation scale in the UK was the McClements scale.

Since then, the OECD equivalisation scale has been adopted in most studies.

Equivalisation

Comparison between both scales

<i>Household composition</i>	<i>OECD BHC</i>	<i>McClements BHC</i>	<i>OECD AHC</i>	<i>McClements AHC</i>
First adult	0.67	0.61	0.58	0.55
Spouse	0.33	0.39	0.42	0.45
Third adult	0.33	0.42	0.42	0.45
Subsequent adults	0.33	0.36	0.42	0.40
Children aged under 14	0.20	0.20	0.20	0.20
Children aged 14+	0.33	0.32	0.42	0.34

Thus, BHC, using the OECD scale we consider a couple's income of £100 equivalent to a single person's income of $£100 / 0.67 = £147$, and to an income of £83.33 ($£100 / 1.20$) of a couple with one child aged under 14.

Equivalisation

Another important assumption behind these equivalisation scales, apart from the existence of economies of scale, is that decisions, power, use of money is *shared* amongst the members of the household.

There have been some attempts made to tackle any imbalance in decision-making within households (via specific surveys) so as to produce equivalisation scales that reflect this situation.

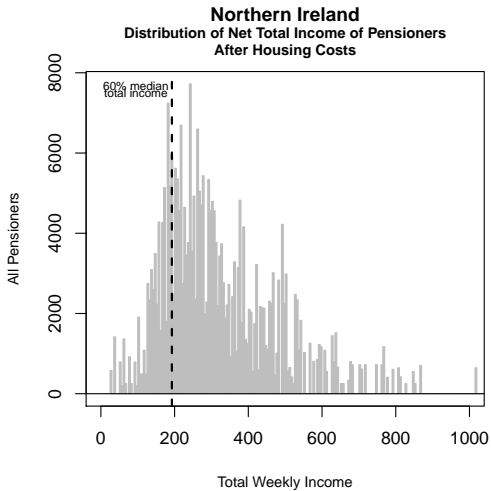
Poverty Income Measures

- Poverty rate (or headcount ratio): proportion of people below poverty line
- Poverty gap: average distance of those defined as poor to the poverty line, expressed as a proportion to this threshold. (eg a poverty gap of 30% indicates that on average the incomes of the poor are 30% below the poverty line -i.e. their average income amounts to 70% of the poverty threshold).

A transfer of income from the very poor to those living just below the poverty line could reduce the poverty rate.

However, to reduce the poverty gap a transfer from the non-poor to the poor is necessary, even though the recipients may remain in poverty.

Poverty Income Measures



Fiscal Impact of Getting Older People out of Poverty

Distributive and Fiscal Impact of Increasing Income of Older People in Relative Poverty

	Older People below Poverty Line	%	Fiscal Impact (£a year)
Currently	59,966	20.45	0
Increase in weekly income			
£5	56,925	19.42	790,660
£10	51,972	17.73	4,156,880
£15	47,397	16.17	9,803,820
£20	43,291	14.77	17,342,000
£25	40,671	13.87	25,083,500
£30	36,717	12.52	36,268,440
£35	33,894	11.56	47,451,040
£40	32,648	11.14	56,821,440
£45	30,951	10.56	67,895,100
£50	28,655	9.77	81,408,600

Source: Family Resource Survey

Fiscal Impact of Getting Older People out of Poverty

Distributive and Fiscal Impact of Increasing Income of Older People in Severe Poverty

	Older People below Poverty Line	%	Fiscal Impact (£a year)
Currently	41,376	14.11	0
Increase in weekly income			
£5	36,369	12.41	1,301,820
£10	33,540	11.44	4,074,720
£15	29,465	10.05	9,290,580
£20	27,344	9.33	14,593,280
£25	26,371	9.00	19,506,500
£30	26,067	8.89	23,882,040
£35	24,649	8.41	30,443,140
£40	24,398	8.32	35,314,240
£45	22,844	7.79	43,364,880
£50	22,844	7.79	48,183,200

Source: Family Resource Survey

Main data source

Family Resources Survey (a continuous survey with an annual target sample size of 24,000 private households across the UK)

In NI, the **Family Resources Survey Northern Ireland** collects detailed data on income levels, resources and financial circumstances of 3,600 households for the period from April each year to the end of March in the following year.

