Inequality in Scotland: New Perspectives

A Paper for the David Hume Institute

October 2014

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This work was funded by Alan McFarlane in memory of Ken Lyall,

a strong supporter of the David Hume Institute

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Executive Summary

This paper presents new evidence on inequality in Scotland.

It begins by explaining why inequality is taking centre stage in both national and international debates at this time.

It then presents a variety of evidence about inequality in Scotland. It uses data from large-scale surveys over the last three decades to identify key economic and social trends that have influenced inequality.

It goes on to analyse the effectiveness of policies in Scotland that are intended to redistribute between rich and poor. These are largely concerned with taxes and welfare benefits, some of which will fall under the control of the Scottish Parliament in the near future.

It goes on to discuss the redistributive effects of policies that have other objectives - such as mitigating the effect of climate change, managing the housing market etc. This analysis is particularly novel in a Scottish context.

Inequality can be measured in many different ways over a variety of units of measurement. The most important distinction is that between the inequality of market wages, which is affected by a variety of economic and social forces, and the inequality of household income, which is affected by taxation, benefits, household structure and differences in the prices faced by the rich and poor.

Some of the important changes in the Scottish economy that have influenced inequality include:

- the ageing of the workforce
- much greater increases in the number of part-time than full-time workers over the last 30 years
- a much higher level of participation in the labour market among women; compared with 1980s, the share of women “looking after the family home” has declined sharply
- a large increase in the number of graduates in the Scottish workforce
- a large reduction in the number of unqualified workers in Scotland
- substantial increases in the number of self-employed workers in Scotland over the last three decades
- a decline in the membership of trade unions in Scotland, and their increasing concentration in the public sector
- a continuing decline in the earnings of the young compared to other age groups
- substantial change in Scotland’s occupational and industrial structure. Some of this arises from new product demands but also from technical change and globalisation. There is evidence that some jobs capable of being “routinized” are disappearing.

Policies whose intended consequence is to redistribute from rich to poor in Scotland - taxes and welfare benefits - are largely the preserve of the UK Government. This may change when further devolved powers are granted to the Scottish Parliament.

Under the current structure, benefits have a much stronger redistributive role than do taxes.

The extent of redistribution has changed little since the 1980s.

The U.K. taxes and benefits system redistributes income at about the same rate as the OECD as a whole. However, because it starts with a high level of inequality, progressive taxation is bound to have a more equalising effect than would be the case in a less unequal society.

Separate from taxes and benefits, the minimum wage has also played a role in reducing inequality of individual earnings at the bottom end of the wage spectrum.

In contrast, it is not certain that adoption of the "living wage" would necessarily lead to a large reduction in inequality or in relative poverty at household level. This is due to the way that low paid work is distributed across households at different parts of the income distribution. Addressing low-wages of individuals is not necessarily the same as addressing inequality of individual wages.

Some policies are forced on governments by taxpayer responses to the incentives they face. One very important response has been the switch from direct to indirect taxes. This is a policy common to many governments which reflects the difficulty of collecting direct taxes in a world where labour and capital are mobile. However, the switch to indirect taxes is more likely to increase rather than reduce inequality. Poorer households contribute a much larger share of their income in VAT, for example, than do the rich. This will be true in Scotland just as it is in the UK as a whole.

Energy policy also disadvantages the poor. Energy costs comprise a much larger proportion of their net income than is the case with the rich. Recent increases in energy costs have largely been driven by increases in wholesale prices. The effects of the EU emissions trading scheme and the increasing cost of network services have also added to the upward pressure on prices. Germany has gone much further than the UK in allowing individuals to attach electricity generating devices to the grid and then paying them handsomely for the electricity produced. This has increased inequality by small but significant amounts.

Planning law is also a potential contributor to increasing inequality. By restricting the responsiveness of new house-building to increasing demand, planning policy contributed to the house price boom of the 2000s. The substantial rise in real house prices has driven a wedge between the fortunes of older and younger generations – younger generations are increasingly less likely to be homeowners and less likely to be in social rented housing compared to the older generation. The younger generation is likely to be increasingly reliant on inheritances to purchase a property. Those who cannot purchase a property face a choice between living in increasingly expensive private rented accommodation which limits ability to save, or to remain living with parents. The house price bubble therefore seems to be increasing inter-generational inequality (between generations) and may already be leading to increases in intra-generational (within generation) inequality among subsequent generations given the very unequal distribution of inheritances.

The themes of inter-generational inequality and earnings mobility (the extent to which children born into poor families grow up to become poor adults) are explored in further detail in Section 6. Young people have fared particularly badly in the labour market in recent years, experiencing higher rates of unemployment and lower wage growth. Inter-generational inequality is important because it accentuates intra-generational inequality through inheritances of income and opportunity. With the

returns to education continuing to increase, the way in which education policy is structured and funded will have huge implications for inequality.

The UK has a relatively low level of earnings mobility, meaning that there is a strong relationship between the economic position of the parents in the earnings distribution and that of their children. Inequality lowers mobility because it shapes opportunity. Higher income inequality in the present makes family background play a stronger role in determining the adult outcomes of young people, with their own hard work playing a commensurately weaker role. This offends many people purely on the basis of what is perceived as 'fair', and risks creating a society that is 'dynastic', rather than dynamic.

1. Introduction

Inequality is rapidly moving up the world policy agenda. The belief that extreme inequality is not only difficult to justify morally, but is also a root cause of a variety of social and economic problems has become widespread. This belief was strengthened by the financial crisis. To many it seems that those on low incomes are bearing much of the cost of the crisis, but were in no way culpable for it happening. At the same time, those at the top of the income distribution have emerged relatively unscathed from the recession. In 2013, the top 3 per cent in the US income distribution received 30.5 per cent of total income. In Scotland, the top 1 per cent of income earners receive around 9 per cent of total income. Scotland, like the US, is a deeply unequal society. Similar concerns that generally relate to inequality include:

1. Stagnant or declining real wages in some countries give lie to the "trickle down" effect - the notion that the poor would share in the benefits of economic growth .
2. The recession has exacerbated absolute poverty, as evidenced in the UK by increased use of food banks.
3. Growth in the incomes of the super-rich – the footballers, movie-stars, captains of industry whose earnings multiple over the median earner seem to continually increase. Director's pay and rewards in the UK increased by 21 per cent in 2013 taking their overall pay growth between 2000 and 2014 to 278%. This compares with a 48% growth over the same period for full-time employees.
4. Piketty's (2014) argument that if the return on capital exceeds the growth rate of the economy, wealth (and power) will be increasingly concentrated among the relatively few, which could cause a threat to democracy.
5. The worldwide reduction in the share of labour relative to capital in total income, a significant proportion of which is due to the availability of relatively cheap information technology (Karabarbounis and Neiman 2013).
6. Concern over intergenerational inequality, partly precipitated by the continuing importance of inherited wealth and partly by the concern that the poor lack the opportunities for advancement available to the more affluent.

A growing acceptance of the negative effect of inequality has led to increased pressure for government intervention. International bodies, such as the IMF and World Bank which have previously stressed freeing international trade and containing government spending, are increasingly regarding inequality as a key policy priority[1].

National governments already intervene in a variety of ways to reduce the gap between rich and poor. They do so with varying degrees of commitment and success. The main instruments of redistributive policies are progressive direct taxes, which proportionately reduce the incomes of the rich more than those of the poor, and welfare benefits and means-tested transfers which increase the disposable incomes of the poor.

As well as redistribution, governments have a variety of other policy objectives. Policies promoting these objectives are likely to have a variety of unintended consequences. And these unintended effects may undermine their efforts to address inequality.

[1] The New Washington Consensus - Time to Fight Rising Inequality, the Guardian (5th October 2014)

For example, an energy policy which seeks to decarbonise the economy may push up the price of energy within the average shopping basket. This may reduce disproportionately affect the ability of the poor to buy other goods because energy is an essential good and accounts for a larger share of the spending of those on low incomes.

Factors other than government policy affect the gap between rich and poor. These are primarily, but not exclusively, economic. They reflect changes in where goods are produced and how they are made. And to some extent they are influenced by changes in the needs of the population and in the new goods and services that are produced to meet those needs.

The Scottish economy is not immune from these changes. It has been transformed in the last few decades by the economic forces of globalisation and technical change. For example, the shipbuilding industry, which played a key role in Scotland's industrial past, has almost disappeared. Competition from parts of the world which had no significant shipbuilding industry 50 years ago has played a significant role in its demise. Technical change, particularly in the form of computerisation, has resulted in the disappearance of many jobs, as machines have replaced individuals. Machines typically cost less and can perform tasks more quickly and more accurately than even skilled labour. Demographic change has resulted in a huge increase in demand for long-term care: the distribution of income is affected by the way that workers in this industry are paid.

Social change has also played a role. There has been a substantial increase in the number of women employed in the Scottish economy since the 1970s. This has been facilitated by the transformation of the Scottish economy, towards services and away from heavy industry. The increase in employment has been strongest among married women: more flexible working time and greater availability of child-care are a response to the increased willingness of married women to play a part in the labour market.

