Intergenerational Fairness Index 2013

Position of Younger Generations Worsens

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intergenerational foundation
Fairness for Future Generations

The Intergenerational Foundation (www.if.org.uk) is an independent, non-party-political charity that exists to protect the rights of younger and future generations in British policy-making.

Whilst increasing longevity is to be welcomed, our changing national demographic and expectations of entitlement are placing increasingly heavy burdens on younger and future generations. From housing, health and education to employment, taxation, pensions, voting, spending and environmental degradation, younger generations are under increasing pressure to maintain the intergenerational compact whilst losing out disproportionately to older, wealthier cohorts.

IF questions this status quo, calling instead for sustainable long-term policies that ensure younger and future generations are better protected by policy-makers.

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Executive Summary

Changes In The Past Year

The Intergenerational Fairness Index (IF Index) has risen from 129 in 2012 to 130 in 2013. This is the smallest rise since 2001 and, following the particularly large rises since the start of the recession in 2007, may be a sign that the pressure that younger people have experienced in the period may be lessening.

In spite of this apparent reduction in the rate of increase in intergenerational unfairness, there have been a number of significant changes amongst the individual indicators.

A number of indicators reveal a **decline** in intergenerational fairness:

- The rise in levels of government debt. Public sector net debt increased from £909.8 billion in 2010/11 to £1,026.3 billion in 2011/12 and this means that the level of public debt per person in the workforce has risen from £31,500 to £35,250.

- State pension expenditure rose from £76 billion in 2011/12 to almost £80 billion in 2012/13, meaning that the annual cost of the state pension per person in the workforce rose by over £100 and currently stands at £2,700 each year.

- The gap between unemployment levels for young people and the population average has risen further. In 2010 19.6% of adults aged under 25 were unemployed and this level rose to 21.1% in 2011. At the same time, overall unemployment amongst all adults rose more slowly from 7.8% to 8.0%.

- There were small index rises for a number of indicators that reduced intergenerational fairness. These included an increase in the proportion of household income which is spent on housing costs, a decline in the affordability of house purchases for those aged under 30 and a small but unerring increase in global CO_2 emissions.

Those indicators that have seen a notable **improvement** in terms of intergenerational fairness between 2012 and 2013 IF indexes include:

- The unfunded liabilities associated with public sector occupational pensions fell from £1,015.6 billion to £893.3 billion. This is unlikely to be able to be repeated consistently as it was largely the result of four one-off factors:

    - The move to career average pensions
    - The move to pensions being linked to Consumer Price Index (CPI) rather than Retail Price Index (RPI)
    - The increase in actual and projected retirement ages
    - Salary increases being kept at 1% for most of the state sector

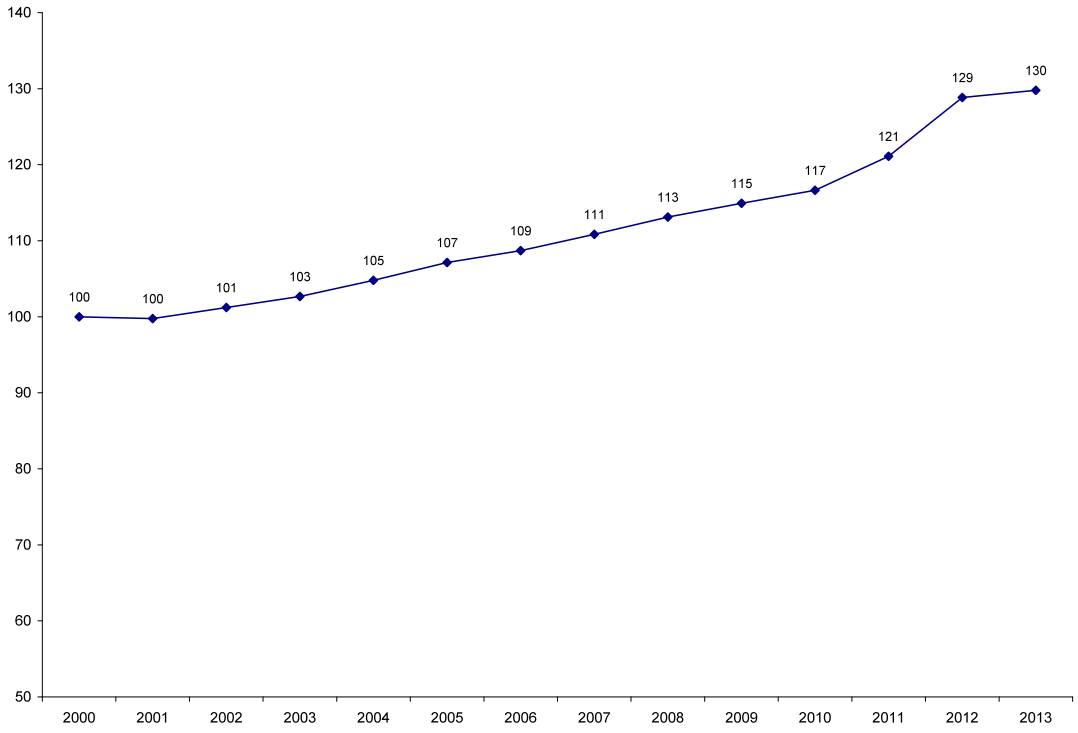
- The pain of these increases was not shared equally. The over-50s have been exempted from increases in retirement ages and from the move to pensions based on career-average salaries.

- Following the rise in UK Greenhouse Gas emission between 2010 and 2011 from 572 to 590 million tonnes CO_2 equivalent, levels fell back to 549 MT CO_2e in 2012.

- After the further decline in levels of house building between 2009 and 2010, when the number of homes completed in Great Britain fell from 149,000 to 129,200, numbers completed increased in 2011 to 134,900.

- Other smaller improvements were observed in the proportion of students achieving 5 or more A* to C grades at GCSE/equivalent which rose from 79.6% in 2010/11 to 81.8% in 2011/12; higher levels of spending on education as a proportion of GDP; and an increase the proportion of younger people voting in elections between 2011 and 2012.

Chart 1. IF Index – 2000 to 2013 (base level of 100 in the year 2000)



Background

Today's policy decisions affect younger and future generations. The IF Index is the first attempt to systematically measure the impact that governmental policies have on young people on a year-to-year basis.

The IF Index reveals that, over the past 23 years intergenerational unfairness has steadily increased, rising from 82 in 1990 to 130 in 2013.

The rise has been most pronounced since the financial crisis of 2007 i.e – since then, the index has worsened by an average of 3 points each year, whereas previously the worsening averaged about 2 points each year.

The IF index highlights that, whilst government borrowing and pension debt have increased steadily, there has also been an increased shift in favour of the older generation through higher charges for education, rising youth unemployment, high housing costs and – particularly pressing – a shortage in the number of homes being built.

Why This Matters

The rising level of intergenerational unfairness should matter to everyone. The usual focus on simple measures of inequality between rich and poor misses the important inequalities between generations. This index highlights the increasing problem of poorer young people financing richer older people.

A rising index suggests that younger generations may be less inclined to support a system that puts the interests of older generations ahead of their own. Young people appear to be becoming increasingly disillusioned, and indeed one of the measures tracks the "democratic deficit" in terms of ageing councillors and falling numbers of young people voting.

A rising index puts the social contract between the generations at risk

Construction of the IF Index

The IF Index is an expression of how fairness across the generations is changing over time. It works by using quantitative data, openly available to all, that cover some of the most important aspects of our society (e.g. housing, employment etc).

IF identified nine indicators that most affect our lives – including housing, government debt, the pensions burden, and the environment – and put them together to create a measure of how things have changed over recent years. Not all the indicators have got worse – some, such as UK carbon emissions, have been improving.

All the data series go back to 1990 and together they measure how things have changed over the last 23 years. IF has been careful to exclude the effects of inflation by using a GDP deflator, and the effect of population growth has also been excluded by looking at the numbers on a per head basis. All figures are taken from official sources and this report gives the reasoning behind the choice of indicators and the methodology used, together with the precise sources of the data.

The use of long-running data series, which go as far back in time as possible, is crucial, in order to be able to build up an historic picture of how these component measures are evolving.

IF has also attempted to make use of data series that can be compared between countries and work has commenced on providing objective comparisons between the UK and other countries.

The Index is meant to be as open to scrutiny (and improvement) as possible. All of the data used, and how it is used, are outlined in detail below.

The IF Index is made up of data from the following **9 content areas**:

- Unemployment
- Housing
- Pensions
- Government Debt
- Participation in Democracy
- Health
- Income
- Environmental Impact
- Education

The Index measures changes in two areas:

- The extent to which young people who are alive today are at a disadvantage compared to the rest of society.
- The degree to which future generations (those who are not yet born) will be impacted by the ways in which we live our lives today or by government actions (i.e. how much they may be advantaged or disadvantaged by the actions of those alive today).

An increase in the Index indicates a worsening position for younger people in our society. The table below outlines which type of data is being used for each of the content areas.

Content Area	Younger Persons Comparison	Future Generations
1. Unemployment	Unemployment amongst younger people compared to UK average.	
2. Housing. Measure A – Affordability	House price affordability compared to income levels of young people.	
2. Housing. Measure B – Costs	Housing costs as a % of disposable income.	
2. Housing. Measure C – House building		Numbers of houses built as a proportion of number of households.
3. Pensions. Measure A – State Pension		Cost of state pension payments per person in the UK workforce.
3. Pensions. Measure B – Unfunded Public Sector Pensions		Cost of unfunded public sector occupational pensions per person in the UK workforce.
4. Government Debt		Public sector debt per person in the UK workforce.
5. Participation in Democracy. Measure A – Age of Councillors	Average age of Councillors in England & Wales.	
5. Participation in Democracy. Measure B – Voting	Participation in voting in General Elections by younger people.	
6. Health	Under 60s usage of selected health services.	
7. Income	Comparison of the income levels of young people to the UK average.	
8. Environmental Impact. Measure A – UK GHG Emissions		UK Greenhouse Gas emissions.
8. Environmental Impact. Measure B – CO_2 Levels		Levels of CO_2 in the atmosphere.
9. Education. Measure A – Levels of Spend	Spend on Education as a proportion of GDP.	
9. Education. Measure B – Tuition Fees	Average tuition fee liability of students in Higher Education.	
9. Education. Measure C – GCSE Pass Rate	% of School Leavers of Any Age Achieving 5 or more A*–C Equivalent Pass Grades.	

