AN ANALYSIS OF GENERATIONAL EQUITY OVER RECENT DECADES IN THE OECD AND UK

Jonathan Bradshaw and John Holmes

GINI DISCUSSION PAPER 11
JULY 2011

GROWING INEQUALITIES’ IMPACTS
An Analysis of Generational Equity over Recent Decades in the OECD and UK

Jonathan Bradshaw
John Holmes

University of York
Department of Social Policy and Social Work

21 July 2011
DP 11
# Table of contents

**Abstract** ...................................................................................................................................................................... 7

1. **Background** ........................................................................................................................................................... 9

2. **Analysis of OECD expenditure data** ......................................................................................................................... 11

3. **The UK** ............................................................................................................................................................... 15

   3.1. Methods .................................................................................................................................................................... 15

   3.2. Results .................................................................................................................................................................... 16

   3.3. Original income ........................................................................................................................................................ 17

   3.4. Cash benefits ........................................................................................................................................................... 19

   3.5. Direct and indirect taxes ......................................................................................................................................... 19

   3.6. In kind services ........................................................................................................................................................20

   3.7. Overall redistribution ..............................................................................................................................................21

   3.8. Distribution ..............................................................................................................................................................22

   3.9. Conclusion ................................................................................................................................................................25

**References** .................................................................................................................................................................. 27

**GINI Discussion Papers** ................................................................................................................................................ 29

**Information on the GINI project** ..................................................................................................................................... 31
Abstract

In *The Pinch* David Willetts (2010) attracted attention by asking whether “the boomers have been guilty of a monumental failure to protect the interest of future generation” p xv. This was just the latest contribution to a long running concern of social policy analysts about horizontal equity or generational fairness.

Using OECD data 1980-2007 in the first part of this paper we show that there is no evidence that social expenditure has been shifting in favour of the elderly at the expense of children except perhaps recently in Nordic countries.

For the UK we have created a time-series using the published articles since 1988 and the raw data sets since 1996 for the annual Office for National Statistics analyses of the *Effect of Taxes and Benefits on Household Incomes* and used it to analyse trends in the redistributive impact of cash benefits, direct and indirect taxes and services on the retired and households with children and across the income distribution. The analysis shows how the relative support for the retired versus children has changed over time, which elements have contributed to the changes and for which part of the income distribution.

There has been a small shift in final income in favour of the elderly but it was not the result of changes in taxes, benefits or services in kind but rather a change in the original income distribution in favour of the elderly.
1. **Background**

All industrialised countries have been ageing. Fertility has been at sub replacement level in almost all countries since the 1980s and life expectancy has been increasing. Childhood and retirement are the two life stages when individuals receive most help from the state in cash benefits and in-kind services. In 2007 OECD countries spent an average of 6.4 per cent of GDP on benefits and services for the elderly compared to an average of 2.0 per cent on benefits and services for families with children. Some of the public expenditure on a declining population of children can be employed in supporting an increasing retired population but each retired person costs a great deal more than each child. Given this, it might be expected that as well as a shift in total expenditure from children to the elderly due to demography, there would also be a shift in per capita expenditure from children to the elderly in order maintain their living standards in retirement.

Indeed there may be political reasons for this to have happened (Hinrichs 2002). The retired are voters and children are not. Increasing grey power may have led governments to favour policies that benefit the retired over policies that favour children. Esping Anderson and Sarasa (2002) have expressed anxiety that ageing might impose pressures on government to maintain high spending on the elderly at the expense of children and have argued on the basis of welfare regime types that the bias in favour of the aged is especially pronounced in Southern European welfare states while Scandinavian welfare states are more youth biased.

This is part of a longstanding, if episodic, interest in life cycle distributional justice by social policy analysts. Rowntree’s (1901) insights into the cycles of want and plenty first raised the issue. But there has not been much attention to it since analysis of it reached a new apotheosis with the Falkingham and Hills book (1995). But there has been nothing in the UK covering the period since the Labour Government 1997-2010.