Poverty as a Multidimensional concept

Human Development Index (United Nations)

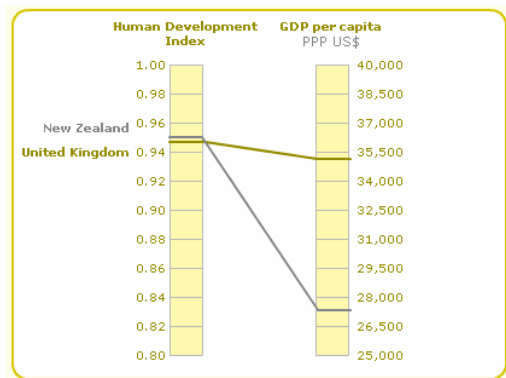
Weighted average of life expectancy at birth, adult literacy, educational enrolment, and GDP per capita for a population

Countries with highest Human Development Index scores:

HDI Rank	Country	2007
1	Norway	0.971
2	Australia	0.97
3	Iceland	0.969
4	Canada	0.968
5	Ireland	0.965
6	Netherlands	0.964
7	Sweden	0.963
8	France	0.961
9	Switzerland	0.96
10	Japan	0.96
11	Luxembourg	0.96
12	Finland	0.959
13	United States	0.956
14	Austria	0.955
15	Spain	0.955
16	Denmark	0.955
17	Belgium	0.953
18	Italy	0.951
19	Liechtenstein	0.951
20	New Zealand	0.95
21	United Kingdom	0.947
22	Germany	0.947
23	Singapore	0.944

Poverty as a Multidimensional concept

The HDI and GDP per capita are not necessarily aligned:



Poverty as a Multidimensional concept

Modern multidimensional approaches use weights not only *between* dimensions but *within* dimensions -if more than one indicator is used to measure a dimension- and *between people or households* -giving more weight to those more disadvantaged, for example.

There are lots of thorny technical issues (eg *union or intersection* of indicators -ie a person is in poverty if she falls behind only with respect to one indicator or only if in all of them or if in a k number of indicators-; *substituibility vs complementarity* of dimensions; etc.)

Multiple Deprivation Measure

In 2001, 2005 and 2010, poverty was measured by Super Output Area in Northern Ireland using a combination of indicators to create a *Multiple Deprivation Measure*.

A Super Output Area is a geographical unit within a Ward of between 1300 and 2800 inhabitants. There are 890 SOAs in Northern Ireland.

Indicators are grouped into seven domains.

- Income Deprivation
- Employment
- Health and Disability
- Education, Skills and Training
- Proximity to Services
- Living Environment
- Crime and Disorder

Multiple Deprivation Measure

Income Deprivation Domain

- Adults and children in Income Support households
- Adults and children in State Pension Credit households
- Adults and children in income based Employment and Support Allowance households
- Adults and children in income based Jobseeker's Allowance Households
- Adults and children in Working Families' Tax Credit households

Multiple Deprivation Measure

Employment Deprivation Domain

- Unemployment claimant count of women aged 18-59 and men aged 18-64
- Incapacity Benefit claimants women aged 18-59 and men aged 18-64
- Severe Disablement Allowance claimants aged 18-59 and men aged 18-64
- Carer's Allowance claimants women aged 18-59 and men aged 18-64
- Employment and Support Allowance claimants women aged 18-59 and men 18-64
- Steps to Work or New Deal Participants women aged 18-59 and men aged 18-64

Multiple Deprivation Measure

Health Deprivation and Disability Domain

- Years of Potential Life Lost
- Comparative Illness and Disability Ratio (A combined measure of three indicators):
 - individuals suffering from mood and anxiety disorders, based on prescribing data
 - suicides
 - mental health inpatient stays
- People registered as having cancer (excluding non-melanoma skin cancers)
- Emergency Admission Rate
- Low Birth Weight
- Children's Dental Extractions

Multiple Deprivation Measure

Education, Skills and Training Deprivation

- Sub-Domain: Primary School
 - Key Stage 2 Teacher Assessments for English and Maths (and Irish in Irish medium schools/units)
 - Proportions of pupils attending Special Education Needs Schools stages 3-5 or attending primary school with Special Education Needs stages 3-5
 - Absenteeism at Primary Schools (all absences)