IF has attempted to ensure that there is no element of double counting. This is particularly problematic in relation to government debt, where there is a danger that the costs of large elements overlap, such as the State Pension and Unfunded Public Sector Occupational Pensions, which are already included in our Pensions measure. As far as is possible, therefore, the costs of these two elements are omitted from the calculations of government debt.

It has not been possible to define the young in the same way across the sets of data which are available, but IF does not believe that the differences would materially affect the results. The age groupings that have been used do not allow direct comparison across the data sets. For that reason, the decision about the definition of the young was based on what appears most appropriate with the data that are available for that component measure.

Several strong candidates for inclusion in the Index have been omitted because of a lack of suitable data. For example a measure for the proportion of the population over time holding a degree has not been located. Other component measures have been omitted where additional factors are so dominant that they skew the picture for that measure. For example, attempting to produce a measure for inherited wealth is very difficult because the data are skewed so heavily by the increase in house prices over the past 20 years, a factor which is already included in the Index through some of the other housing measures. IF remains open to inclusion of other data sources if appropriate measures are available.

The following pages detail how each of the 9 component content areas have been gathered and included in the Index.

The process by which the different data sources have then been combined into the IF Index is explained at the end of this report.

Changes in Methodology

There have been a number of minor adjustments to the methodology between the inaugural IF Index in 2012 and the 2013 index.

In **Democratic Participation Measure B – Participation in Voting**, a weakness with the measure was that the age profile of the voters was only identified for a general election when specific research was undertaken into voting patterns. As a result, smoothing data had to be employed for the years between general elections. Since the 2010 general election, however, the Electoral Commission has been undertaking research into the profile of voters for those elections that have taken place that year (typically in early May). The results of this research are now being used to provide an annual update for this measure.

No new data has been identified for **Education – Measure B** since 2009/10. As a result, we have made use of the most recently available data (from 2009/10) and made an adjustment to take into account the effects of inflation since then. If data for this measure is not available for the 2014 index, we will endeavour to identify an alternative measure which gives expression to the cost associated with Higher Education.

Latest Data. In order to make the data used as up-to-date as possible, the latest available data for each indicator are being used in the index.

The 2013 IF Index

The IF Index sets its base at 100 in the year 2000; however the Index runs back to 1990 in order to provide historical context for its movements. Most of the component measures employed have data that go back to 1990. Data for some measures, however, do go back far further. The table below indicates how the different sets of data have been introduced.

Year	Component Measures
From 1990	Unemployment, Pensions (Measure A – State Pension Costs), Government Debt, Democracy (Measure B – Participation in Voting), Environmental Impact (Measure B – Global CO2 Emissions), Education (Measure A – Levels of Spend; Measure C – GCSE Pass Rate), Housing (Measure C – House building).
From 1992	Environmental Impact (Measure A – UK GHG Emissions).
From 1993	Pensions (Measure B – Unfunded Public Sector Occupational Pensions).
From 1997	Housing (Measure B – Costs).
From 1999	Democracy (Measure A – Average Age of Councillors).
From 2000	Housing (Measure A – Affordability), Health, Income, Education (Measure B – HE Tuition Fees).

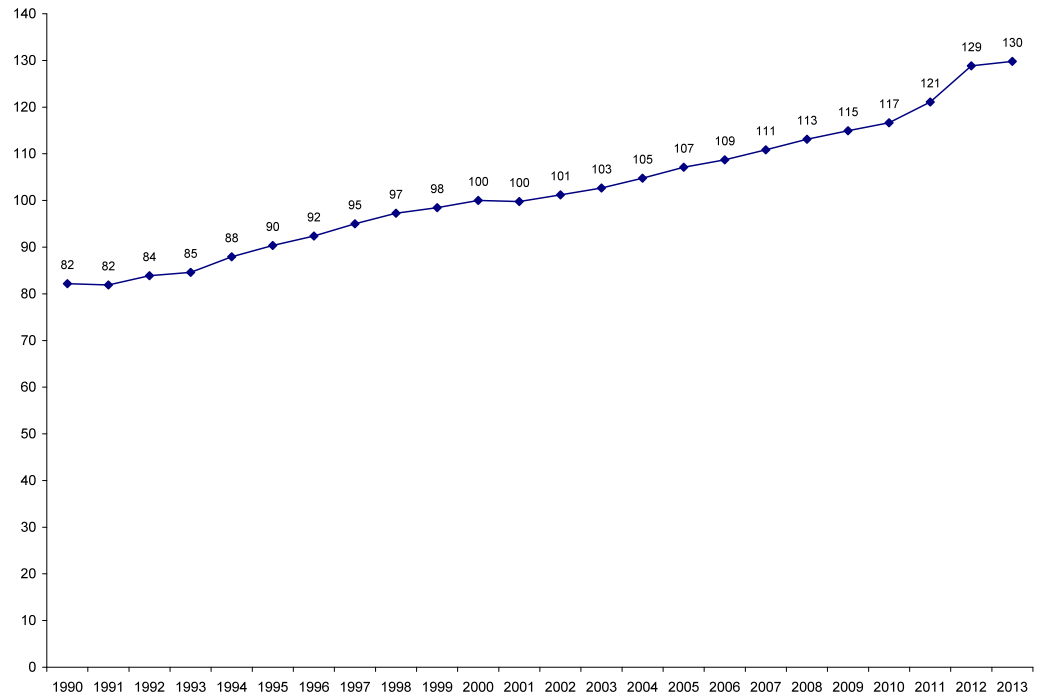
The IF Index is structured such that if the Index figure rises, it demonstrates that intergenerational fairness is declining and if it falls it suggests that the position of young people is improving. In all of the component measures, with the exception of Education (Measure A – Level of Spend as % of GDP), Education (Measure C – GCSE Pass Rate) and Housing (Measure C –Levels of House building), an increase in the level of the component data represents a decline in intergenerational fairness. In creating the index value for the three measures identified above, therefore, an adjustment has been made to ensure that the rise in this component data serves to reduce rather than increase intergenerational unfairness.

Three of the component measures, Pensions (Measure B – Unfunded Public Sector Occupational Pensions), Education (Measure B – HE Tuition Fees) and Government Debt, make use of source data that have not taken inflation or changes to GDP into account; as a result, the source data has been adjusted by the latest GDP deflator data (www.hm-treasury.gov.uk/d/gdp_deflators.xls).

- The 2013 IF Index results are as follows:

Year	Index	Year on Year Change
1990	82	
1991	82	0
1992	84	2
1993	85	1
1994	88	3
1995	90	2
1996	92	2
1997	95	3
1998	97	2
1999	98	1
2000	100	2
2001	100	0
2002	101	1
2003	103	2
2004	105	2
2005	107	2
2006	109	2
2007	111	2
2008	113	2
2009	115	2
2010	117	2
2011	121	4
2012	129	8
2013	130	1

Chart 2. IF Index – 1990 to 2013 with a base level of 100 in the year 2000



Understanding Changes in the Index: 1990–2013

What are the significant factors that have caused the IF Index to move from a level of 82 in 1990 to its current figure of 130?

A. 1990 to 1995 – IF Index rose from 82 to 90

The increase in the Index in this initial period was principally driven by sharp rises in the value of unfunded liabilities for public sector occupational pensions as well as increases in the value of government debt. At the same time, levels of unemployment amongst younger people continued to increase in comparison to the national average and there was a small but steady increase in the costs of the liabilities for the state pension amongst working people.

Offsetting these increases were the benefits of rising spending on education as a percentage of GDP and a steady decline in the UK's emissions of greenhouse gases.

B. 1995 to 2000 – IF Index rose from 90 to 100

The value of unfunded liabilities for public sector occupational pensions continued to rise along with the gap between levels of unemployment for young people and the national average. The impacts of these indicators were balanced to a degree by a decline in overall levels of government debt from 1998 onwards, a continued rise in spending on education and significant falls in UK greenhouse gas emissions.

C. 2000 to 2005 – IF Index rose from 100 to 107

Four principal factors lie behind the increase in the Index that occurred in the early years of the new century. The most significant were the increases in housing costs as a proportion of disposable incomes and unfunded liabilities for public sector occupational pensions. Youth unemployment also rose. The gap between levels of voting by young people compared to the population average also reached its highest level at this time.

D. 2005 to 2013 – IF Index rose from 107 to 130

Some factors have improved intergenerational fairness in the past five years. These include a modest decline in house prices (mostly outside the southeast of England), continuing increases in levels of spending on education and a continuing fall in the level of UK greenhouse gas emissions.