A recent contribution however has come from the British conservative politician David Willetts (2010) who argues that in the UK the post-war baby boomers born between 1945 and 1965 have taken a greater share of national resources than the generation that came before and after them. The arguments are quite complex but he argues that they had higher real incomes, partly due to the increase in two earner households That generation avoided the impact of globalization which impacted on the earnings of subsequent generations. They have benefited from low inflation and have been the main beneficiaries of the house price boom. The welfare state is not an important player
in the Willetts’s thesis but if as he concludes we are going to be able to ‘protect the interest of the future generation’ then it is likely to have to play a part.

So this paper exploits two sources of data on the UK welfare state in the last 20 years to analyse whether there has been a shift in redistributive effort from families with children to the retired and if so why?
2. Analysis of OECD expenditure data

The first analysis is based on the OECD social expenditure data base\(^1\). There the OECD publishes data on cash benefits and services for the retired and cash benefits and services for children.

There was an unfortunate break in the elderly series between 1989 and 1990 (see footnote 2). Nevertheless in Figure 1 we see that social expenditure on the elderly\(^2\) and families\(^3\) fell during the 1980s but then increased between 1990 and 2005. However we cannot tell whether this was due to demographic change – expenditure on children may be going down because there are fewer children needing to receive benefits and services and expenditure on the retired may be going up because there are more retired but this does not imply a deliberate shift of resources in favour of the retired. So we control for demographic by estimating expenditure per capita older person and per capita child.

Figure 1: Spending on the elderly and families with children as % of GDP

![Figure 1: Spending on the elderly and families with children as % of GDP](image)

Figure 2 shows trends in spending in purchasing power parities per capita older person as a percentage of GDP per capita. There are big variations in spending on the retired between countries as well as variations over time.

---

2. Pensions, early retirement pensions, ‘other’ cash benefits, residential care or home help services and ‘other’ benefits in kind. Data for 1990 onwards are based on the new ESSPROS methodology format. Coherent spending series for 1980 onwards at the individual programme level were obtained on basis of information for a few years in the early 1990s for which both historical spending series and information based on the new ESSPROS format were available. For certain programmes and aggregate categories, breaks in series (between 1989 and 1990) were inevitable. In general, programmes from the old ESSPROS format which could not be matched with a figure from the new ESSPROS format were set to “missing” from 1990 onwards; similarly, figures from the new ESSPROS format which could not be matched to a programme from the old methodology were set to “missing” for the period 1980-89.
3. Family allowances, maternity and parental leave, ‘other’ cash benefits, day care or home help services and ‘other’ benefits in kind.
The UK is a comparatively low spender and spending in the UK on retired people has increased steadily over the period.

**Figure 2:** Total expenditure on the retired per capita % GDP per capita: 1980–2007 $ppp

Figure 3 shows that spending per capita child as a proportion of GDP per capita is much lower than spending on the retired in all countries. There are big variations between countries in their level of spending and there have been variations over time. In the UK expenditure was fairly stable between 1980 and 1995 but increased sharply after that.

**Figure 3:** Expenditure on family cash benefits and services per capita child as percentage of GDP per capita: 1980–2007 $ppp
The question we are interested in is: has expenditure on children suffered at the expense of spending on the retired? The best way to explore this is to look at ratios, to estimate social expenditure per capita child as a % of social expenditure per capita old person. Figure 4 presents these results. It varies a lot between countries. In 2007 Iceland was the most generous to its children compared to its retired and has become much more generous since 1980. Japan and Korea are much less generous to children relative to the retired but they have both also become more generous to children since 1990. The UK recovered its relative generosity to children after 1995 under the Labour Government. Generally there is no evidence that social expenditure on the retired has increased at the expense of social expenditure on children in the OECD. However there some countries which have become relatively less generous to children – Denmark, Finland and Norway since 1995 and Sweden since 1990.

Figure 4: Expenditure per child as a percentage of expenditure per older person 1980–2007

There are some serious limitations to this analysis.