Multiple Deprivation Measure

Education, Skills and Training Deprivation

- Sub-Domain: Post Primary
 - Key Stage 3 Teacher Assessments for English and Maths (and Irish in Irish medium schools/units)
 - GCSE or equivalent qualifications points score
 - Proportions of those leaving school not entering Further Education, Employment or Training
 - Proportions of 18-21 year olds who have not enrolled in Higher Education Courses at Higher Education or Further Education establishments
 - Absenteeism at Secondary Schools (all absences)
 - Proportions of pupils attending Special Education Needs Schools stages 3-5 or attending post primary school with Special Education Needs stages 3-5

Multiple Deprivation Measure

Education, Skills and Training Deprivation

- Sub-Domain: Working Age Adults
 - Proportions of working age adults (25-59) with no or low levels of qualification

Multiple Deprivation Measure

Proximity to Services Domain

- GP premises
- Accident and Emergency hospital
- Dentists
- Opticians
- Pharmacists
- Job Centre or Jobs and Benefits Office
- Post Office
- Supermarket or Food Store
- Large Service Centre
- Council Leisure Centre
- Financial Services
- Other general services

Multiple Deprivation Measure

Living Environment Domain

- Sub-Domain: Housing Quality
 - SOA level Decent Homes Standard
 - SOA level Housing Health and Safety Rating System
- Sub-Domain: Housing Access
 - SOA level homelessness acceptances
- Sub-Domain: Outdoor Physical Environment
 - SOA level local area problem score

Multiple Deprivation Measure

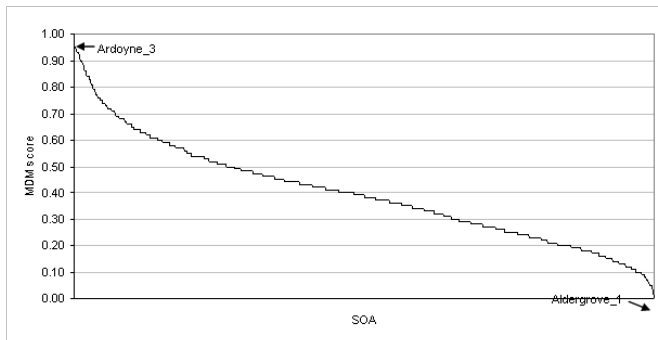
Crime and Disorder Domain

- Crime Sub-Domain
 - Violence, robbery and public order
 - Burglary
 - Vehicle Theft
 - Criminal Damage
- Disorder Sub-Domain
 - Deliberate Primary and Secondary Fires
 - Anti Social Behaviour Incidents

Multiple Deprivation Indices

Within the Income Deprivation domain, an indicator is estimated for Older People (i.e. the Income Deprivation Affecting Older People Score), and another one for Children (i.e. the Income Deprivation Affecting Children Score)

Here's the ranking of SOAs by the Income Deprivation Affecting Older People Score:



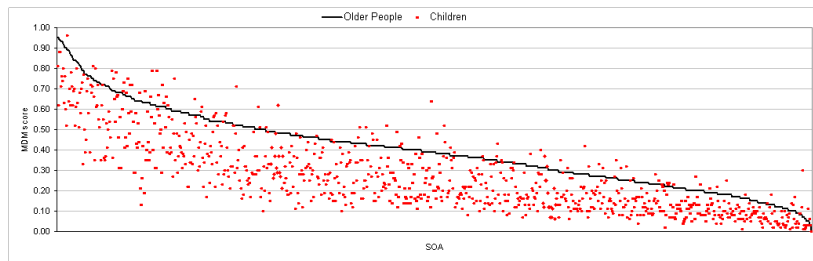
Multiple Deprivation Indices

Is it the case that the higher the income deprivation affecting OP, the higher the income deprivation affecting children?

Yes. (*Spearman rank correlation=0.83*)

Multiple Deprivation Indices

Income deprivation affecting OP is greater, in general, than that affecting children:



Multiple Deprivation Indices

Is the steepness in the income deprivation affecting OP by SOA the same as that affecting children?

(i.e. do both measures vary by the same rate as we go from more deprived SOAs to less SOAs?)