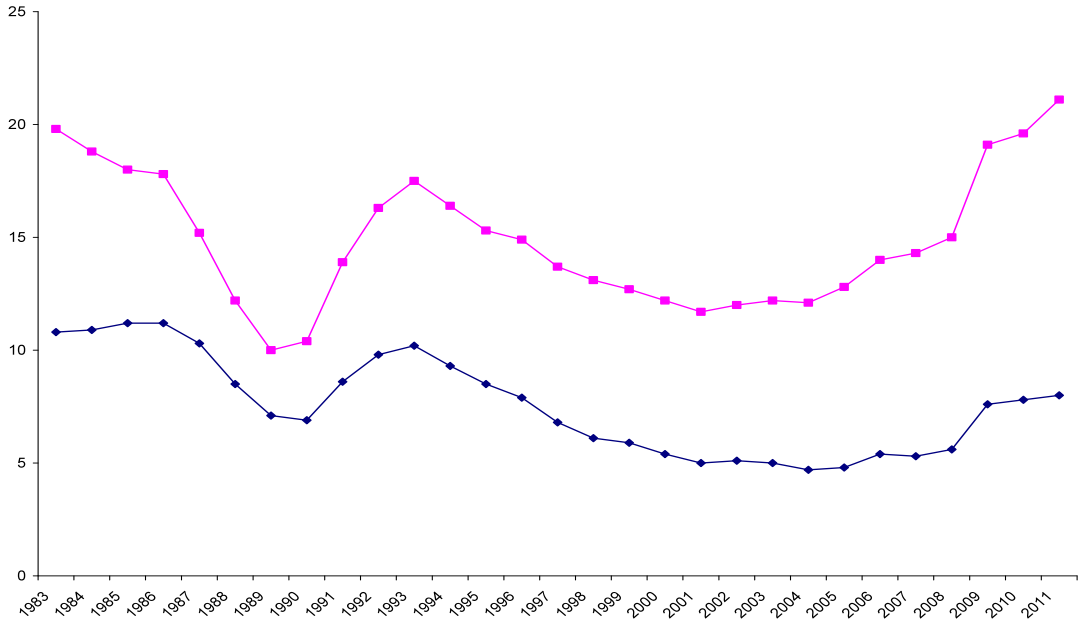
These, however, have been outweighed by significant increases in other areas. Most striking are the rises in the value of government debt and the costs of unfunded liabilities for public sector occupational pensions. These factors coupled with a decline in levels of housebuilding contributed to the Index's sharp rise between 2010 and 2012.

The Component Measures

1. Unemployment

Purpose of Measure	To assess levels of unemployment amongst younger people compared to the UK average.
Measurement	The ratio compares the proportion aged under 25 who are unemployed to the average level of unemployment in the UK.
Data Sources	Eurostat: http://epp.eurostat.ec.europa.eu (comparing UK unemployment rate (%), annual average, for those aged under 25 to total unemployment rate).
Length of data	From 1983

Chart 3. Proportion (%) of those aged under 25 (red line) who are unemployed compared to total UK unemployment (blue line)



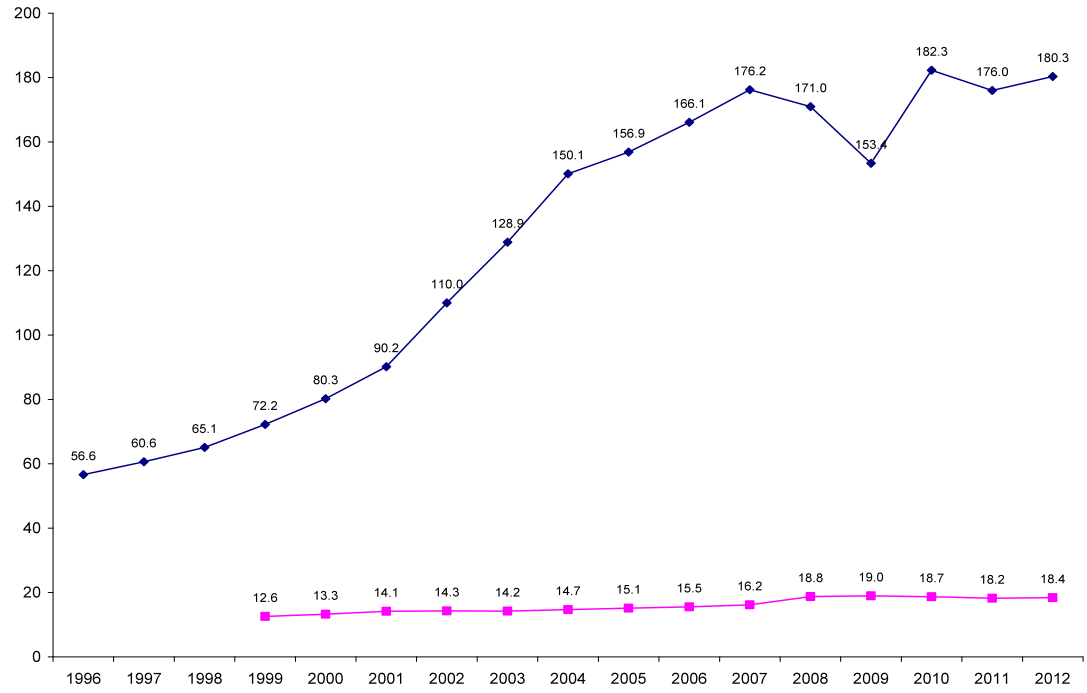
Resulting Ratio of Youth unemployment – proportion of those aged 25 who are unemployed divided by the average UK level of unemployment

Year	Ratio		Year	Ratio		Year	Ratio
1983	1.83		1993	1.72		2003	2.44
1984	1.72		1994	1.76		2004	2.57
1985	1.61		1995	1.80		2005	2.67
1986	1.59		1996	1.89		2006	2.59
1987	1.48		1997	2.01		2007	2.70
1988	1.44		1998	2.15		2008	2.68
1989	1.41		1999	2.15		2009	2.51
1990	1.51		2000	2.26		2010	2.51
1991	1.62		2001	2.34		2011	2.64
1992	1.66		2002	2.35			

2. Housing. Measure A – Affordability

Purpose of Measure	To assess levels of affordability of UK housing amongst younger people.
Measurement	The ratio compares the median levels of income amongst those aged 20 to 29 (22 to 29 from 2008 onwards) to median house price values in England and Wales.
Data Sources	1. House Prices: Land Registry https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/49810/582.xls 2. Income Data: http://www.ons.gov.uk/ons/rel/ashe/annual-survey-of-hours-and-earnings/2012-provisional-results/2012-provisional-table-6.zip PROV - Age Group Table 6.7a Annual pay - Gross 2012.xls
Length of data	1. House Prices: From 1996 2. Income Data: From 1999

Chart 4. Median Annual Income of those aged 20 to 29 (£000s) (red line) compared to median house prices (£000s) (blue line)



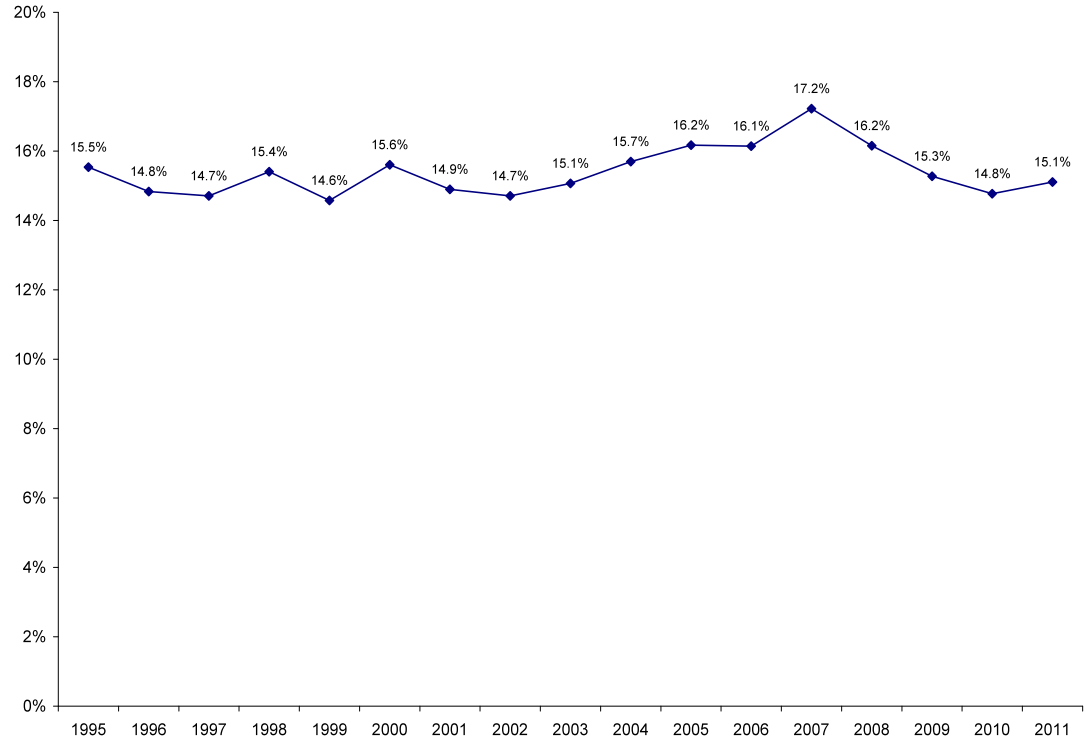
Resulting Ratio of House Price Affordability – Ratio of median house prices to median annual income levels of those aged 20 to 29

Year	Ratio		Year	Ratio		Year	Ratio
1999	5.75		2004	10.23		2009	8.78
2000	6.05		2005	10.36		2010	9.75
2001	6.37		2006	10.69		2011	9.65
2002	7.70		2007	10.90		2012	9.81
2003	9.07		2008	9.12			

2. Housing. Measure B – Housing Costs

Purpose of Measure	To assess the proportion of disposable income which is spent on housing costs.
Measurement	The ratio expresses housing costs as a proportion of disposable income.
Data Sources	1. ONS Family Expenditure Survey. http://www.ons.gov.uk/ons/rel/family-spending/family-spending/family-spending-2012-edition/rft---table-4-1.xls
Length of data	From 1995