- There are reasons to be anxious about the consistency of the classification of expenditure between countries. Countries use different policies to deliver the same outcomes.
- So for example the OECD classification of public social expenditure does not include tax expenditures, mandatory occupational provision, occupational benefits, housing benefits, health and education expenditure or child support (alimony). Nor does it take account of the fact that benefits are taxed back in some countries and not others. In its work on net social expenditure, the OECD has been working to take account of some of these problems (Adema 2001) and although there is net social expenditure data available from 2001 onwards it is not disaggregated by age group.
For the same reasons there may be reasons to be anxious about the consistency of the classification in any one
country over time. For example some countries have turned elements of their cash benefits for children into
tax benefits in recent years which may not be classified as social expenditure.

- The latest data we have is up to 2007—well before the current recession began.
- Finally this data does not allow us to observe distributional changes or which elements of the tax and benefit
  system have contributed to the changes.

So this led us to analyse UK micro data.
3. The UK

The analysis of OECD expenditure is interesting but OECD social expenditure excludes tax expenditures and taxation, does not take into account health and education expenditure and

3.1. Methods

The Office for National Statistics (ONS) publishes an annual analysis of the effects of taxes and benefits on the income of UK households (ONS various years) and, from 1995-6 onwards, has also made the dataset on which the analysis is based available on the UK Data Archive. Our analyses uses the reports from 1988-9 to 2008-9 to examine how five different stages of the distributional process have become more or less favourable to retired households and households with children over this time period. We also use the datasets from 1995-6 to 2008-9 to assess how income inequality after all distributional stages has changed over this shorter time period within these two family types.

The five stages of the distributional process examined are as follows:

- Original income: Cash income before any form of taxation or receipt of any benefits or services in kind.
- Gross income: Original income plus cash benefits.
- Disposable income: Gross income minus direct taxation and National Insurance contributions.
- Post-tax income: Disposable income minus indirect taxation.
- Final income: Post-tax income plus benefits received in kind.

"The effects of taxes and benefits" reports provide a detailed breakdown of the mean household income at each of these distributional stages and the mean values of the government transfers which comprise the distributional process for a range of household types. Retired households are defined as households ‘where the combined income of retired members amounts to at least half the total gross income of the household, where a retired person is defined as anyone who describes themselves as ‘retired’ or anyone over minimum NI pension age describing themselves as ‘unoccupied’ or ‘sick or injured but not intending to seek work’” (ONS 2010, p.44). Households with children are non-retired households containing a child ‘aged under 16 or aged 16, 17 or 18 but unmarried and receiving full-time, non-advanced further education’ (ONS 2010, p.43).
As datasets were only available from 1995-6, we relied on the data in the published reports for the first stage of our analyses to provide a longer time series. However, this limited our analyses in three main ways. Firstly, the reports do not provide equivalised income by household type for all distributional stages; therefore, we are reporting unequivalised mean incomes. Secondly, we are subject to a range of assumptions made by the report authors (e.g. definitions, treatment of negative incomes and values of in-kind benefits). Full details of these assumptions can be found in the report appendices for individual years. Thirdly, prior to 1991-2 for households with children and 1990-1 for retired households, aggregated means were not reported for households of different composition within each household type. For these years we estimated weighted means for each household type from the reported values for the disaggregated household types (e.g. single person retired households, two person retired households). The reliability of this approach was confirmed by calculating weighted means from disaggregated information in the datasets for later years and comparing these to the reported aggregated means.

An additional limitation arose due to the survey data from which the reports and datasets are compiled not containing sample weights until 1996-7. Given datasets were only available from 1995-6 onwards, adjusting most of the unweighted years’ means was impracticable. Therefore, we report unweighted data from 1988-9 to 1995-6 and weighted data from 1997-8 onwards. Sensitivity analyses using the micro-level datasets suggest using unweighted data in the later years would not substantively alter our findings.