Older vs Children Deprivation						
Group	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
1	0.147	0.034	4.39	0.000	0.081	0.214
2	-0.494	0.026	-18.96	0.000	-0.546	-0.443
3	0.027	0.028	0.97	0.333	-0.028	0.082
4	0.053	0.030	1.77	0.078	-0.006	0.112
5	-0.240	0.041	-5.85	0.000	-0.321	-0.159
6	0.082	0.030	2.70	0.008	0.022	0.141
7	0.538	0.019	28.56	0.000	0.501	0.575
8	0.364	0.025	14.29	0.000	0.313	0.414
9	0.409	0.023	17.69	0.000	0.363	0.454
10	0.522	0.021	25.39	0.000	0.481	0.562

No. Both measures vary at different rates. The gradient (or slope) is *steeper* for OP -ie the difference in income deprivation across SOAs is **starker** among OP than children.

Multiple Deprivation Indices

Latest results:



**STATISTICS PRESS RELEASE -
NORTHERN IRELAND MULTIPLE DEPRIVATION MEASURE 2010**

9.30am - Wednesday 31st March 2010

Results from the Northern Ireland Multiple Deprivation 2010 study were released today by the Northern Ireland Statistics and Research Agency (NISRA).

Subjective poverty

Two definitions:

- Whether a person considers to live in poverty or not
- What a person considers to be essential, but lacks of

It tends to result in poverty lines much higher than those estimated from other approaches.

Subjective poverty and Older People

What do older people consider essential in the UK?

- Having two pairs of all weather shoes;
- Keeping their home adequately warm;
- Being able to replace broken electrical goods such as a refrigerator or washing machine;
- A hobby or leisure activity
- Food
- Transport
- Dental treatment

Dominy and Kempson, Understanding older people's experiences of poverty and material deprivation,

Department for Work and Pensions, Research Report No 363, 2006

Subjective poverty and Older People

Extent to which FRS subjective indicators capture deprivation among older people

	Captures link between income and lacking an item	Identifies people who cannot afford an item
Home contents insurance	oo	o
Home decoration	oo	o
Saving for a rainy day	oo	o
Holiday	oo	
Replacing electrical goods	o	oo
Hobbies/leisure	o	
Two pairs of shoes	o	
Spending money for self		
Friends/family for a meal		
Replacing furniture		
Adequate heating		
oo Captures income well		
o Captures income fairly well		

Dominy and Kempson, Understanding older people's experiences of poverty and material deprivation,

Department for Work and Pensions, Research Report No 363, 2006

One non-monetary study in NI

Research into Food Poverty and Homelessness in Northern Ireland
Deloitte MCS Limited
Food Standards Agency, 2006

Inequality of what?

As with poverty, we can consider various measures of inequality

Income inequality is, by far, the most travelled road.

Income inequality refers to how uneven income is distributed within a society.

Indicators

Again as with poverty, there are many ways to measure inequality

- Gini coefficient
- The ratio between the $X\%$ richest and the $(1-X)\%$ poorest (usually, 90-10 or 80-20)
- The squared coefficient of variation
- The mean log deviation
- Theil index
- Atkinson index

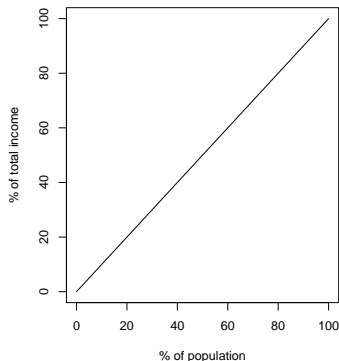
Don't panic! We're only going to talk about the first two.

Gini coefficient

It is a *very popular* mathematical measure of the following:

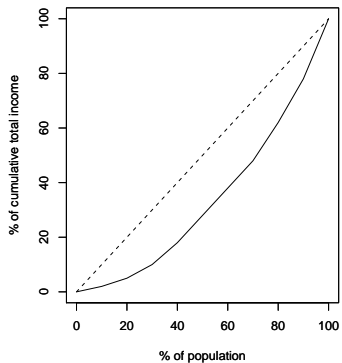
Imagine we rank households according to their incomes in ascending order. If income were equally distributed in a society, then, any 10% of the population chosen would earn, collectively, 10% of total income and, say, any 35% of the population would earn 35% of total income.