Chart 5. Housing Costs as a Proportion of Disposable Income



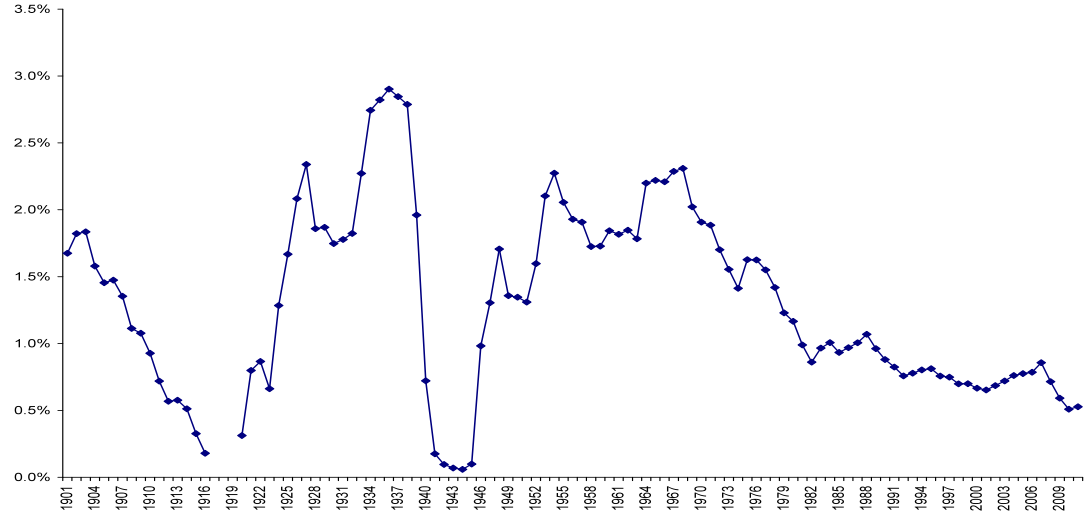
Housing Costs and Disposable Income

Year	Housing Costs (£pw)	Household Disposable income (£pw)	Housing as % of Disposable Income		Year	Housing Costs (£pw)	Household Disposable income (£pw)	Housing as % of Disposable Income
1995	76.30	491	15.5%		2004	95.90	611	15.7%
1996	74.90	505	14.8%		2005	98.50	609	16.2%
1997	76.20	518	14.7%		2006	98.80	612	16.1%
1998	82.10	533	15.4%		2007	104.70	608	17.2%
1999	80.60	553	14.6%		2008	102.90	637	16.2%
2000	87.70	562	15.6%		2009	93.80	614	15.3%
2001	89.10	598	14.9%		2010	89.80	608	14.8%
2002	88.40	601	14.7%		2011	88.70	587	15.1%
2003	90.10	598	15.1%					

2. Housing. Measure C – House building

Purpose of Measure	Measure of levels of house building in relation to the need for new homes.
Measurement	The ratio expresses the numbers of houses built as a proportion of the number of households. A decrease in numbers built indicates a reduction in intergenerational fairness. This has been taken into account when this data is introduced into the index.
Data Sources	1. House building. To 1980: http://books.google.co.uk/books?id=Oyg9AAAAIAAJ&pg=PA382&source=gbs_toc_r&cad=4#v=onepage&q&f=false 1980 onwards: http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/housebuilding/livetables/ 2. Households: Various based on ONS and Census data. Current years http://www.ons.gov.uk/ons/rel/ghs/general-lifestyle-survey/2011/rft-chpt-3-ref-table.xls
Length of data	From 1901

Chart 6. Number of Houses Built in GB since 1901 as a proportion of the No. of Households



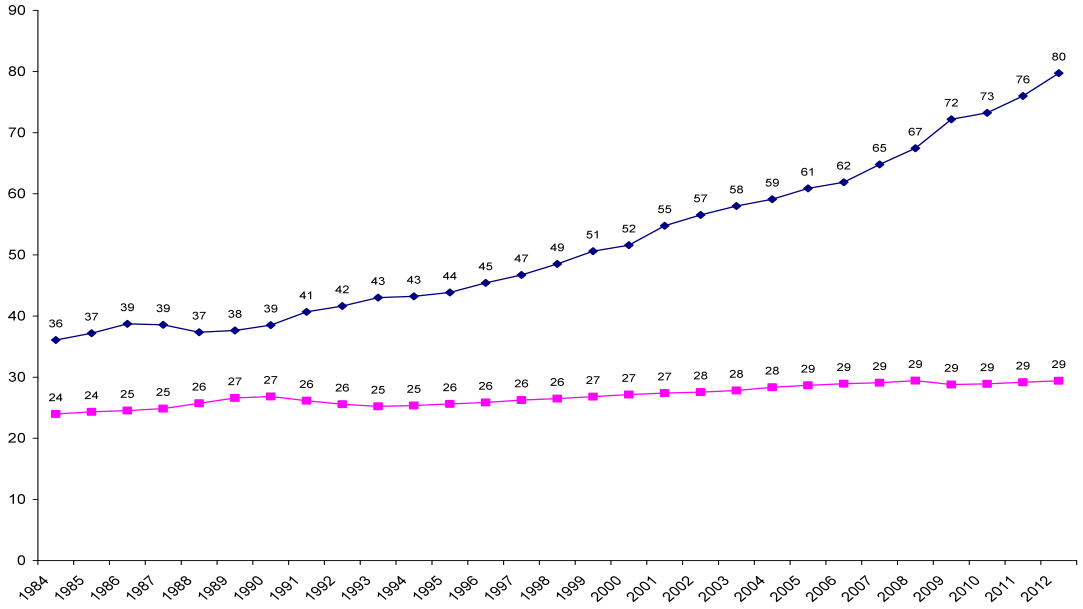
Total Number of Houses Built Per Year (in '000s)

Year	No.	Year	No.	Year	No.	Year	No.	Year	No.	Year	No.
1900	139.7	1920	29.7	1940	95.1	1960	297.8	1980	233.7	2000	165.4
1901	139.7	1921	76.1	1941	23.4	1961	296.1	1981	199.8	2001	160.4
1902	153.8	1922	84.5	1942	12.9	1962	305.4	1982	175.8	2002	168.1
1903	156.9	1923	66.1	1943	9.5	1963	298.9	1983	199.3	2003	176.0
1904	136.6	1924	131.2	1944	8.1	1964	373.7	1984	210.0	2004	187.9
1905	127.4	1925	174.2	1945	13.8	1965	382.3	1985	196.7	2005	192.5
1906	130.6	1926	222.3	1946	138.5	1966	385.5	1986	206.4	2006	194.8
1907	121.3	1927	254.9	1947	186.0	1967	404.4	1987	216.5	2007	211.9
1908	100.9	1928	206.8	1948	245.9	1968	413.7	1988	232.4	2008	177.5
1909	98.8	1929	212.2	1949	197.7	1969	366.8	1989	211.2	2009	149.0
1910	86.0	1930	202.4	1950	198.2	1970	350.4	1990	195.3	2010	129.2
1911	67.5	1931	210.0	1951	194.8	1971	350.6	1991	184.5	2011	134.9
1912	53.4	1932	218.1	1952	239.9	1972	319.3	1992	172.0		
1913	54.2	1933	275.2	1953	318.8	1973	294.1	1993	178.9		
1914	48.3	1934	336.7	1954	347.8	1974	269.5	1994	187.0		
1915	30.8	1935	350.5	1955	317.4	1975	313.0	1995	191.5		
1916	17.0	1936	365.0	1956	300.6	1976	315.2	1996	180.7		
1917	N/A	1937	362.2	1957	300.1	1977	303.3	1997	180.9		
1918	N/A	1938	359.1	1958	273.7	1978	279.8	1998	171.0		
1919	N/A	1939	255.6	1959	276.7	1979	244.4	1999	172.5		

3. Pensions. Measure A – State Pension Costs

Purpose of Measure	To assess the changing cost of the state pension in relation to the size of the UK workforce. The measure of the UK workforce is used, as it will be those who are currently in that force who will be paying for its costs. This is important because it is people who are currently in work who pay for the state pension through their taxes.
Measurement	The ratio divides the total cost of the state pension by the numbers in the UK workforce.
Data Sources	1. State Pension Costs statistics.dwp.gov.uk/asd/asd4/autumn_2012_211212.xls 2. Workforce Size: OECD http://stats.oecd.org Annual Labour Force Statistics – Total Employment
Length of data	1. State Pension Costs: From 1948 2. Workforce Size: From 1984/85

Chart 7. Size of the UK employed workforce (millions) (red line) compared to total cost of state pension (£ billions – real terms, 2012/13 Prices (blue line))



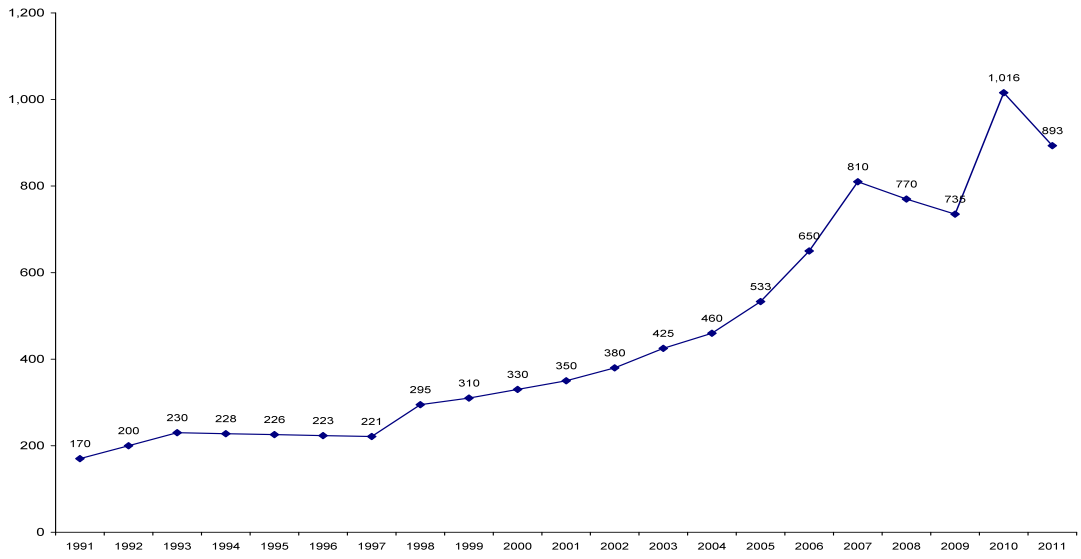
State Pension Costs per working person (£ – real terms, 2012/13 prices)

Year	£		Year	£		Year	£
1984	1,505		1994	1,704		2004	2,084
1985	1,530		1995	1,712		2005	2,125
1986	1,578		1996	1,757		2006	2,140
1987	1,552		1997	1,778		2007	2,227
1988	1,451		1998	1,831		2008	2,291
1989	1,414		1999	1,887		2009	2,506
1990	1,435		2000	1,899		2010	2,533
1991	1,556		2001	1,998		2011	2,606
1992	1,628		2002	2,052		2012	2,710
1993	1,706		2003	2,085			