Has increased female participation increased or reduced inequality? And what effect has the change in the structure of employment in the Scottish economy had on the gap between rich and poor? The answers to such questions should clearly be of interest to those seeking a reduction in inequality. If it is true that these longer run influences have driven changes in inequality, then the ability of government to effect short-run change is diminished. Hence there is a clear need to have a broad perspective of the causes as well as the consequences of inequality in the Scottish economy. We attempt to do this in the following section by bringing together detailed individual data on the Scottish economy over the period 1984 to 2013.

The key issue that our investigation seeks to answer is the extent to which changes in inequality are part of the price of participating in a global trading system and being willing to accept the implications of investment in new technology and new products for jobs and wages. In other words, inequality is largely driven by international forces and the role of government is simply to mitigate their adverse effects. Another view is that some parts of the economy are poorly regulated by governments, allowing actors in these groups to capture rents that are substantially in excess of the value of their contribution to society: see, for example, McIntosh (2014). Indeed, some argue that such groups can subvert the democratic process by virtue of the resources that they command[2].

[2] This is Piketty's "democratic control" argument. See Piketty (2014)

This paper investigates some of these issues, building on our previous work on inequality in Scotland. It brings together some of the evidence on these longer run issues. But alongside this analysis it explores the intended and unintended consequences on inequality of the policies currently in place in Scotland. Both of these analyses are novel. The issues have never before been analysed in the Scottish context or have never been confronted with the detailed data that we use.

It has the following structure: in the next section we review some of the debates around causes and measurement of inequality. The following section considers the changes in Scotland's economic and social circumstances over the last 30 years that might have led to changes in inequality. The next section looks at policies that are *intended* to redistribute income between rich and poor in the UK - and how effective these are. This is followed by a discussion of the unintended distributional consequences of policies that are aimed at fulfilling other objectives. The final section concludes.

2. Measuring inequality and some key trends

There are many different ways to classify inequality and many more ways to measure it. Inequality could be measured, for example, across countries, individuals, households or generations. Income and wealth measured in money or real terms are the most common.

An inequality measure is a way of capturing differences in the ability of different groups in the population to access goods and services. But which groups and which population? And how might these differences be reduced to a single number? There are many answers to these questions. And the answers matter: some of the statistics on inequality in Scotland show little change during the last two decades. The reason that this does not correspond to most people's perceptions is linked to the way in which such statistics capture the gap between rich and poor.

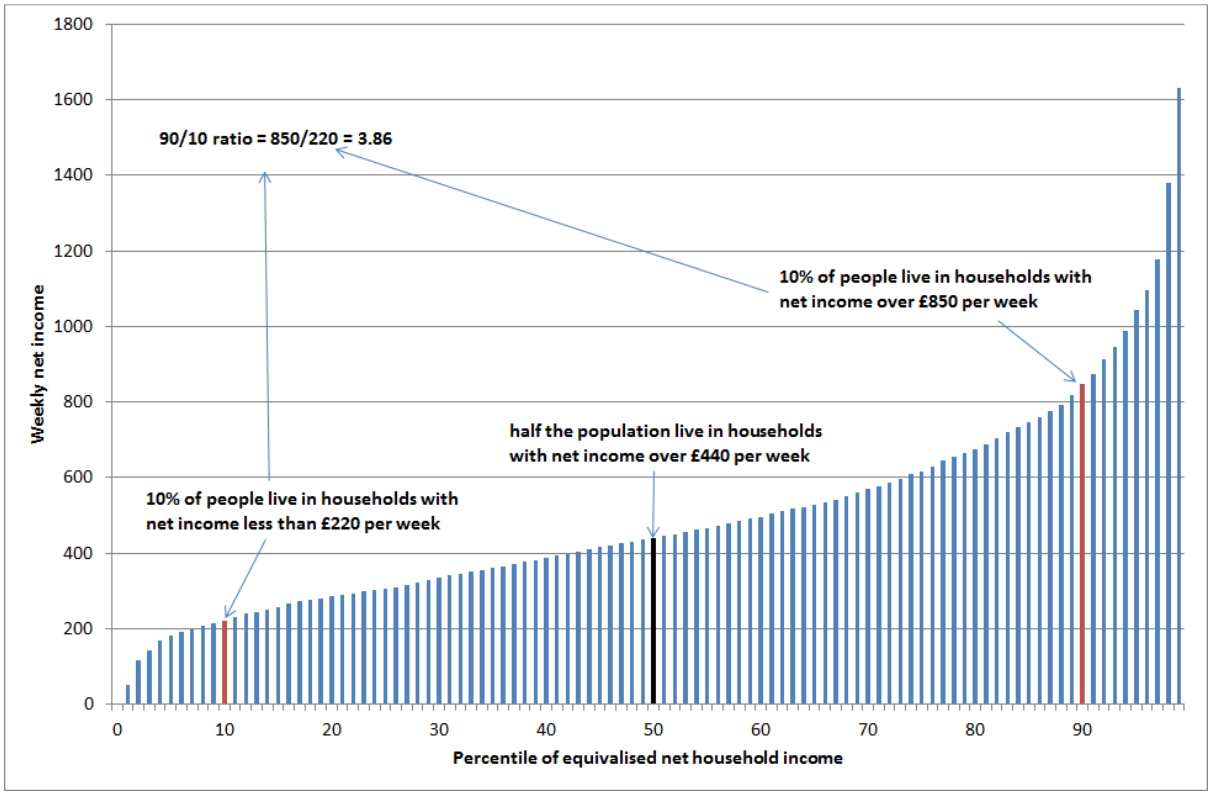
First, while individual wages are generally determined in the labour market and may be distributed quite unequally, access to goods and services depends not only on one's own income, but also on the income of others living in the same household. Glossing over the issue of how income is distributed *within* the household, inequality measures that capture this notion of access to goods and services generally focus on household rather than individual income. Thus the size of the household matters, as well as how many people within the household are working. A trend towards more single person households or more women with children working will affect inequality.

Second, not all household income comes from wages. Some comes from pensions, which can be thought of as deferred wages. These may be just as unequally distributed as wages themselves. Other income comes from government welfare payments: these are generally aimed at supporting the incomes of the poor. This is not always the case: some benefits may be universal – available irrespective of income. A good example of the latter is Winter Fuel Payments, which are available to all UK citizens aged over 60. Not all welfare benefits reduce household income inequality.

Third, it is not just the incomes and welfare benefits that households receive which determines their access to goods and services. It also depends on the prices they pay for these goods and services. It is possible that rich households are can buy goods at lower prices than the poor, for example, through their greater ability to shop in out-of-town malls. And lower-income households purchase a different basket of goods than do higher income households. It follows that inequality can be increased, even if relative incomes are unchanged, if the prices of the goods that the poor buy increase more quickly than goods in general. Because of constraints on revenue raising in other parts of the economy, governments are increasingly focusing on indirect taxes – VAT, sales taxes and excise duties – as a more reliable source of tax revenue. But the unintended consequence of such changes in the tax structure may be a widening of the gap between the rich and poor in their ability to purchase goods and services.

As an example, Figure 2.1 shows the distribution of weekly net income in Scotland in 2013 How do we measure the gap between rich and poor based on this information? There are a range of possibilities: each will capture different aspects of the variation in income. For example, the graph shows that 10% of households earn less than £220 a week while 10% earned more than £850 a week. The '90/10 ratio' is the ratio of the earnings of the worker whose income is greater than 90 per cent of all other workers to the earnings of the worker whose pay is greater than only 10 per cent of other workers.

Figure 2.1: Distribution of Gross Weekly Pay in Scotland 2013 (less than £1500 per week)[3]



Source: HBAI

The key to understanding how inequality has changed is to identify those parts of the distribution that have changed most significantly in recent years. Our previous analysis (Bell and Eiser 2013) showed that the most significant change in recent years has been the growing incomes of the top 2% of earners relative to the median. This change is not picked up by the majority of commonly used measures such as the ratio of the 90th to the 10th percentile or the commonly quoted Gini coefficient, which is affected by all parts of the distribution but particularly by changes around its centre (for a discussion of this issue see Cobham et al. (2013)).

What are the broad trends in income inequality in Scotland? Figure 2.2 is shows individual gross earnings inequality. It is based on the New Earnings Survey and the Annual Survey of Hours and Earnings The statistic that it focuses on is the ratio of the 90th to the 10th percentile of earnings. There is a generally upward trend in this ratio (i.e. greater inequality) for full-time male and full-time female workers over the period from 1983 to 2012.