For the second stage of our analysis, we constructed three measures of inequality within our two household types at each distributional stage from the datasets for 1995-6 through to 2008-9. The inequality measures constructed were the gini coefficient, the 80/20 ratio and the 90/10 ratio. Gini coefficients were constructed using adapted syntax code obtained from the online SPSS support forum (SPSS 2010). The same definitions are used as in the first stage of the analysis and data were weighted from 1997-8 onwards (data were not weighted for 1996-7 as the downloaded weighting variable contained an error).

3.2. Results

First we analyse each stage of the distributional process.
3.3. Original income

Figure 5 shows the ratio between the average retired original income as a proportion of the average original income of households with children. This is what the market produced before any taxes and benefits. It can be seen that the retired improved their relative position until 1997 (when new Labour took power). After that the income of households with children improved relative to older people but the improvement dissipated after 2004/5. As a result in terms of original income the retired were better off in comparison with households with children at the end of the period than they had been at the start. This appears to be almost entirely due to the growth of occupational pension income.

Figure 5: Ratio of original income of retired households to the original income of households with children

Figures 6 and 7 present an overall summary of trends in the average amount of cash benefits and in kind benefits received and direct and indirect taxes paid in cash terms. The dark lines are the net average social expenditure. It can be seen that for households with children cash and in-kind benefits have increased but so have direct and indirect taxes and average net social expenditure on households with children has increase over the whole period by about £3500.
For retired households Figure 6 cash benefits and in-kind benefits have increased and direct and indirect taxes have increased but at a lower rate than for households with children and net social expenditure has risen by nearly £6000 over the period.

We now explore each of those elements in more detail.
3.4. Cash benefits

Original income is supplemented through the provision of cash benefits. Figure 8 shows trends in the ratio of average cash benefits paid to retired households over cash benefits paid to households with children. In 1990 the average retired household received roughly double the cash benefits paid to households with children. The ratio fell after then and has fluctuated up and down and in 2008/9 was 1.8 times. So there is no evidence that cash benefits have moved in favour of the retired at the expense of children.

Figure 8: Ratio of cash benefits for the retired over average cash benefits for children

3.5. Direct and indirect taxes

Then the distribution is influenced by direct and indirect taxation. In Figure 9 it can be seen that the retired pay less direct taxes on average than households with children and there is evidence that they have paid proportionately less over the period – the ratio has fallen from 34% of what households with children pay in 1989/90 to 25% in 2008/9. But this reduction in direct taxes has been offset by an increase in indirect taxes. In 1989/90 the retired paid 30% of what households with children paid in indirect taxes and by 2008/9 that had increased to 48%.
3.6. In kind services

Finally in kind services have an impact. Retired households receive less value from services than households with children mainly because the value of education is taken into account. Figure 10 shows that the retired had been receiving increased value from services relative to households with children until 2006.

---

4 There was a big reduction in the value of the National Health Service in 2008/9. This was due to a change in methodology. “The methodology used for the calculation of the in kind benefit from education and the National Health Service (NHS) have been updated. These estimates are now based on more up-to-date data on the per-unit cost of these services to the Government. In particular, the NHS method is now more closely based on that presented in Cardarelli et al (1999).” Barnard, A. (2010) The effects of taxes and benefits on household income 2008/09, Office for National Statistics, page 2. He have learned from a communication with Andrew Barnard that ONS will be publishing a consistent back series later in 2011. Meanwhile he has advised that under the original method in kind services increased by 3% 2007/8 to 2008/9 for retired and non retired households. We have therefore adjusted the 2008/9 raw data so that it is consistent.
3.7. Overall redistribution

Figure 10 brings the analysis together by combining receipts (cash benefits and in kind benefits) and combining the tax take (direct and indirect). The ratio of average benefit receipt fluctuated over the period but was slightly lower in 2008/09 than it had been in 1988/9. The ratio of the tax take hardly moved at all.