We could represent this situation thus:



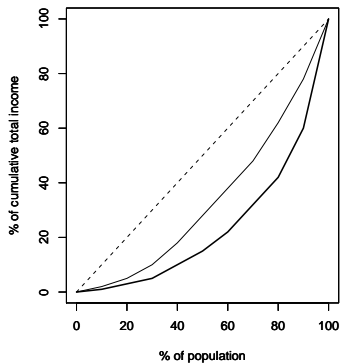
Gini coefficient

Income inequality would be depicted as a curve *below* this line



Gini coefficient

The higher the inequality, the furthest the curve would be from the equality line:

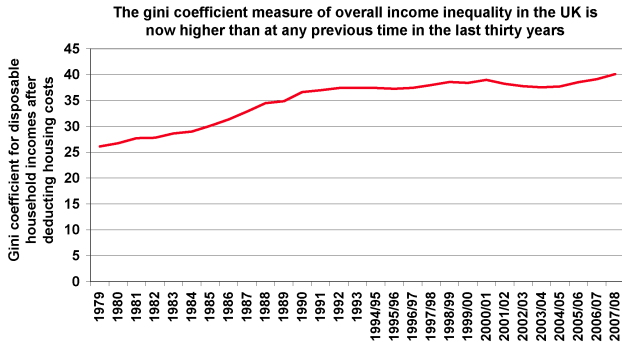


Gini coefficient

The Gini coefficient measures the degree of inequality as the proportion of the area between the actual curve and the equality line over the triangle formed by the equality line.

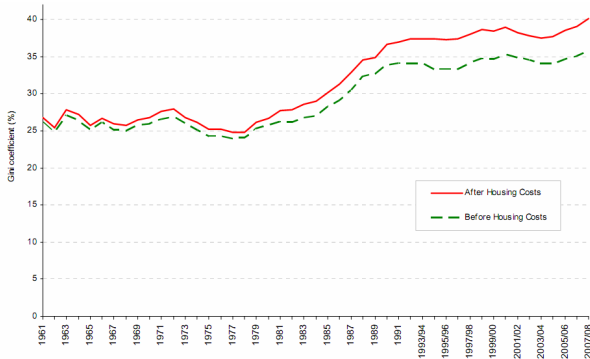
Therefore, it can be expressed as a % and a higher coefficient denotes higher inequality.

Gini coefficient



Source: Households Below Average Income, DWP (1994/95 onwards) and the Family Expenditure Survey (earlier years) obtained via data published by the IFS; UK; updated Aug 2009

Gini coefficient

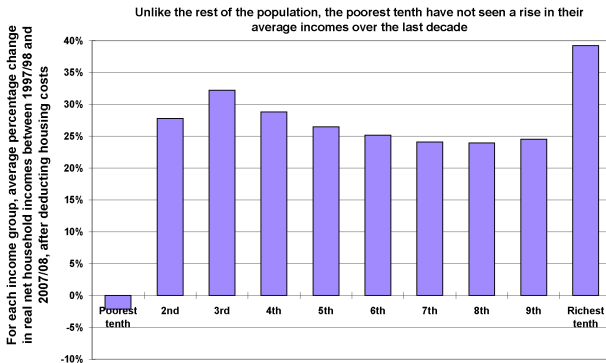


Source: Institute for Fiscal Studies, "Poverty & Inequality" data tables (www.ifs.org.uk/bns/bn19figs.zip)

Richest-Poorest Ratios

If we rank all households according to their income, starting from the poorest one, we can then divide the population in segments (say, the 20% poorest).