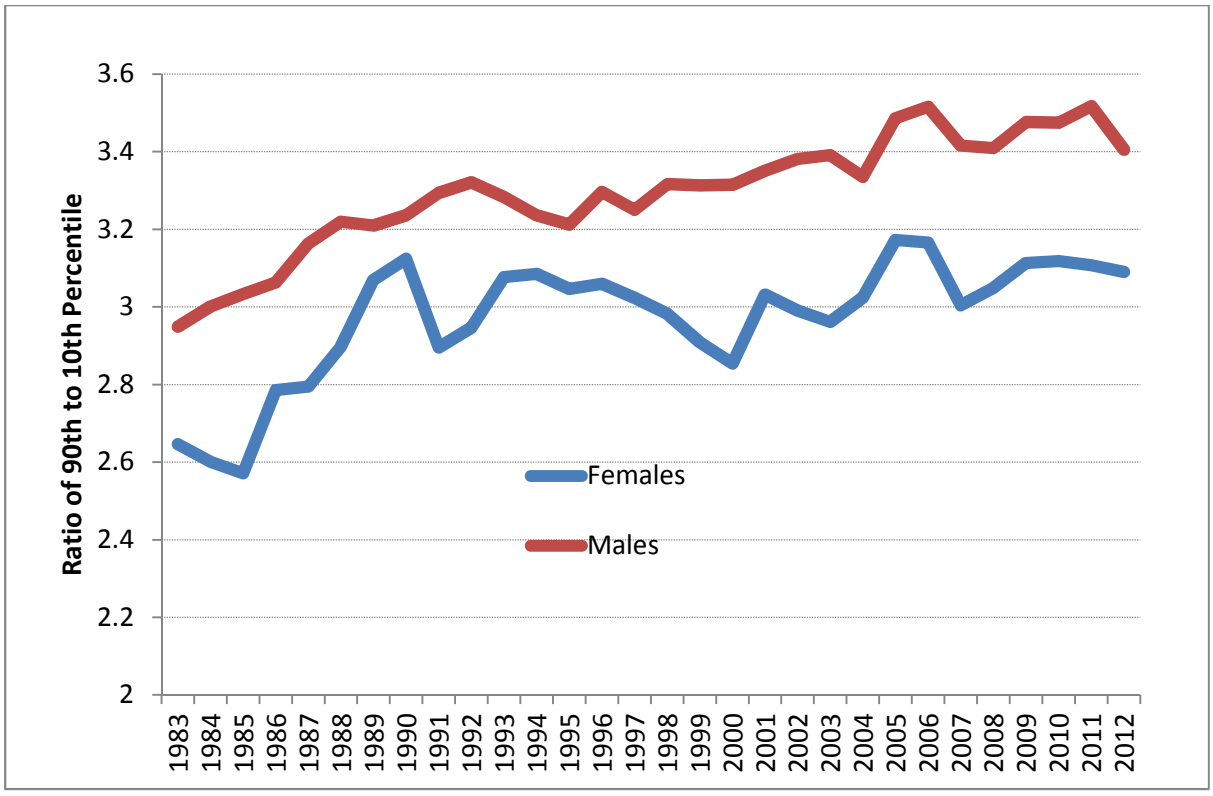
We have gone through the process of explaining what the earnings distribution is and then choosing a statistic to measure how large is the gap between the rich and poor. This has led us to the conclusion that at least on this measure of earnings and using this particular statistic, earnings inequality in Scotland has broadly risen during the last three decades, with the increase being fastest during the 1980s. Indeed, the increase appears to have stalled since the onset of recession.

Another important trend common to most developed countries over the past 20 years is the relative growth of earnings at the very top of the earnings distribution. For Scotland, Bell and Eiser (2013)

[3] The limit of £1500 per week was chosen to improve the portrayal of the distribution of income in Figure 1. The highest income exceeded £20,000 per week.

show that the richest 1% of Scotland's population earned 6.3% of total pre-tax incomes in 1997, increasing to 9.4% by 2009. Bell and Van Reenan (2013) show that workers in the financial sector have accounted for the majority of the income gains at the top since the 2000s. There is ongoing debate however as to whether these gains reflect increasing demand for the most talented executives in a globalised market (Mankiw 2013), or whether it reflects the increased ability of executives to lobby shareholders for pay rises in complex companies where performance is difficult to measure (Piketty et al. 2014).

Figure 2.2: Inequality among full-time workers: Scotland 1983-2012



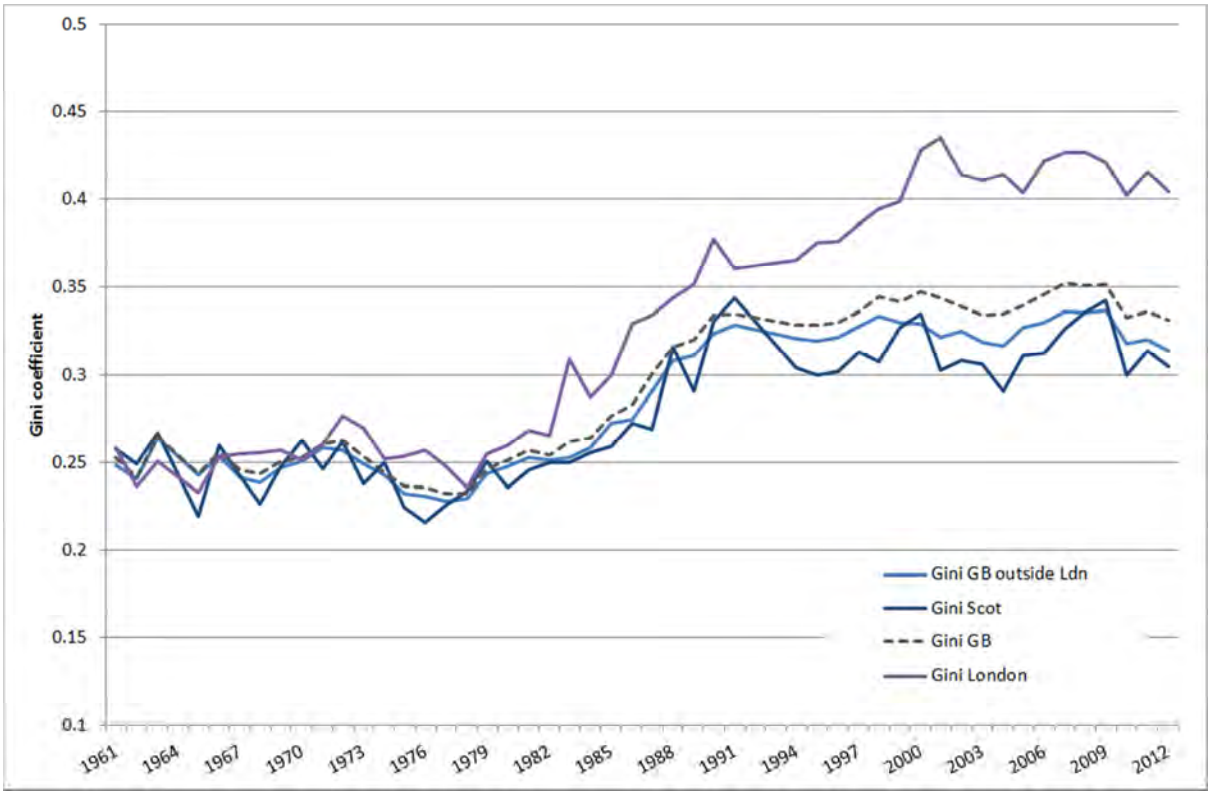
Source: New Earnings Survey and Annual Survey of Hours and Earnings

However, it is important to recognise that the discussion so far has focussed on pre-tax measures of inequality which focuses on the individual rather than the household and which take no account of the prices of goods and services.

In contrast, the real post-tax distribution of household income depends on labour market conditions, but in addition reflects differences in household structure, in direct and indirect taxes and in benefits.

Having identified trends in market (pre-tax) inequality between employees in Scotland, Figure 2.3 shows longer time trends in net (after tax and benefits) household inequality. This uses the Households Below-Average Income (HBAI) dataset produced by the Office for National Statistics. The data are adjusted to take account of family size (equivalised) and are calculated before housing costs (BHC). Inequality is measured using the Gini coefficient.

Figure 2.3: Gini coefficient of net household BHC equivalised income, 1965-2012/13



Notes: household income is shown net of direct taxes and benefits, and equivalised. Data is missing for 1992 and 1993 and values have been interpolated for these years. Source: FRS/ HBAI

The reason for extending the period before our starting point of 1983 is to show how stable household inequality was during the 1960s, how it increased during the 1980s and how relatively stable it has been since the 1990s, at least in Scotland. London is clearly the main driver behind increased inequality at UK level. The argument put by Piketty (2014), among others, is that the 1960s were aberrant in having a low and stable level of inequality. These data showed that Scotland followed the same general pattern as was observed in other advanced economies.

Having described how incomes are distributed and how inequality within the distribution has evolved in Scotland, the next section seeks to describe some of the major changes that have taken place in the Scottish labour market and to explain what effect these may have had on income inequality during this period.