*Figure 10: Ratio of benefits (cash and kind) to ratio of taxes (cash and kind)*

Figure 11 summarises what has gone before by comparing the ratios of original and final income. In both cases the ratio has changed slightly in favour of the retired over time and all of that change can be ascribed to an improvement in the original income and almost all of the increase in original income has been due to an increase in occupational pensions. The UK welfare state has remained neutral between the retired and child households over this 20 year period.
3.8. Distribution

So far this has been a picture of the average. What about the distribution? For the reasons discussed in the methods section this analysis has to be based on the raw data only available since 1995/96 and because of the change in method for calculating in-king benefits in 2008/09 we only take the analysis to 2007/08. In Figure 12 we compare the gini coefficients and the 80/20 ratios for households with children and the retired. The results are complicated. For the retired there has been a reduction in overall inequality as measured by the gini but little evidence of a change in the 80/20 ratio. For households with children there was a reduction in inequality as measured by the gini until 2004/5 and some evidence of a fall over the whole period in the 80/20 ratio.

Figure 12: Final Income gini coefficient and 80/20 ratios
Figure 13 shows the ratios of the gini and 80/20 ratios for the retired as a percentage of those for households with children. The gini fell more for the retired than households with children and the 80/20 ratios increased more for the retired than households with children. Thus inequality increased more for families with children than for the elderly.

**Figure 13: Ratios of ginis, 90/10 and 80/20 ratios retired as a proportion of households with children**

It can be seen that in Figure 14 that the ratio of the retired gini to the family with children gini has fallen slightly over the period for all stages of the distribution process but the biggest fall was in final income indicating that it was services in kind that contributed most.

**Figure 14: Components of the change in the ratios of the retired gini coefficients as a proportion of households with children**
Figure 15 shows the percentage increase between 1997/98 and 2007/08\(^5\) in the incomes of families with children and the retired at four points of the income distribution. At the 80\(^{th}\) percentile families have had a slightly larger increase in the original and final income than the retired over this period. At the 90\(^{th}\) percentile families with children have had a much larger increase in income than pensioners. At the 20\(^{th}\) percentile and 10\(^{th}\) percentile original income is very small but in both cases these low income households have had a higher percentage increase in their incomes and families with children have done slightly better than the retired.

Figure 15: % increase in cash incomes 1997/98-2007/08

However we know from trends in poverty rates (based on a different source the Family Resources Survey and using individuals rather than households) that pensioner poverty rates have fallen faster than child poverty rates since 1997 see Figure 16. This suggest a fairly complicated distributional picture with results probably highly sensitive to where poverty thresholds and percentile points fall in the distribution.

\(^5\) Rather than 2008/09 because of the change in method on in kind benefits
3.9. Conclusion

The analysis of OECD public expenditure data based on national accounts over the period 1980 to 2005 gives no support to the hypothesis that in the face of an ageing population the welfare state in the UK has become less generous to children. Indeed the data suggested that after 1995 there was an increase in expenditure per child relative to expenditure per retired person. The analysis of UK data at a micro level takes into account the impact of direct and indirect taxes and health and education spending not included in the OECD analysis. The conclusion is that the impact of taxes and benefits on the elderly vis a vis households with children has been extraordinarily stable over the last 20 years. A small improvement in the relative value of cash benefits for families with children has been offset by a small deterioration in their tax take thanks mainly to indirect taxes. The relative value of services in kind for the retired increased until 2006/7. This picture of the average does not change if we focus on the distribution. Ratios of inequality between retired and families with children have changed very little. The final incomes
of retired households have improved relative to families with children but this was achieved entirely as a result of the relative improvement in retired household original income, almost entirely due to occupational pensions.

What does this tell us about generational equity. There is little evidence that public policy is contributing to generational inequity or at least not the benefits, taxes and services aspects of public policy. Of course public policy is only part of the story. Most of the discussion of generational equity focuses on earned income and especially wealth.