3. Pensions. Measure B – Unfunded Public Sector Pension Costs

Purpose of Measure	To assess the cost of unfunded public sector pensions in relation to the size of the UK workforce.
Measurement	The ratio divides the total cost of the unfunded liabilities of UK Public Sector Occupational Pensions by the numbers in the UK workforce.
Data Sources	1. Public Sector Occupational Pensions Liabilities (adjusted using GDP Deflator). Data from 1991 to 1998: http://www.geog.ox.ac.uk/news/events/phclcs/Clark.pdf Data from 1999 to 2001: http://www.iea.org.uk/sites/default/files/publications/files/upldbook329pdf.pdf Data from 2002 to 2008: ONS Pension Trends Chapter 14. Data for 2010: Estimates from http://www.public-sector-pensions-commission.org.uk/wp-content/themes/pspc/images/Public-Sector-Pensions-Commission-Report.pdf Data for 2011: http://www.hm-treasury.gov.uk/d/hutton_responses_p_r.pdf - page 309 2. Workforce Size: OECD http://stats.oecd.org (As Measure A)
Length of data	1. Public Sector Occupational Pensions Liabilities: From 1991 2. Workforce Size: From 1984

Chart 8. Cost of unfunded liabilities of UK Public Sector Occupational Pensions (£ billions – real terms, 2012/13 prices)



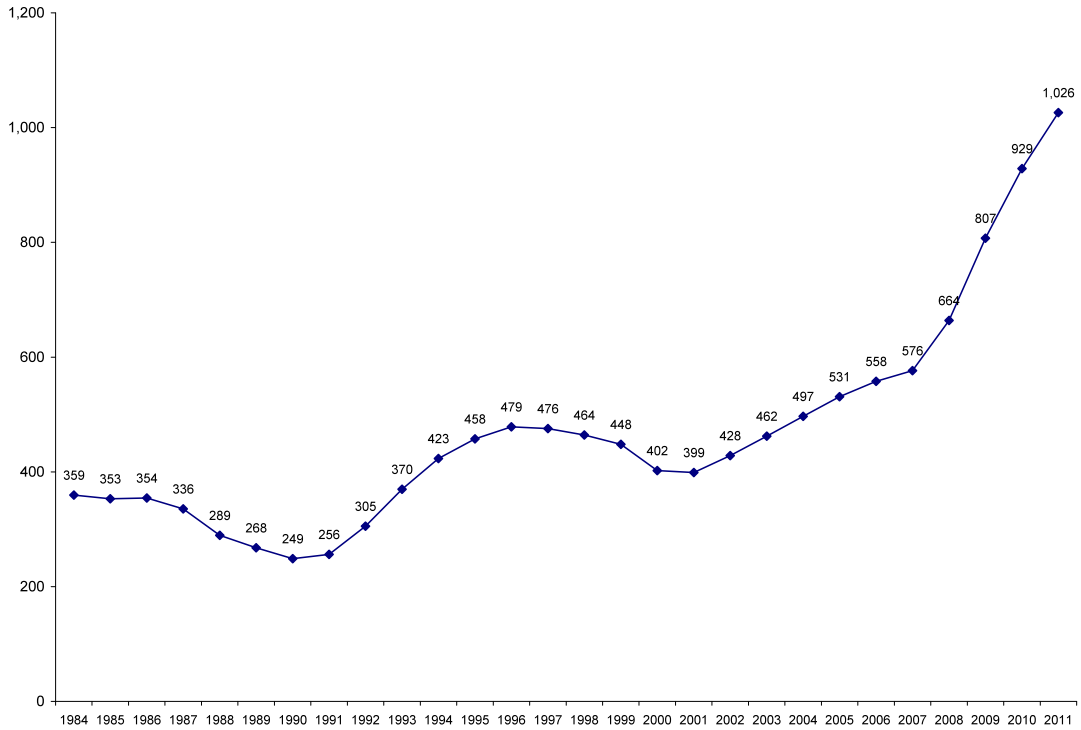
Resulting liability for unfunded liabilities of UK Public Sector Occupational Pensions per person in the workforce (£ billions – real terms, 2012/13 prices)

Year	£		Year	£		Year	£
1991	10,293		1998	14,989		2005	21,782
1992	12,003		1999	15,252		2006	25,577
1993	13,714		2000	15,917		2007	30,998
1994	13,969		2001	16,464		2008	28,257
1995	14,224		2002	17,380		2009	27,213
1996	14,479		2003	18,793		2010	36,450
1997	14,734		2004	19,450		2011	31,069

4. Government Debt

Purpose of Measure	To assess level of public debt per employed person.
Measurement	The ratio divides the total value of public debt of the UK government (excl. state pension and Unfunded Public Sector Occupation Pensions) by the numbers in the UK workforce
Data Sources	1. Level of Public Debt (adjusted using GDP Deflator): http://www.hm-treasury.gov.uk/d/ public_finances_databank.xls Worksheet A5 2. Workforce Size: OECD http://stats.oecd.org (As Pensions Measure A)
Length of data	1. Level of Public Debt: From 1974 2. Workforce Size: From 1984

Chart 9. Levels of Government Debt (public sector net debt, £ Billions)



Resulting level of Government Debt per person in the workforce (£/person)

Year	£		Year	£		Year	£
1984	14,992		1994	16,685		2004	17,514
1985	14,526		1995	17,858		2005	18,536
1986	14,440		1996	18,510		2006	19,283
1987	13,508		1997	18,106		2007	19,807
1988	11,244		1998	17,520		2008	22,548
1989	10,065		1999	16,706		2009	28,020
1990	9,265		2000	14,812		2010	32,110
1991	9,797		2001	14,555		2011	35,197
1992	11,943		2002	15,548			
1993	14,667		2003	16,614			

5. Participation in Democracy. Measure A – Age of Councillors

Purpose of Measure	To assess the age of Councillors (excluding Town and Parish Councillors) as a guide as to the ages of those who make significant decisions about the places in which we live.
Measurement	The average age of Councillors over time.
Data Sources	Regular (but not annual) research by the Local Government Association): http://www.lga.gov.uk/lga/core/page.do?pageId=1165045
Length of data	LGA Research: 1997 onwards

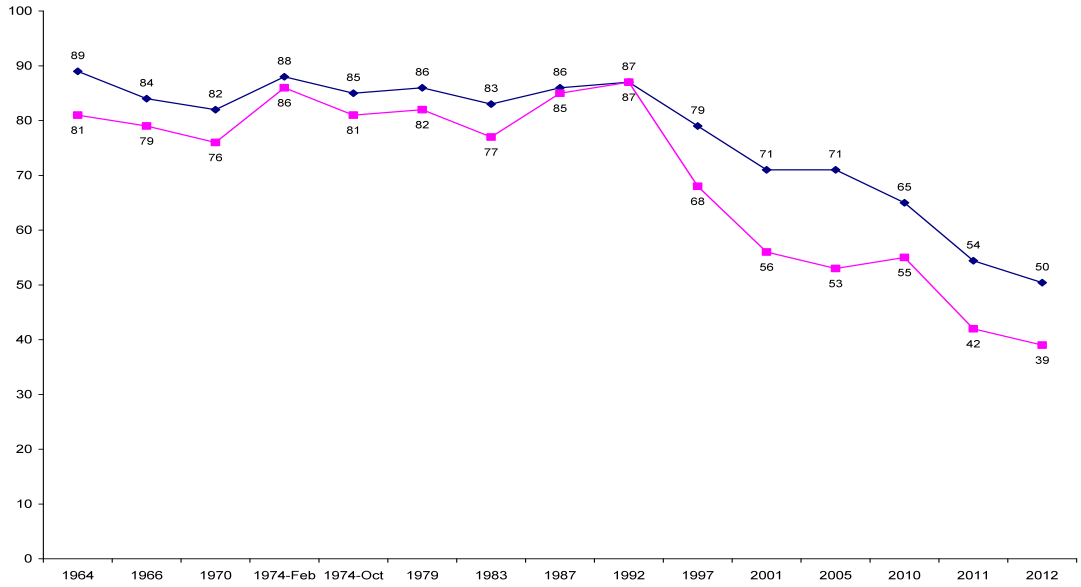
Average Age of Councillors (excluding Town and Parish Councillors) based on the years that the LGA has undertaken its research

Year	Average Age
1997	55.4
2001	56.9
2004	57.8
2006	58.3
2008	58.8
2010	59.7

5. Participation in Democracy. Measure B – Voting

Purpose of Measure	To compare levels of participation in voting at General Elections amongst younger people with the population average.
Measurement	Comparing the proportion of those aged 25 to 34 who have voted in General Elections to the population average. The Electoral Commission now undertakes research every year into that year's election. As a result, findings for the 2011 and 2012 elections are also included.
Data Sources	1. 1964 to 2005 British Election Survey http://www.essex.ac.uk/bes/Papers/ec%20report%20final.pdf 2. 2010 Election http://www.ipsos-mori.com/researchpublications/researcharchive/2613/How-Britain-Voted-in-2010.aspx?view=wide3. http://www.electoralcommission.org.uk/__data/assets/pdf_file/0017/141263/Post-polling-day-public-opinion-report-for-5-May-2011.pdf 4. http://www.electoralcommission.org.uk/__data/assets/pdf_file/0004/150529/May-3-2012-GB-post-poll-public-opinion-report.pdf
Length of data	General Elections: 1964 onwards

Chart 10. Proportion of the UK adult pop'n voting in General Elections from 1964 (blue line) compared to the % of those aged 25 to 34 who voted (red line)