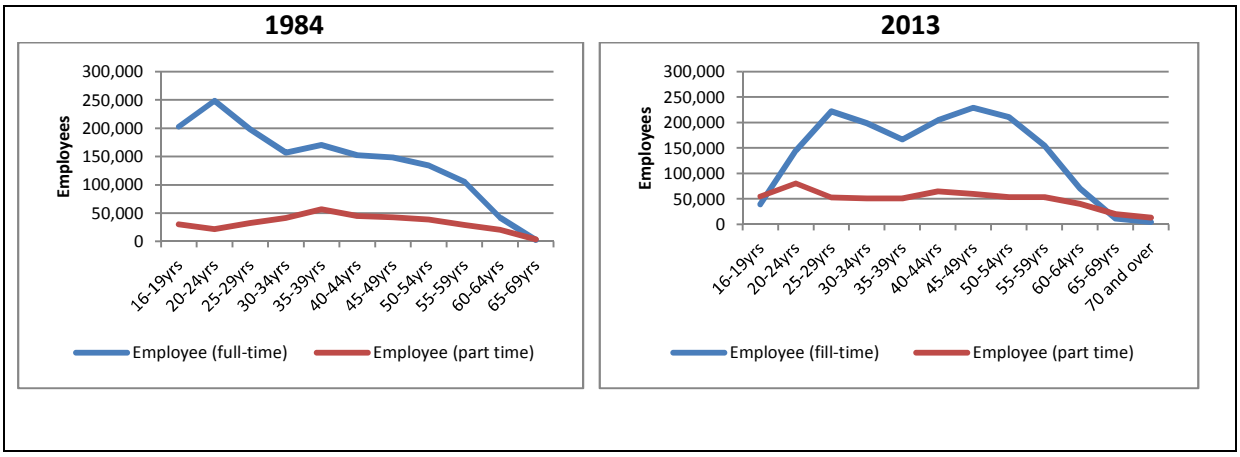
3. Changes in the Scottish Labour Market 1984-2013

In this section, we explain some of the major changes that have taken place in the Scottish labour market over the last 30 years. This description in intended to provide an understanding of the economic and social forces that have reshaped the Scottish economy over this period and to explore the influence that these may have had on levels and trends in inequality over this period.

We focus on four particular years in which relatively comprehensive Labour Force Surveys are available. These are 1984, 1993, 2003 and 2013 (data from the 1983 Labour Force Survey are less easy to interpret). The Scottish economy changed radically over this period. The first of our years, 1984, was notable because of the miners' strike, an event which has a hugely symbolic place in Scotland's past. It marked the turning point from the post-war consensus to an economic policy that was much more market driven and downplayed the role of the state. Arguably this philosophical approach continued under subsequent Conservative and Labour administrations. On a lighter note, it was also the year in which Aberdeen won the European Cup Winners Cup. In 1993, the unpopular poll tax was replaced by the council tax. In 2003, the Labour and Liberal coalition won a majority of seats in the recently re-established Scottish Parliament. In 2013, the first signs of economic recovery from the 2008 recession were evident, following a long period of stagnation. Real wages declined throughout the recession because money wages grew more slowly than prices. In 2013, they stand close to their 2003 level: the average worker in Scotland is no better off in 2013 than he or she was in 2003. Thus, in a sense our last decade has been characterised by a standstill in economic growth. This contrasted with the previous two decades when economic growth in Scotland averaged just over 2% per year.

In this section, we consider a number of different ways in which the Scottish labour market changed over these three decades. One of the most important drivers of change, though largely unnoticed, was the changing age structure of Scotland's population. Figure 3.1 shows the age distribution of full-time and part-time workers in Scotland in 1984 and 2013.

Figure 3.1: Age Distribution of Full-Time and Part-Time Workers in Scotland 1984 and 2013



Source: Labour Force Survey

It is evident from Figure 3.1 that the Scottish workforce in 2013 was on average much older than it was in 1984. The post-war baby boom had little effect on the number of older workers in 1984, whereas by 2013 this group was swelling the number of older workers in their 40s, 50s and 60s. Improved health and life expectancy had also played a role in increasing the number of older

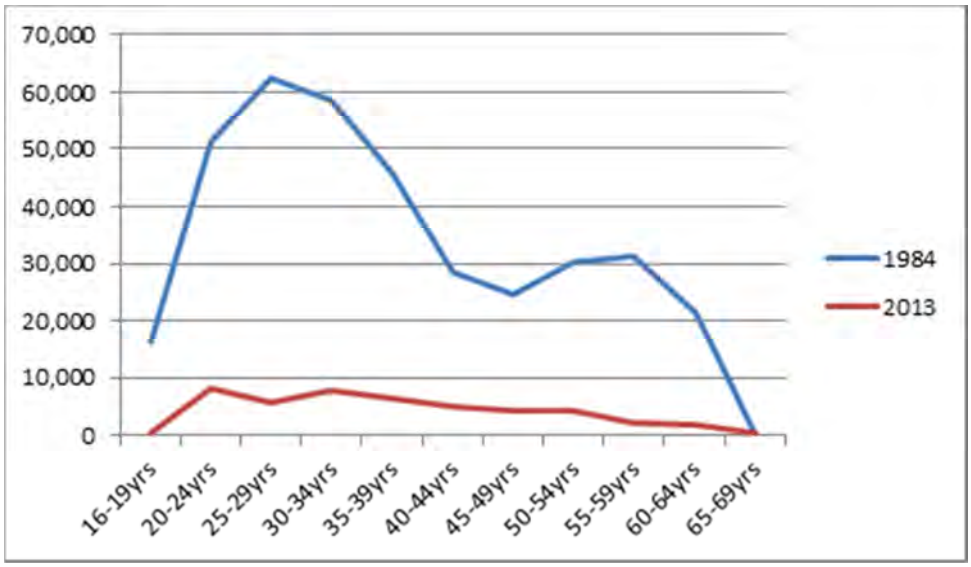
workers present in the Scottish Labour market in 2013. This effect was reinforced by technical change and globalisation: the physical demands of work have changed over time as mechanisation has reduced manual labour and the kinds of products made in Scotland have changed. These developments have facilitated employment among older workers.

The number of part-timers in the Scottish workforce also increased between 1984 and 2013, particularly at younger ages. Part-time work among the 16-24 age group increased substantially.

What do these changes mean for inequality? There are two implications. First, given that wages typically increase with age, the less skewed age distribution of the Scottish workforce in 2013 may have led to upward pressure on wage inequality. Second, the increasing share of part-timers in the Scottish workforce has led to increased inequality, given that part-timers on average earn considerably less than their full-time colleagues.

Our second piece of evidence considers the change in the number of individuals who describe themselves as "looking after the family home" between 1984 and 2013. The age distribution of this group is shown in Figure 3.2 for these years.

Figure 3.2: Numbers "Looking after the Family Home" in Scotland by Age Group 1984 and 2013



Source: Labour Force Survey

It is evident that between 1984 and 2013 there was a very substantial reduction in the numbers of people (mainly women) who chose to stay at home rather than to participate in the labour market. There are both supply and demand elements to this change: firstly, changes in technology have reduced the manual workload associated with looking after a home; secondly, reductions in fertility have reduced the overall need for childcare; thirdly, the change towards a more service-based economy has led to increased demand for intellectual and interactive skills and reduced the constraints on hours of work that are a common feature of manufacturing production.

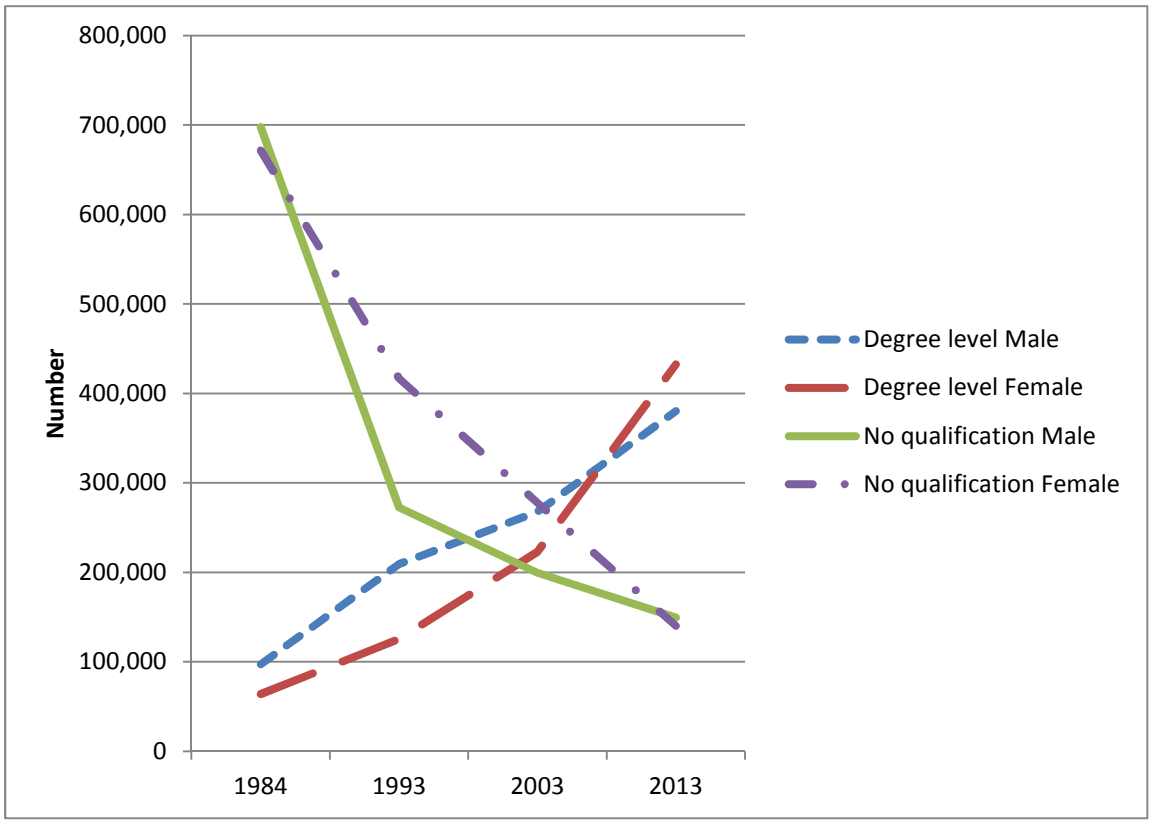
What does this mean for inequality? Many of the new entrants to the labour market are married women seeking to supplement the household income. They typically work fewer hours and, possibly as a result of gender discrimination, receive lower pay for these hours. This expands the number of

workers at the lower tail of the income distribution, which in turn leads to increased wage inequality on most measures.