Of course we should be wary of predicting the future from the past. The retired population rose by 0.9 million between 1985 and 2005. It will rise by 1.6 million between 2005 and 2015. The impact of the baby boomers is only just beginning. Then there is the coalition government’s response to the recession and the deficit which has included an extraordinary list of cuts imposed on benefits and services for families with children and no cuts to cash benefits for the retired (or their winter fuel allowance or free bus passes) – indeed it is intended to reintroduce the link between the basic retirement pension and movements in earnings (for details of these see Yeates et al 2011). There are also aspirations to replace contributory retirement pension with a citizenship pension at a high enough level to remove the need for Pension Credit which will involve a huge increase in spending on better off pensioners. It would be as well to maintain vigilance.
References


GINI Discussion Papers

Recent publications of GINI. They can be downloaded from the website www.gini-research.org under the subject Papers.

DP 10  Whe Reaps the Benefits? The Social Distribution of Public Childcare in Sweden and Flanders
Wim van Lancker and Joris Ghysels
June 2011

DP 9   Comparable Indicators of Inequality Across Countries (Position Paper)
Brian Nolan, Ivo Marx and Wiemer Salverda
March 2011

DP 8   The Ideological and Political Roots of American Inequality
John E. Roemer
March 2011

DP 7   Income distributions, inequality perceptions and redistributive claims in European societies
István György Tóth and Tamás Keller
February 2011

DP 6   Income Inequality and Participation: A Comparison of 24 European Countries + Appendix
Bram Lancee and Herman van de Werfhorst
January 2011

DP 5   Household Joblessness and Its Impact on Poverty and Deprivation in Europe
Marloes de Graaf-Zijl
January 2011

DP 4   Inequality Decompositions – A Reconciliation
Frank A. Cowell and Carlo V. Fiorio
December 2010

DP 3   A New Dataset of Educational Inequality
Elena Meschi and Francesco Scervini
December 2010

DP 2   Are European Social Safety Nets Tight Enough? Coverage and Adequacy of Minimum Income Schemes in 14 EU Countries
Francesco Figari, Manos Matsaganis and Holly Sutherland
June 2011

DP 1   Distributional Consequences of Labor Demand Adjustments to a Downturn. A Model-based Approach with Application to Germany 2008-09
Olivier Bargain, Herwig Immervoll, Andreas Peichl and Sebastian Siegloch
September 2010
Information on the GINI project

Aims

The core objective of GINI is to deliver important new answers to questions of great interest to European societies: What are the social, cultural and political impacts that increasing inequalities in income, wealth and education may have? For the answers, GINI combines an interdisciplinary analysis that draws on economics, sociology, political science and health studies, with improved methodologies, uniform measurement, wide country coverage, a clear policy dimension and broad dissemination.

Methodologically, GINI aims to:

- exploit differences between and within 29 countries in inequality levels and trends for understanding the impacts and teasing out implications for policy and institutions,
- elaborate on the effects of both individual distributional positions and aggregate inequalities, and
- allow for feedback from impacts to inequality in a two-way causality approach.
- The project operates in a framework of policy-oriented debate and international comparisons across all EU countries (except Cyprus and Malta), the USA, Japan, Canada and Australia.

Inequality Impacts and Analysis

Social impacts of inequality include educational access and achievement, individual employment opportunities and labour market behaviour, household joblessness, living standards and deprivation, family and household formation/breakdown, housing and intergenerational social mobility, individual health and life expectancy, and social cohesion versus polarisation. Underlying long-term trends, the economic cycle and the current financial and economic crisis will be incorporated. Politico-cultural impacts investigated are: Do increasing income/educational inequalities widen cultural and political ‘distances’, alienating people from politics, globalisation and European integration? Do they affect individuals’ participation and general social trust? Is acceptance of inequality and policies of redistribution affected by inequality itself? What effects do political systems (coalitions/winner-takes-all) have? Finally, it focuses on costs and benefits of policies limiting income inequality and its efficiency for mitigating other inequalities (health, housing, education and opportunity), and addresses the question what contributions policy making itself may have made to the growth of inequalities.

Support and Activities

The project receives EU research support to the amount of Euro 2.7 million. The work will result in four main reports and a final report, some 70 discussion papers and 29 country reports. The start of the project is 1 February 2010 for a three-year period. Detailed information can be found on the website.

www.gini-research.org