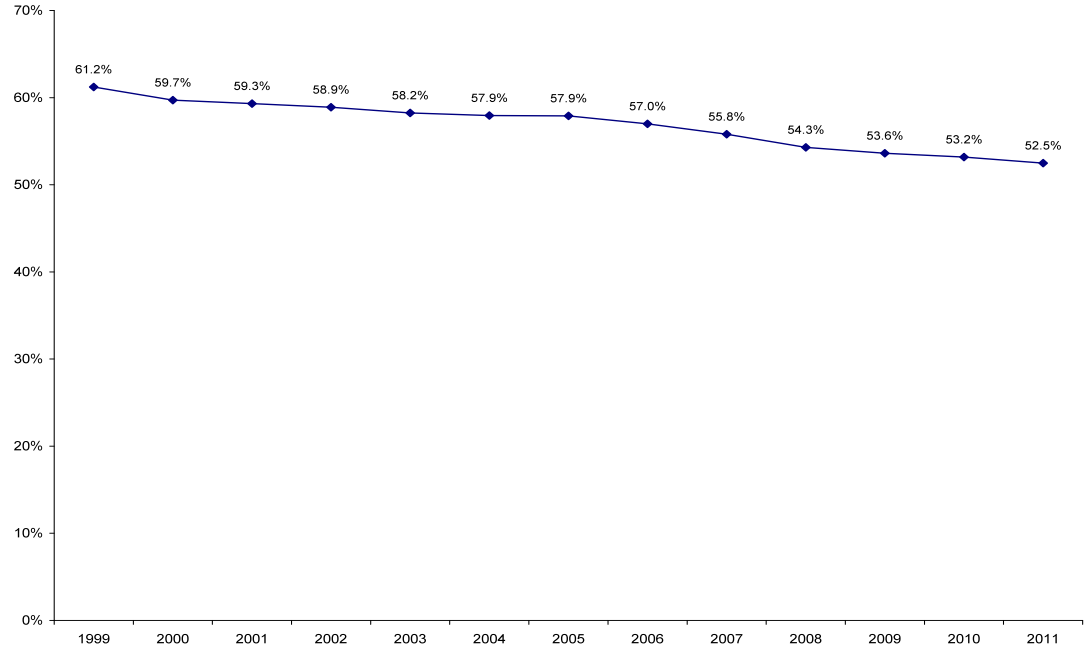
Ratio of Participation by Younger People. Proportion of UK adult pop'n voting in elections since 1964 divided by the proportion of those aged 25 to 34 who voted.

Year	Ratio		Year	Ratio		Year	Ratio
1964	1.10		1979	1.05		2001	1.27
1966	1.06		1983	1.08		2005	1.34
1970	1.08		1987	1.01		2010	1.18
1974-Feb	1.02		1992	1.00		2011	1.30
1974-Oct	1.05		1997	1.16		2012	1.29

6. Health

Purpose of Measure	To compare usage of selected medical services amongst younger people (for this measurement, those aged under 60).
Measurement	To compare the usage of inpatient treatments and operations and other procedures by those aged under 60 with the total.
Data Sources	Hospital Episode Statistics: http://www.hscic.gov.uk/searchcatalogue?productid=9161&q=title%3a%22hospital+episode+statistics%22&sort=Relevance&size=10&page=1#top Inpatient Treatment http://www.hscic.gov.uk/catalogue/PUB08288/hosp-epis-stat-admi-sha-resi-11-12-tab.xls Operations and Procedures http://www.hscic.gov.uk/catalogue/PUB08288/hosp-epis-stat-admi-tot-ops-11-12-tab.xls
Length of data	From 1999

Chart 11. Proportion of inpatient treatments and operations and other procedures undertaken amongst those aged under 60



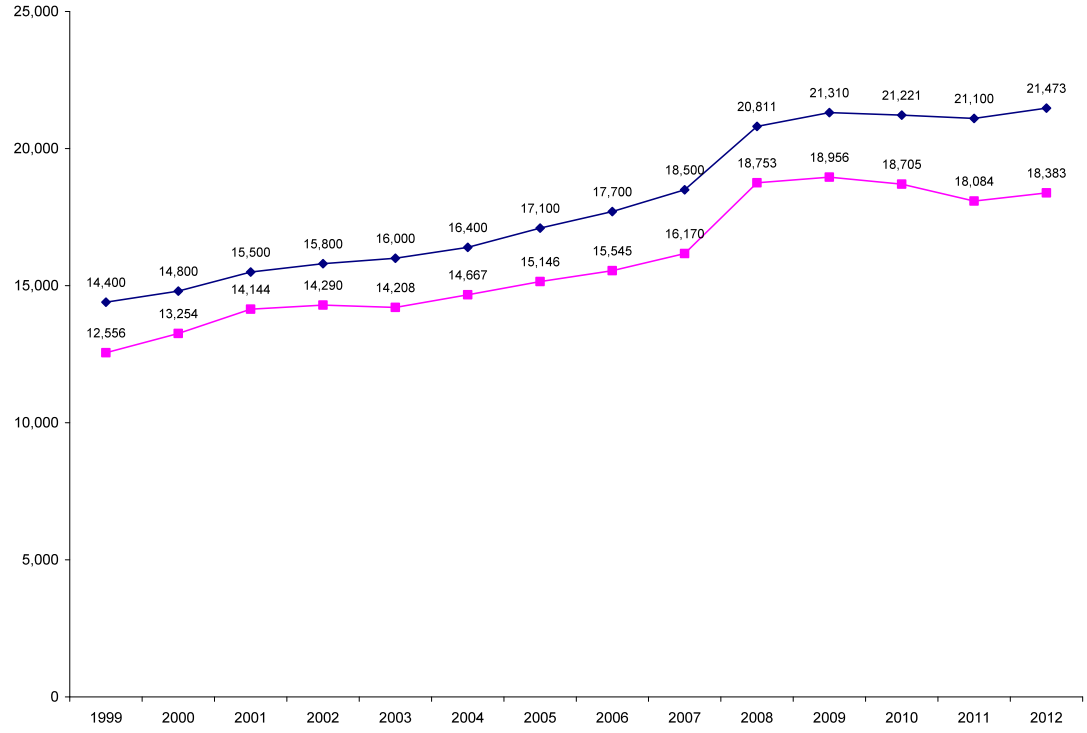
Total numbers of inpatient treatments and operations and other procedures comparing the numbers undertaken amongst those aged 60 and over with those undertaken amongst those aged under 60

Year	Undertaken with Those Aged 60/+	Undertaken with Those Aged Under 60	Total Undertaken		Year	Undertaken with Those Aged 60/+	Undertaken with Those Aged Under 60	Total Undertaken
1999	9,510,439	15,016,083	24,526,522		2006	13,766,107	18,238,628	32,004,735
2000	10,026,240	14,858,850	24,885,090		2007	15,629,627	19,739,912	35,369,539
2001	10,155,575	14,806,529	24,962,104		2008	17,702,045	21,031,217	38,733,262
2002	10,857,895	15,556,047	26,413,942		2009	19,164,097	22,158,302	41,322,399
2003	11,322,576	15,793,264	27,115,840		2010	20,214,006	22,964,688	43,178,694
2004	11,790,156	16,245,326	28,035,482		2011	21,240,546	23,455,501	44,696,047
2005	12,484,130	17,168,272	29,652,402					

7. Income

Purpose of Measure	To compare median income levels amongst the young to the population average (amongst those in employment).
Measurement	Comparing the median income levels of the young (20 to 29 (22 to 29 from 2008 onwards)) to the population average.
Data Sources	http://www.ons.gov.uk/ons/datasets-and-tables/index.html?pageSize=50 &sortBy=none&sortDirection=none&newquery=ASHE
Length of data	From 1999

Chart 12. Median annual income (£) of all in employment in the UK (blue line) compared to the median annual income of those aged 20 to 29 (red line)



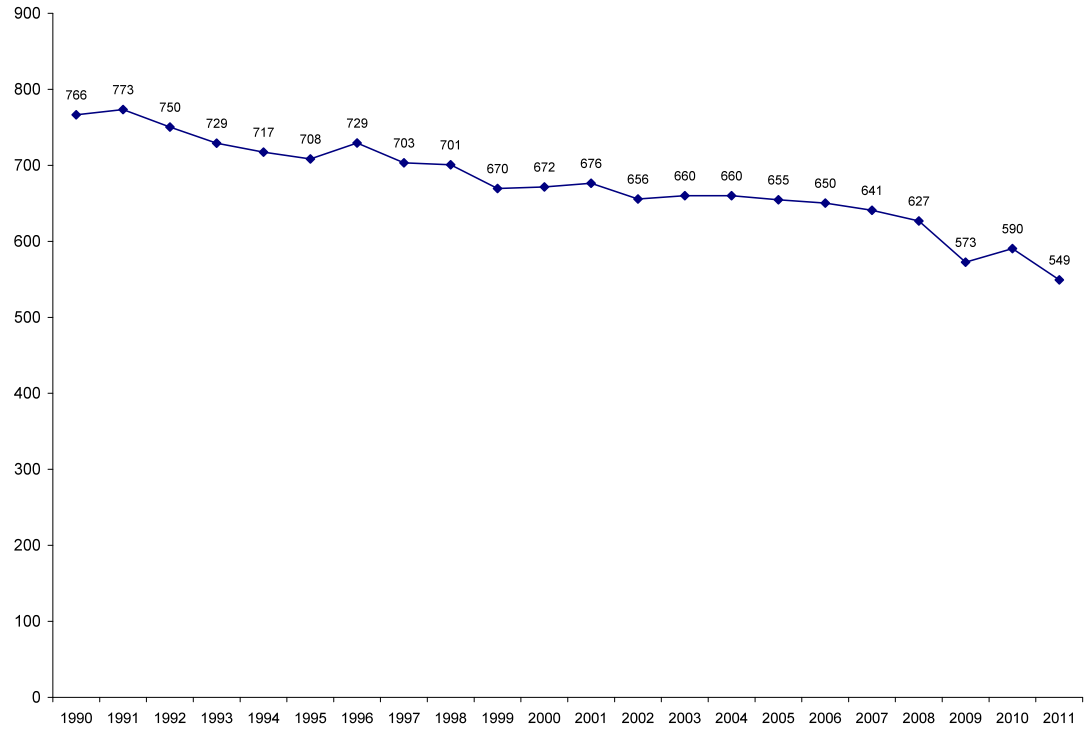
Resulting ratio describing the relationship of the median level of all those in employment to the median income of younger workers (Median income of all in employment divided by that of those aged under 30)