However, one must be careful about translating increases in *individual* inequality into *household* inequality. Household inequality reflects the inequality of the sum of the income which is earned within the household. If those who join the labour market, having previously looked after the family home, earn relatively little but their partners earn a lot then inequality may be *reduced* if those couples that are already both working both earn around the average wage. A key issue in understanding household inequality is whether couples tend typically to be both high earners or both low earners rather than having one high earner and one low earner.

One key determinant of this which we take up subsequently will be the qualifications of the members of the household. One of the major social and economic changes that has taken place since 1984 has been the increase in enrolment rates in further and higher education. This has had a profound effect on the Scottish workplace, which is illustrated in Figure 3.3.

Figure 3.3: Number of Scots Of Working Age With No Qualifications And Number Of Scots Of Working Age With Degree Level Qualifications



Source: Labour Force Survey

Figure 3.3 shows the number of people in Scotland of working age that either hold a degree level qualification or have no qualification at all for our selected years and by gender. It firstly shows the massive decline in the Scottish workforce without any qualifications at all. Though the intermediate paths differ somewhat between males and females, the endpoints in 1984 and 2013 are almost identical. Secondly, it shows the substantial increase in the number of people of working age with degrees. These have increased fourfold in the last 30 years. Interestingly, figure 3.3 also shows the

number of females with degree level qualifications surpassing the number of males between 2003 and 2013 - a reflection of higher enrolment levels among women at Scottish higher education institutions in recent years.

What does this mean for inequality? Graduates typically earn a "premium" over other workers. One explanation of this is that their labour tends to complement new technologies, whereas the labour of the unqualified is typically substituted for by new technologies. Although this is perhaps too simplistic a way to analyse the modern labour market, these effects may have had some significant effects over the last 30 years. However, the decline in the number of unqualified workers may also have led to increased earnings. The net effect on income inequality is therefore less clear than the overall positive impetus given to the earnings distribution stemming from increased qualifications, whether these are at or below graduate level.

The next piece of evidence focuses on growth in different types of employment since 1984. Table 3.1 shows the change in the number of full-time and part-time employees and the number of self-employed in Scotland between 1984 and 2013. The value for 1984 is indexed at 100, so that the other values can easily be converted to percentage changes.

Table 3.1: Indices of Growth in Types of Employment, Scotland 1984-2013

Year	Employee (full-time)	Employee (part-time)	Self-employed
1984	100	100	100
1993	101.2	127.9	141.6
2003	102.6	150.9	142.8
2013	105.9	162.1	167.4

One response to the increased market orientation of the Scottish economy since 1984 has been the growth in labour market flexibility. Over much of this period, employment protection for full-time workers was at a higher level than that for part-timers. The growth in part-time employment over this period very substantially exceeds the growth in full-time employment. Yet the growth in self-employment, where workers are effectively responsible for their own terms and conditions of work, has been even faster.

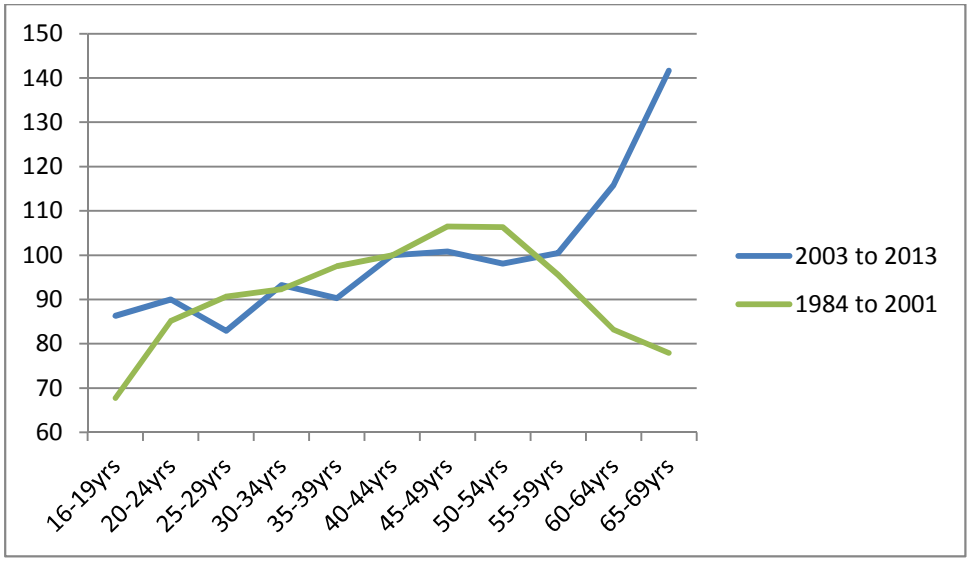
What does this mean for inequality? Relatively faster growth among part-timers is likely to increase inequality because they typically work fewer hours and earn lower hourly rates than do the full-time employed. Self-employment earnings are more unevenly distributed than employment earnings. Hence, increased numbers of self-employed are likely to also increase earnings inequality.

Interestingly, one effect of the switch towards part-time working and self-employment is a reduction in the nonwage costs that employers or contractors may face. For example, if firms contract with a self-employed individual to provide certain services, there may be no provision in the contract for annual leave - which would have been a cost to the employer if the relationship had been configured as a standard employment contract.

The next piece of evidence brings together data from different sources. Because wage data in the Labour Force Survey were not collected until 1998, data prior to that use the New Earnings Survey. The two surveys have been shown to give largely similar results. Figure 3.4 compares the growth

rate in wages for different age groups between 1984 and 2013. It first uses the New Earnings Survey to make a comparison between 1984 and 2001. It then uses the Labour Force Survey to compare 2003 with 2013. In each case, the growth in each age group's weekly earnings is compared to the wage growth of those aged 40 to 44. This age group's increase is set at 100. Thus, values less than 100 indicate that a particular age group's wages have grown more slowly than those aged 40 to 44. Values more than 100 indicate a faster rate of growth.

Figure 3.4: Changes in the Age Wage Profile between 2003 and 2013



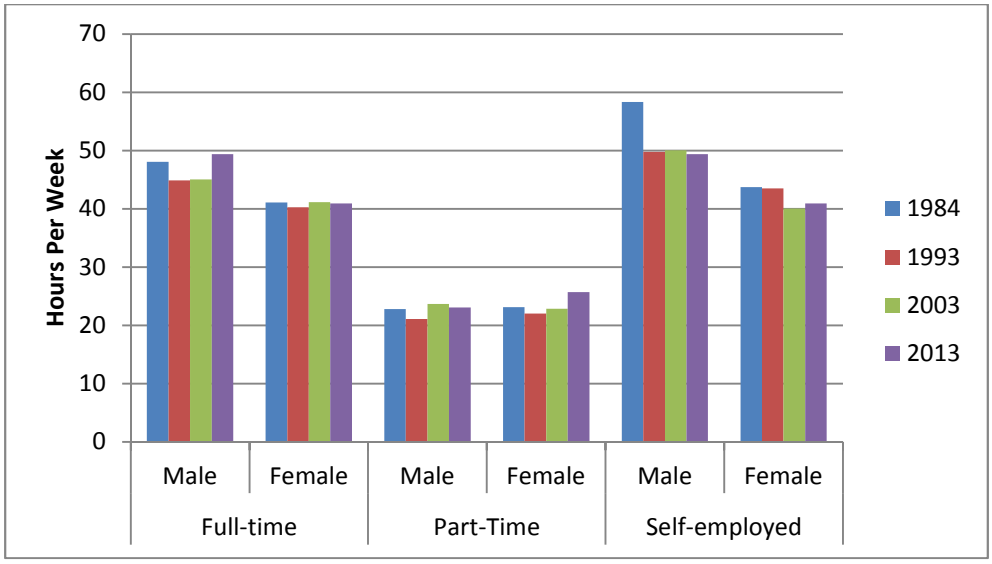
Source: Labour Force Survey

Throughout the period young workers' wages have been growing more slowly than those of prime age workers aged 40 to 44. In the early part of the period, older workers' wages grew more slowly, whereas after 2003, this group fared particularly well with wage growth well in excess of those aged 40 to 44. Why has this happened? One explanation is that increasing enrolment in further and higher education has 'selected out' the more productive members of the younger age groups. In consequence those who entered employment immediately after leaving school were less likely to earn the wages that their peers might have commanded had they not stayed in education.

What effect does this have on inequality? An increased gap between young workers and older workers is likely to increase inequality of earned income. However, those in work may still have higher income than do students. Increases in the number of students may have increased the gap in overall income, where all sources of income, including earnings are considered. This highlights the need to sometimes consider inequality from the lifetime perspective. Students may have relatively low incomes, but later earn a graduate premium: they may therefore experience periods in their lives where they are relatively poor and other periods when they are relatively rich. If they are able to borrow in anticipation of future higher earnings, their initially low incomes do not have to lead to a correspondingly low standard of living. Snapshots of income inequality at different times in their lives may exaggerate inequality when viewed from a lifetime perspective.