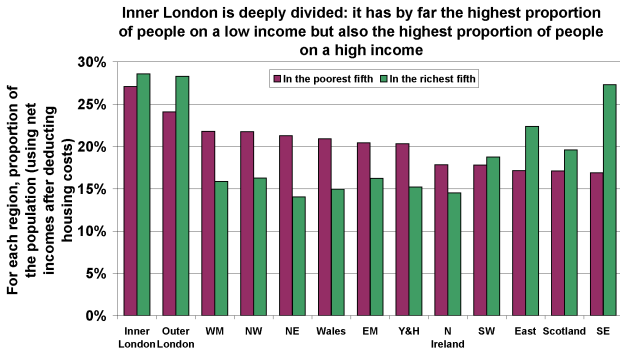
A common division is to take 100 segments -called *percentiles*- which group together the 1% poorest, the 2% poorest, etc. Sometimes, we group together the 10% poorest, the 20% poorest, etc., into *deciles*



Source: Households Below Average Income, DWP; Great Britain; updated Aug 2009

Richest-Poorest Ratios

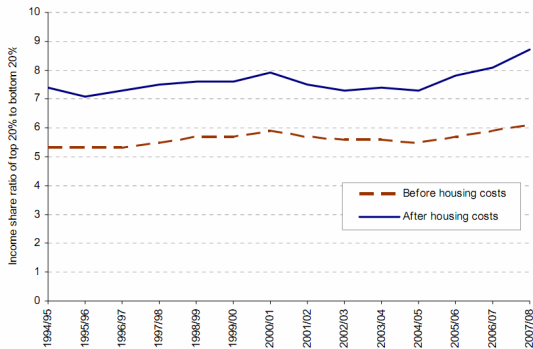
Here are the first two deciles (ie 20% poorer) and the last two deciles (ie 20% richer) by UK region:



Source: Household Below Average Income, DWP; the data is the average for the years 2005/06 to 2007/08; UK; updated Aug 2009

Richest-Poorest Ratios

Top/Bottom 20% Income Ratios, UK

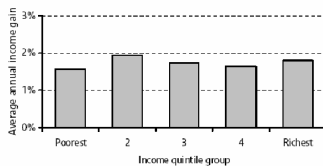


Source: DWP, HBAI 2007/08, table A3

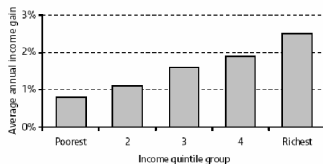
Richest-Poorest Ratios

A historical view of income inequality by political party in office

Labour: 1996–97 to 2007–08



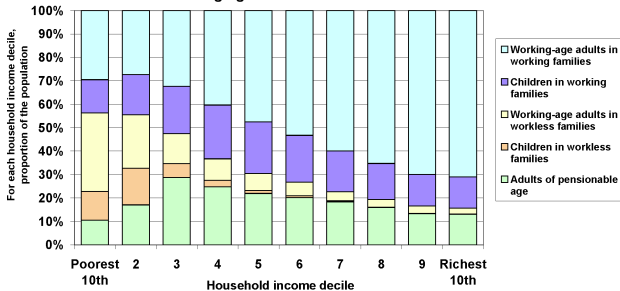
Conservatives: 1979 to 1996–97



Source: Townsend, *UK income inequality and international comparisons*, Standard Note SN/EP/3870, House of Commons, 2009

Inequality, Economic Activity and Type of Household

Within the bottom three income deciles, the proportion who are pensioners rises as income rises whilst the proportion who are in workless working-age families falls as income rises



Source: Households Below Average Income, DWP; the data is the average for 2005/06 to 2007/08; UK; updated Aug 2009

Ageing and Inequality

Perhaps surprisingly given the large demographic shift in Britain's population over the past forty years, age does not appear to be a major explanatory factor in changes in income inequality. Almost all changes in overall income inequality are accounted for by increased inequality within age groups. In particular, the large increase in inequality during the 1980s affected all age groups, not just those of working age.

When looking at earnings inequality, rather than income inequality, we do see some modest age-related trends. The relative earnings of workers towards the beginning of their careers (those aged below 25) have been falling since the 1980s, as have the relative wages of those towards the end of their careers (those aged 55-64).

Brewer et al., 2009. Accounting for changes in inequality since 1968: decomposition analyses for Great Britain. Government Equalities Office

Age and Preference for Equality

Overall, 75 per cent of the total adult population support a higher degree of income equality.

Age was not found to be important with the notable exception that the over 65s were 4.6 per cent less likely to favour income equality than all younger people.

For the under 55s, teenagers (often claimed to be idealistic) are no more supportive of income equality than their parents.

Cowling and Harding. The Desire for Income Equality Amongst the UK Adult Population. ES Working Paper WP3, Institute for Employment Studies, University of Sussex, 2007

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