Year	Ratio		Year	Ratio		Year	Ratio
1999	1.15		2004	1.12		2009	1.12
2000	1.12		2005	1.13		2010	1.13
2001	1.10		2006	1.14		2011	1.17
2002	1.11		2007	1.14		2012	1.17
2003	1.13		2008	1.11			

8. Environmental Impact. Measure A – UK Greenhouse Gas Emissions

Purpose of Measure	To describe the environmental impact of UK energy consumption.
Measurement	UK emissions of Greenhouse Gases.
Data Sources	Data is currently being moved from its previous location in the DECC. Data for 2011 is taken from a press release https://www.gov.uk/government/news/statistical-release-2011-uk-greenhouse-gas-emissions
Length of data	1990 onwards

Chart 13. UK Greenhouse gas emissions, weighted by global warming potential (million tonnes carbon dioxide equivalent)



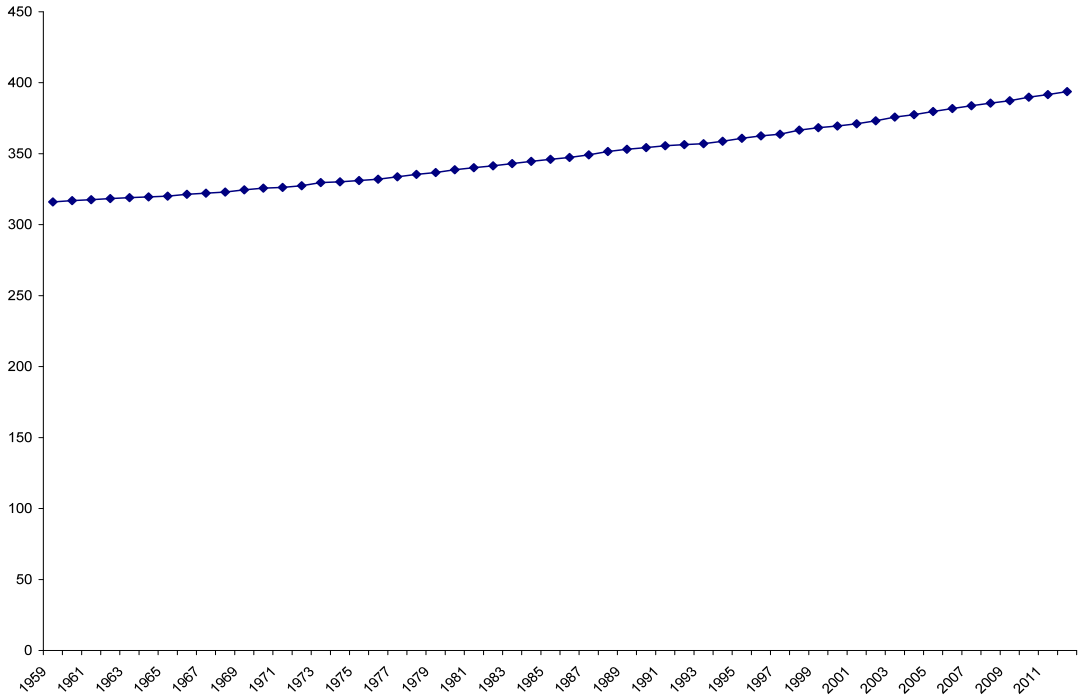
UK Greenhouse gas emissions, weighted by global warming potential (million tonnes carbon dioxide equivalent)

Year	MT CO2E		Year	MT CO2E		Year	MT CO2E
1990	766.4		1998	700.6		2006	650.3
1991	773.3		1999	669.6		2007	640.9
1992	750.3		2000	671.5		2008	626.7
1993	729.1		2001	676.4		2009	572.5
1994	717.4		2002	655.7		2010	590.4
1995	708.4		2003	660.1		2011	549.3
1996	729.3		2004	659.9			
1997	703.4		2005	654.7			

8. Environmental Impact. Measure B – CO_2 in the Atmosphere

Purpose of Measure	To describe the impact of climate change.
Measurement	CO_2 levels – parts per million
Data Sources	US Dept of Commerce – National Oceanic & Atmospheric Administration – Earth System Research Laboratory ftp://ftp.cmdl.noaa.gov/ccg/co2/trends/co2_annmean_mlo.txt
Length of data	From 1959

Chart 14. CO_2 expressed as a mole fraction (number of molecules) in dry air, micromol/mol, abbreviated as ppm



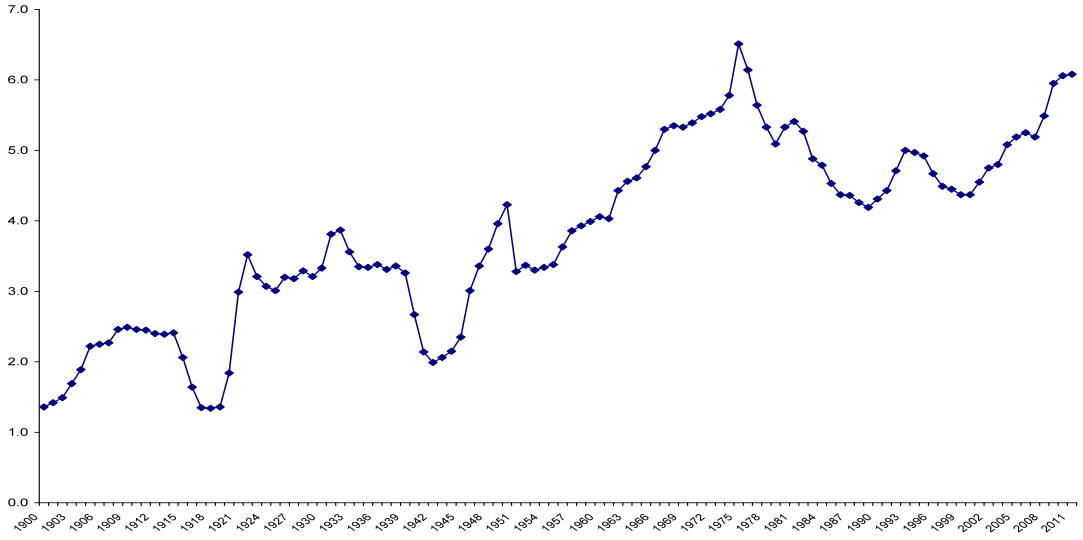
Base Data – CO_2 expressed as a mole fraction in dry air, micromol/mol, abbreviated as ppm

Year	ppm		Year	ppm		Year	ppm		Year	ppm		Year	ppm
1959	315.97		1971	326.32		1982	341.44		1993	357.07		2004	377.49
1960	316.91		1972	327.45		1983	343.03		1994	358.82		2005	379.80
1961	317.64		1973	329.68		1984	344.58		1995	360.80		2006	381.90
1962	318.45		1974	330.18		1985	346.04		1996	362.59		2007	383.76
1963	318.99		1975	331.08		1986	347.39		1997	363.71		2008	385.59
1964	319.62		1976	332.05		1987	349.16		1998	366.65		2009	387.37
1965	320.04		1977	333.78		1988	351.56		1999	368.33		2010	389.85
1966	321.38		1978	335.41		1989	353.07		2000	369.52		2011	391.62
1967	322.16		1979	336.78		1990	354.35		2001	371.13		2012	393.82
1968	323.04		1980	338.68		1991	355.57		2002	373.22			
1969	324.62		1981	340.10		1992	356.38		2003	375.77			
1970	325.68												

9. Education. Measure A – Level of Spend on Education

Purpose of Measure	To describe spend on education over time.
Measurement	Spend on education as a proportion of GDP. An increase indicates an improvement in intergenerational fairness. This has been taken into account when the data is introduced into the index itself.
Data Sources	UK Central Government and Local Authority Public Spending: http://www.ukpublicspending.co.uk/downchart_ukgs.php?chart=20-total&year=1900_2011&units=p&state=UK
Length of data	From 1900