Next we focus on the dog that didn't bark – hours of work. Figure 3.5 shows the average number of weekly hours for male and female full-time and part-time workers between 1984 and 2013.

Figure 3.5: Average Weekly Hours for Full-Time and Part-Time Men and Women 1984-2013



Source: Labour Force Survey

On average, males work longer full-time hours than females but fewer part-time hours. The self-employed work longer hours than employees and the male self-employed work longer hours than the female self-employed. But within each group, changes in average working time between 1984 and 2013 are relatively minor. What does this mean for inequality? It suggests that it is changes on the extensive margin (the structure of employment) rather than changes on the intensive margin (hours of work) that are responsible for quantity driven changes in the inequality of weekly earnings. We next consider two important aspects of changes to the structure of employment in Scotland.

Another issue which has a bearing on earnings inequality is the extent to which workers are supported by collective organisations in bargaining with employers. Unfortunately the Labour Force Survey only started to collect statistics on union membership in 1989 and therefore data on our full time period is not available. In 1989, 40.7% of workers in Scotland were members of trade unions or staff associations. By 2013, this share had fallen to 28.7%. Trade union membership has not only fallen in general. It has become increasingly concentrated on the public sector. The 2013 data show 56.7% of public sector employees belonging to trade union or staff associations but only 15% of workers in the private sector belong to similar organisations.

Finally in this section we focus on changes in Scotland's industrial and occupational structure over the last 30 years. These are potentially the most interesting but also the most problematic comparisons to make. This is because the definitions both of occupations and of industries have changed on several occasions during this period. This renders consistent comparisons very difficult. What we have done is to collect data on the most common occupations and the largest industries by employment in 1984 and 2013. These are shown in Tables 3.2 and 3.3.

Table 3.2: Most Common Occupations in Scotland 1984 and 2013

Most Common Occupations (Scotland 1984)		Most Common Occupations (Scotland 2013)	
Other clerks & cashiers (not retail)	149,179	Sales and retail assistants	109,410
Shop salesmen & assistants	81,533	Care workers and home carers	72,671
Cleaners, window cleaners	67,004	Nurses	65,104
Nurse administrators, nurses	64,430	Other administrative occupations nes	57,711
Teachers nec	57,945	Cleaners and domestics	49,088
Other domestic & school helpers	51,400	Primary and nursery education teachers	38,467
Typists, shorthand writers, secretaries	50,540	Kitchen and catering assistants	36,131
Other proprietors & managers (sales)	46,671	Secondary education teaching professionals	33,552
Drivers of road goods vehicles	37,341	Nursing auxiliaries and assistants	26,929
Carpenters, joiners	34,127	Elementary storage occupations	26,600
Supervisors - other clerks & cashiers	30,660	Waiters and waitresses	25,899
Metal working production fitters etc	29,812	Book-keepers, payroll managers	24,632
Maintenance fitters	27,220	Managers and directors in retail	24,362
Farmers, horticulturists etc.	24,202	Large goods vehicle drivers	23,476

Table 3.3: Industries by Employment Size in Scotland, 1984 and 2013

Industries by Size (Scotland 1984)		Industries by Size (Scotland 2013)	
Retail distribution	191,350	Retail trade, except vehicles	250,529
Construction	188,176	Education	220,233
Vets hospitals nursing homes	105,107	Human health activities	198,532
Polytechnics	90,376	Public admin, defence, social sec	166,310
Social welfare charity & comm. services.	67,545	Social work without accommodation	108,737
National gov. Services (nes)	57,321	Food and beverage service activities	102,330
Agriculture and horticulture	47,361	Specialised construction activities	86,570
Wholesale distribution	39,630	Residential care activities	72,668
Local government service (nes)	34,289	Land transport inc via pipelines	70,256
Shipbuilding and repair	30,937	Construction of buildings	62,084
Sport & other recreational services	30,093	Financial ex insurance and pension	57,032
Hotel trade	26,641	Wholesale trade, except vehicles	54,707
Spirit distilling and compounding	26,248	Architectural and engineering	47,549
Banking and bill counting	26,191	Services to buildings and landscape	46,454
Repair & service of motor vehicles	25,727	Accommodation	42,670
Deep coal mines	25,697	Other personal service activities	39,625
National defence	24,288	Wholesale retail trade repair vehicles	39,343
Universities	23,952	Mining support service activities (oil & gas)	38,525
Extraction of oil natural gas	23,229	Sports, amusement, recreation	35,880
Education (not elsewhere specified	22,306	Computer programming and consultancy	35,407
Sched. road pass. trans.& urban railways	18,922	Crop, animal production, hunting	34,405
Prodn and distribution of electricity	18,523	Civil engineering	33,601
Insurance (except social security)	18,323	Legal and accounting activities	33,352

Perhaps the key issue here is the extent to which changes over the period 1984 to 2013 reflect influences discussed earlier – globalisation and technical change. The most common occupation in 1984 was non-retail clerks and cashiers. There is no obvious parallel in the 2013 data. Employment in this occupation, perhaps above all others, has perhaps been subject to competition from technical change in the form of information technology. This group has almost completely disappeared, as have the next tier of workers – those responsible for supervising clerks and cashiers. Other occupational groups that have suffered include fitters, both maintenance and metalworking. Demand for their services has declined both with the decline of Scottish manufacturing and with the increased reliability of all forms of machinery due to improved technology. One clear example of the substitution between workers and machines is shown in Table 3.4 which gives the number of bank clerks and ATM machines in the UK over the period 2002 to 2012.

Table 3.4: Banks Clerks and ATMs in the UK 2002 and 2012

"Bank clerks" in 2002	300,000
"Bank clerks" in 2012	163,000
Change	-46%
ATMs in 2002	42,100
ATMs in 2012	66,000
Change	57%

Source: http://www.link.co.uk/AboutLINK/Statistics/Pages/Statistics.aspx

Occupations whose star has risen include care workers. Demographic change and the difficulty of substituting the personalised services that they provide has led to a substantial increase in demand for this occupation. In addition, the clients for whom they care are generally unwilling or unable to move, implying that globalisation is no threat. Waiters and waitresses are similarly not threatened by technical change or globalisation. They have also benefited from increased affluence and the reduction in the number of individuals “looking after the family home”, which has led to an increase in the demand for their services. Not surprisingly this occupational group has grown substantially since 1984.

Now consider the changes to Scotland’s industrial structure since 1984. Globalisation may have largely accounted for the decline in shipbuilding and mining, which were both in the top 16 industries in 1984. The industries that have grown have largely been in the service sector and are perhaps less subject to international competition. These include financial and building services, and restaurants (food and beverage service activities). And of course a workforce is needed to service the information technology sector: hence the growth in computer programming and consultancy.

What effect does this have on income inequality? One of us has previously used the Labour Force Survey to investigate whether the UK labour market has been “polarised” - the changes in industrial structure brought about by globalisation and the effects of information technology on the demand for skills has led to a growth in the number of jobs that are either “lovely” - high skill - on the one hand, or “lousy” on the other (Bell and Blanchflower 2010). This terminology was developed by Goos and Manning (2007). “Lousy” jobs are those which typically involve tasks that are not skilled but are also not easily routinised. As described above, care workers, waiters and waitresses would fall into this category. Our findings are for the period 2002 to 2008, during which there was a consistent occupational classification. These were constructed by subdividing the 2464 occupations and

industry combinations for which we had earnings data into deciles based on the median earnings in 2002. We then calculated employment in 2002 and 2008 in each of these categories and aggregated these for each earnings decile. We finally calculated the growth rates in employment by decile using 2002 and 2008 employment levels. We also calculated how far growth in the different deciles was concentrated among those aged 16 to 24 to determine if young people's employment is concentrated at the "lousy" or the "lovely" end of the jobs spectrum.

The results show that over this period employment growth has tended towards the "lovely**"** end of the spectrum and that employment contraction has been concentrated among the intermediate group of occupations. Further, younger workers seem to be concentrated more towards the "lousy" end of the jobs hierarchy. These findings for the UK are broadly consistent with the data for Scotland in Tables 2 and 3. We return to this issue in Section 6. The next section looks at the U.K. policies which are intended to redistribute income from rich to poor.

4. Policy with intended consequences

Governments attempt to influence the income distribution in a number of ways. The structure of earnings taxation is perhaps the most obvious of these. But governments can also intervene in the labour market directly, through legislating a minimum wage of regulating labour markets in other ways.

In this section we first consider the effectiveness of the UK's tax and benefit system in influencing income inequality, and explore how the UK compares to other countries. We then consider the role played by the National Minimum Wage in reducing inequality of wage inequality at an individual level. Subsequently, we go on to examine the possible impacts of a significant increase in the minimum wage on the level of inequality in Scotland, drawing on the University of Scotland's micro-economic model.

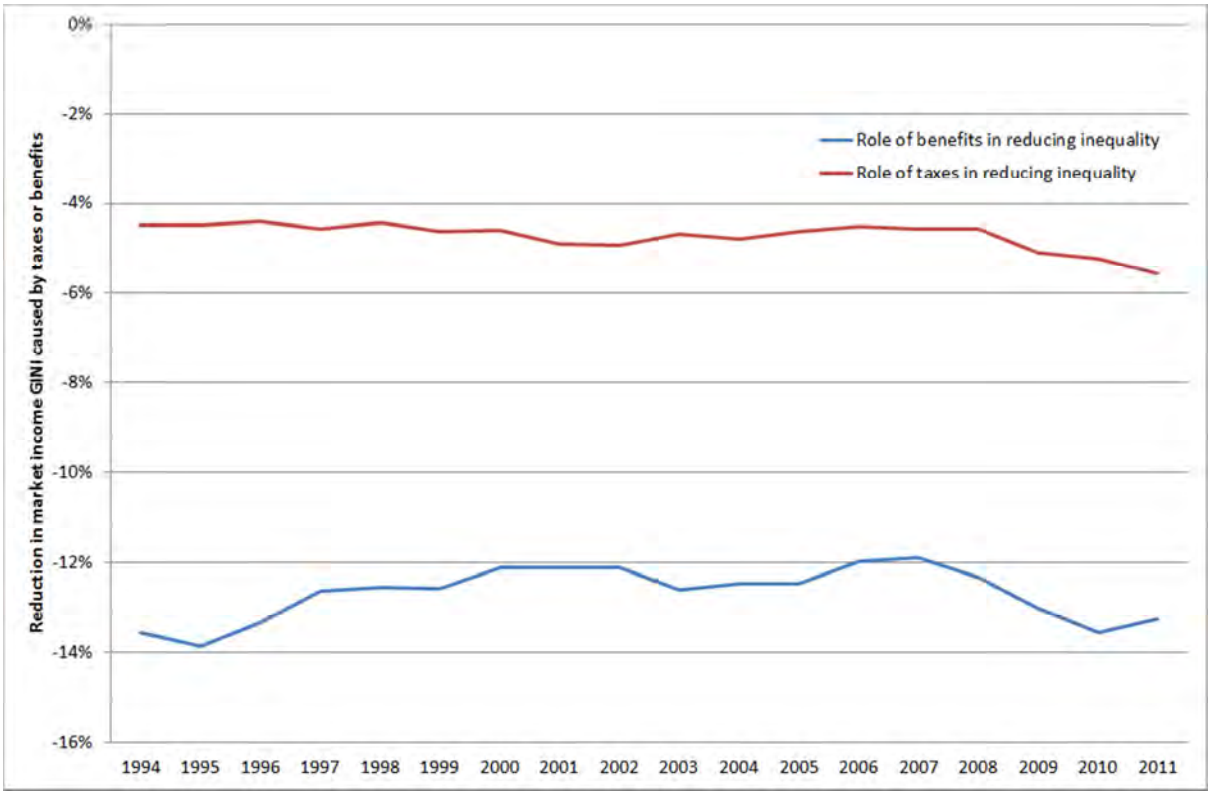
4.1. Redistribution through taxes and benefits

The principal way in which the UK tax system achieves progressivity and redistributes from rich to poor is through the system of earnings taxation[4]. Earnings taxation in this respect includes both personal taxes (income tax and national insurance) as well as benefits. Personal ('cash') benefits include the full range of benefits for those out of work through illness, disability, caring responsibilities or unemployment; benefits for those in-work but on low-incomes, notably including tax credits; benefits for those of pensionable age, notably the State Pension; and various other family related benefits such as Child Benefit.

One way of measuring the redistributive effects of taxes and benefits is by comparing the respective Gini coefficients, before and after taxes and benefits are taken into account. Figure 4.1 shows the role of taxes and benefits respectively in reducing the market income GINI in GB since 1994. Cash benefits play a much more significant role in reducing inequality than taxes; benefits typically reduce the market income Gini by around 14 percentage points, while taxes reduce the Gini by around four percentage points. Since 1994, there has been relatively little change in the role played by taxes and benefits in reducing inequality.

[4] The UK makes relatively little use of wealth taxes for redistributive purposes. Inheritance tax for example only applies to around 1% of deaths as the threshold for liability is high. Similarly, land and housing taxes do not have a particularly strong redistributive element.

Figure 4.1: Role of taxes and benefits in reducing the market income Gini coefficient, GB



Notes: Taxes include income tax, Employee National Insurance contributions, and council tax. Benefits include all cash benefits for the working age and non-working age population, including tax credits and the State Pension. Source: HBAI

Similar analysis over a longer timeframe (1980-2009) has been undertaken by the ONS (Anyaegbu, 2011). This reiterates the conclusion that the redistributive role of taxes and benefits has not changed significantly. Over the period since 1980, taxes have become marginally more redistributive (reducing the market income GINI by 3% in 1980, falling to 4% in 2009). The effect of cash benefits on reducing the GINI varies more over the business cycle but has averaged around 14 percentage points on average.

The redistributive effects of a tax or benefit depend on two factors: the size of the tax/benefit, measured by its average rate as a percentage of income; and the progressivity of the tax or benefit, measured by the concentration coefficient[5]. Anyaegbu (2011) reports the following findings for the UK:

- From the mid-1990s to the mid-2000s there has been a slight decline in the average rate of cash benefits, but this was offset by a rise in the level of progressivity of benefits (probably associated with the introduction of tax credits).
- Since the mid-2000s the level of progressivity of cash benefits has tended to fall slightly, but the average benefit rate has risen (as is usually the case during a recession). Since the 1980s,

[5] The concentration coefficient can take values between -100 and 100; a value of -100 means that the richest household received all the benefits (or the poorest household paid all the taxes), and a value of 100 means that the poorest household received all the benefits (or the richest household paid all the taxes). If a tax concentration coefficient increases over time then taxes are becoming more progressive, while if a benefit concentration coefficient falls over time then benefits are becoming more progressive.

the trend is for contributory benefits to become less progressive, whilst non-contributory benefits have become more progressive.

- Cash benefits account for around 50% of the income of retired households, compared to 10% of the income of non-retired households. However, cash benefits are more targeted towards reducing inequality among non-retired households.
- Direct taxes have remained constant as a share of gross income (at 20%) since 1990, but have become slightly more progressive.

How does the level of redistribution in the UK compare with that in other OECD countries? Figure 4.2 compares market (i.e. pre-tax and benefit) income inequality and net (post-tax and benefit) income inequality in a selection of OECD countries. The gap between market income inequality and net income inequality is the level of redistribution. Countries are ranked according to the level of redistribution.

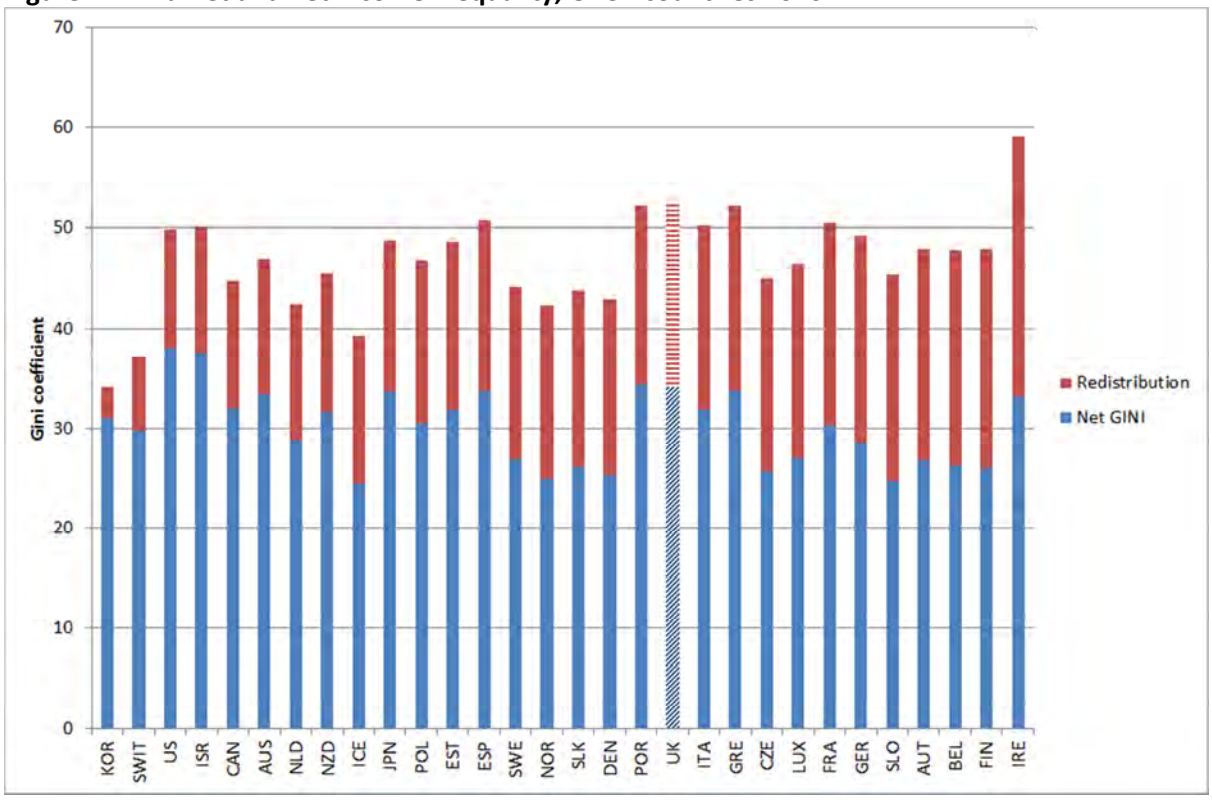
In the UK, taxes and social transfers have the effect of reducing the market income GINI coefficient by just over 18 percentage points, indicating that the UK tax/ benefit system is slightly more redistributive than for the OECD as a whole (where the effect of taxes and social transfers is to reduce the market income GINI coefficient by 17 percentage points).