Chart 15. Spend on Education as a % of GDP

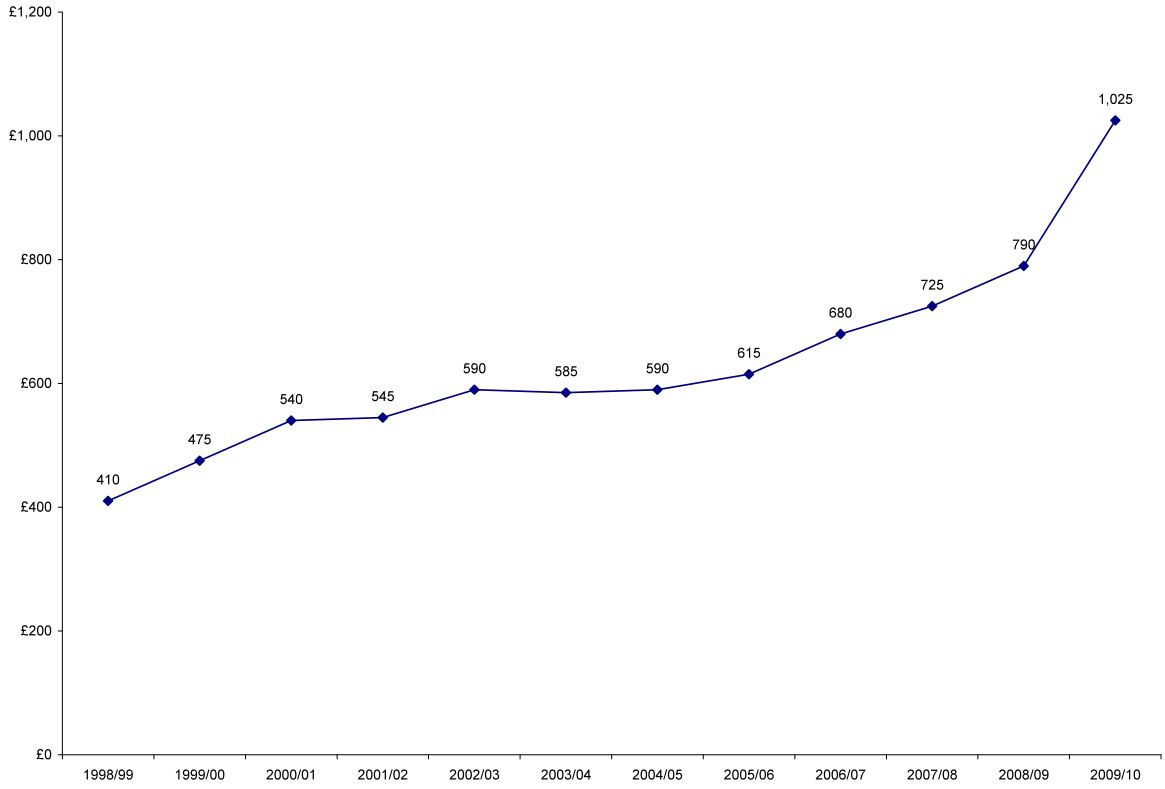


Year	% GDP		Year	% GDP		Year	% GDP		Year	% GDP		Year	% GDP
1900	1.36		1923	3.21		1947	3.36		1970	5.39		1993	5.00
1901	1.42		1924	3.07		1948	3.60		1971	5.48		1994	4.97
1902	1.49		1926	3.20		1949	3.96		1972	5.52		1995	4.92
1903	1.69		1927	3.18		1950	4.23		1973	5.58		1996	4.67
1904	1.89		1928	3.29		1951	3.28		1974	5.78		1997	4.49
1905	2.22		1929	3.21		1952	3.37		1975	6.51		1998	4.45
1906	2.25		1930	3.33		1953	3.30		1976	6.14		1999	4.37
1907	2.27		1931	3.81		1954	3.34		1977	5.64		2000	4.37
1908	2.46		1932	3.87		1955	3.38		1978	5.33		2001	4.55
1909	2.49		1933	3.56		1956	3.63		1979	5.09		2002	4.75
1910	2.46		1934	3.35		1957	3.86		1980	5.33		2003	4.80
1911	2.45		1935	3.34		1958	3.93		1981	5.41		2004	5.07
1912	2.40		1936	3.38		1959	3.99		1982	5.27		2005	5.19
1913	2.39		1937	3.31		1960	4.06		1983	4.88		2006	5.25
1914	2.41		1938	3.36		1961	4.03		1984	4.79		2007	5.19
1915	2.06		1939	3.26		1962	4.43		1985	4.53		2008	5.49
1916	1.64		1940	2.67		1963	4.56		1986	4.37		2009	5.95
1917	1.35		1941	2.14		1964	4.61		1987	4.36		2010	6.06
1918	1.34		1942	1.99		1965	4.77		1988	4.26		2011	6.08
1919	1.36		1943	2.06		1966	5.00		1989	4.19			
1920	1.84		1944	2.15		1967	5.30		1990	4.31			
1921	2.99		1945	2.35		1968	5.35		1991	4.43			
1922	3.52		1946	3.01		1969	5.33		1992	4.71			

9. Education. Measure B – Tuition Fees (Higher Education)

Purpose of Measure	To describe the costs of tuition fees for students in Higher Education (excluding Scotland).
Measurement	Average tuition fee liability of students in Higher Education (adjusted using GDP Deflator).
Data Sources	House of Commons Briefing Paper on Tuition Fees dated 29th November 2011: www.parliament.uk/briefing-papers/SN00917.pdf
Length of data	1998/99 onwards

Chart 16. Average tuition fee liability of students in Higher Education (£ per academic year)

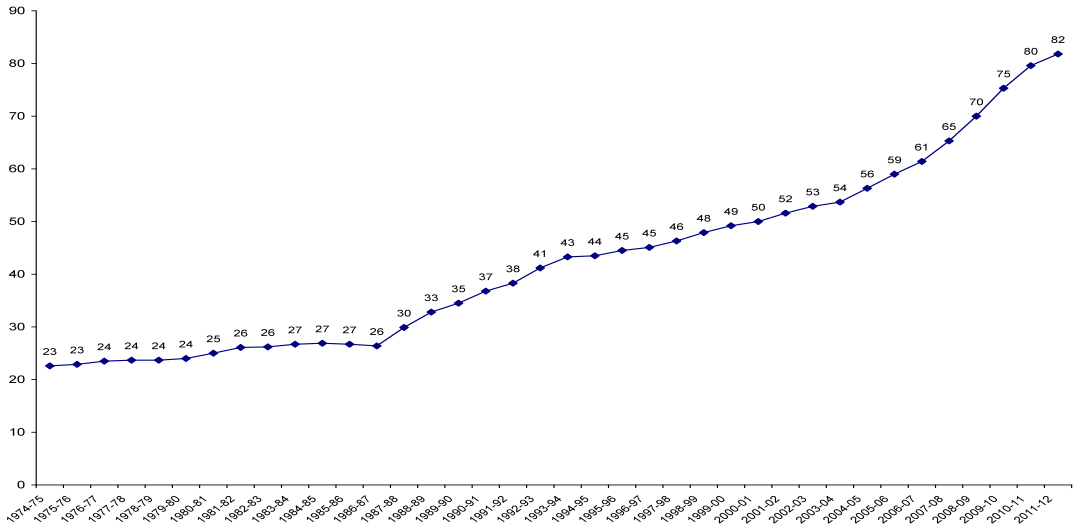


Academic Year	Average private contribution to fees (£)
1998/99	£ 410
1999/00	£ 475
2000/01	£ 540
2001/02	£ 545
2002/03	£ 590
2003/04	£ 585
2004/05	£ 590
2005/06	£ 615
2006/07	£ 680
2007/08	£ 725
2008/09	£ 790
2009/10	£ 1,025

9. Education. Measure C – GCSE Pass Rate

Purpose of Measure	To assess educational performance over time.
Measurement	Proportion of students achieving 5 or more A* to C equivalent pass grades at GCSE in England. An increase indicates an improvement in intergenerational fairness. That has been taken into account when the data are introduced into the index itself.
Data Sources	https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/167607/sfr02_202013nt.xls.xls
Length of data	From 1974

Chart 17. Proportion of Students Achieving 5 or more A* to C Pass Grades at GCSE/Equivalent in England



Base Data – Proportion of Students Achieving 5 or more A* to C Pass Grades at GCSE/Equivalent in England

Year	%		Year	%		Year	%
1974-75	22.6		1987-88	29.9		2000-01	50.0
1975-76	22.9		1988-89	32.8		2001-02	51.6
1976-77	23.5		1989-90	34.5		2002-03	52.9
1977-78	23.7		1990-91	36.8		2003-04	53.7
1978-79	23.7		1991-92	38.3		2004-05	56.3
1979-80	24.0		1992-93	41.2		2005-06	59.0
1980-81	25.0		1993-94	43.3		2006-07	61.4
1981-82	26.1		1994-95	43.5		2007-08	65.3
1982-83	26.2		1995-96	44.5		2008-09	70.0
1983-84	26.7		1996-97	45.1		2009-10	75.3
1984-85	26.9		1997-98	46.3		2010-11	79.6
1985-86	26.7		1998-99	47.9		2011-12	81.8
1986-87	26.4		1999-00	49.2			

Note: These figures arguably paint too optimistic a picture as grade inflation may mean that educational performance is overstated.

How the Index is Created using these Component Measures

The Index has been created by taking each of the nine core content areas, setting the values for them in the year 2000 at an index figure of 100, and expressing them in terms of the percentage variation from the level recorded in 2000. IF has gone back in time as far as 1990 and forward in time to 2013 for as many of the measures as possible.

Where a content area contains two or more component measures, the average of variation of these component measures has been used. This has been done in order not to give undue weight to any particular content area.

Once the level of variation of each of the content areas has been identified, the unweighted arithmetic average of the changes across the nine content areas has been worked out and the overall IF Index figure is an expression of that change forward in time and backward in time from the base figure of 100 in the year 2000.

An increase in the index represents an increase in intergenerational unfairness.

The table below shows the variation for each of the content areas from the level of 100 in the year 2000 and the resulting IF Index figure for each year.

	1. Unem-ploy-ment	2. Housing	3. Pensions	4. Govt Debt	5. Demo-cracy	6. Health	7. Income	8. Environ-mental Impact	9. Educ-ation	IF Index 2013
1990	67	65	75	64	83			96	125	**82**
1991	66	73	76	57	83			96	123	**82**
1992	70	79	82	53	83			103	117	**84**
1993	75	85	77	56	82			104	113	**85**
1994	77	92	85	68	85			102	105	**88**
1995	80	90	91	84	88			101	100	**90**
1996	82	87	92	95	90			100	100	**92**
1997	84	93	94	102	93			100	99	**95**
1998	88	94	95	106	96			101	101	**97**
1999	94	94	98	103	99			100	101	**98**
2000	100	100	100	100	100	100	100	100	100	**100**
2001	100	100	101	95	101	100	97	98	104	**100**
2002	105	106	106	85	103	104	96	98	109	**101**
2003	109	113	109	83	104	105	96	99	106	**103**
2004	110	118	113	89	105	106	98	98	106	**105**
2005	114	124	118	95	106	108	97	98	104	**107**
2006	120	125	121	100	107	108	98	99	100	**109**
2007	124	127	129	106	106	109	99	99	99	**111**
2008	121	128	144	110	105	111	100	99	101	**113**
2009	126	117	164	113	104	114	97	98	102	**115**
2010	125	118	161	129	103	118	98	97	101	**117**
2011	117	129	158	160	102	120	99	94	112	**121**
2012	117	134	191	183	107	121	102	95	110	**129**
2013	123	134	175	201	107	123	102	93	111	**130**

Chart 18. IF Index and the Nine Content Areas – 2000 to 2013 (from the Index base of 100 in the year 2000)