It may come as a surprise to learn that the UK's tax and benefit system is, at face value, more redistributive than the OECD average, and more redistributive than the tax and benefit system in Nordic countries such as Sweden and Norway (but not Finland). However, a caveat here is that the level of redistribution is not independent of the level of market income inequality, for two reasons.

First, one would expect a positive link between levels of market income inequality and redistribution even in the absence of any conscious policy effort to counter inequality trends: because of the progressivity built into tax-benefit systems, a more dispersed market income 'automatically' strengthens the equalising effect of a given policy. Figure 4.3 plots the level of redistribution against market income inequality for OECD countries, and reveals evidence of the positive relationship that one would expect. It shows that some countries – including Slovenia, Denmark and Finland – have relatively high levels of redistribution conditional on their levels of market income inequality, whilst others –notably including the US – have a relatively low level of redistribution conditional on market income inequality. The level of redistribution in the UK, although slightly above the OECD average, is perhaps slightly below where we might expect it to be, given the UK's relatively high levels of market income inequality and the average level of redistribution in OECD countries, similar to that in Greece, Portugal and Spain.

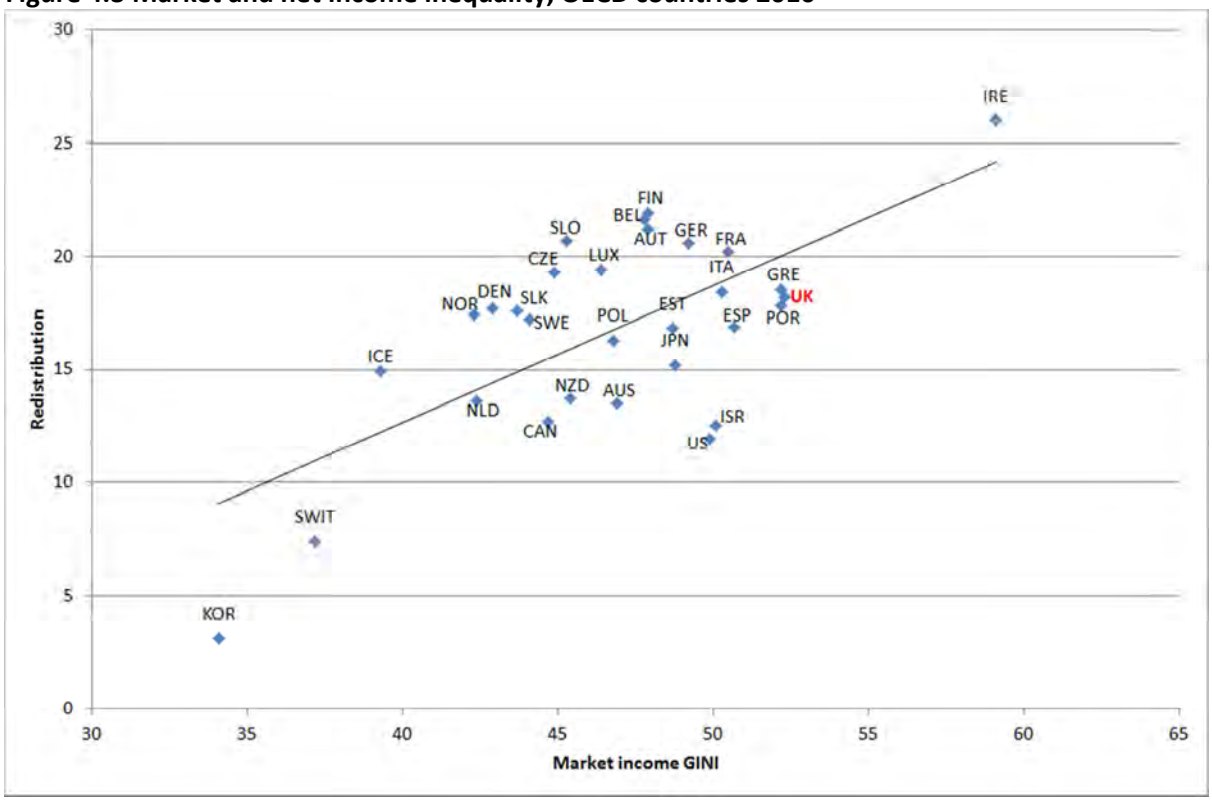
Second, market income inequality may be reduced by higher levels of redistribution. For example, there is some evidence that the earnings of the highest earning 1% have increased most in countries which have cut top tax rates the most since the 1980s. Piketty et al. (2014) find evidence that lower top tax rates might increase the incentives for high-paid individuals to bargain for higher pay. This implies that increasing top tax rates (i.e. greater redistribution) could in itself reduce market income inequality.

Figure 4.2: Market and net income inequality, OECD countries 2010



Notes: the height of each bar (blue + red areas) represents market income inequality (pre tax and benefits). The red area denotes the extent to which taxes and benefits reduce the market level of inequality. Source: OECD

Figure 4.3 Market and net income inequality, OECD countries 2010



Source: OECD

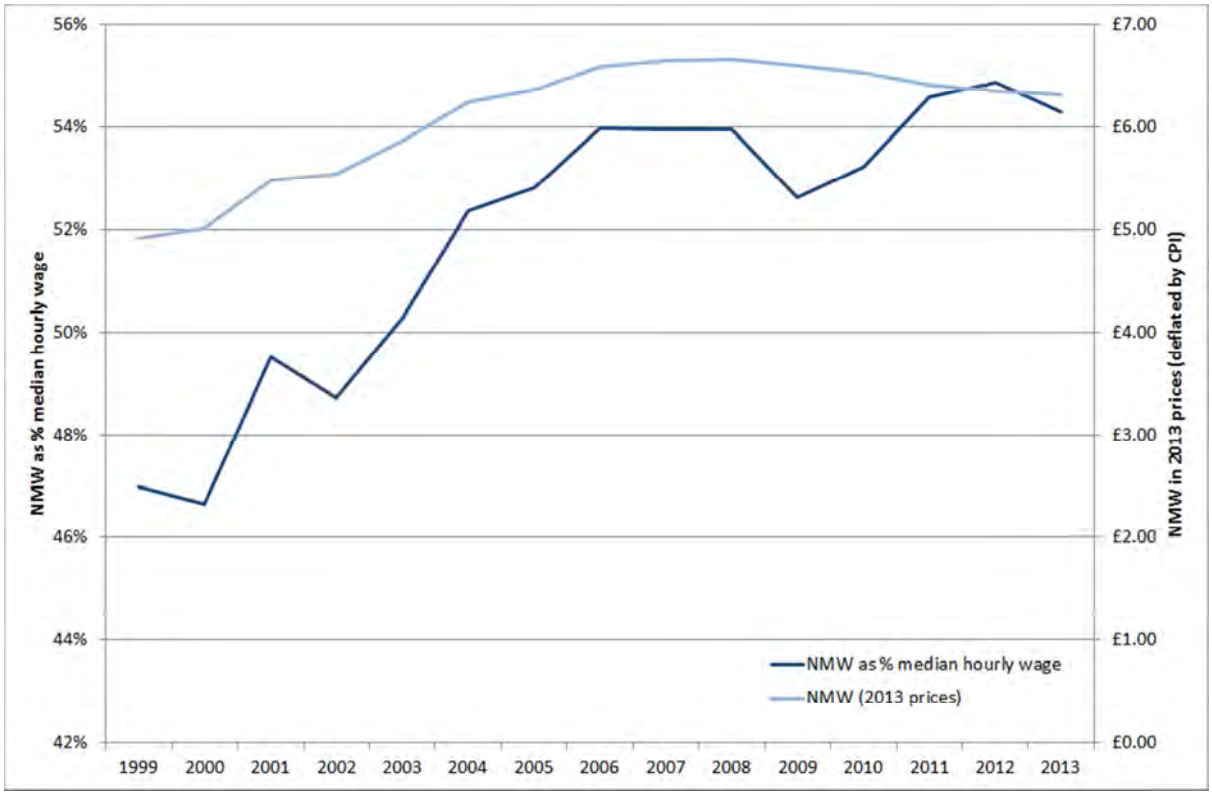
Summarising the information in Figures 4.2 and 4.3, we can say that the UK has a slightly higher level of redistribution than the OECD average, although the level of redistribution in the UK is not particularly high given its higher level of market income inequality, which should, ceteris paribus, result in higher redistribution for a given policy. However, even if the UK's tax and benefit system reduced market income inequality by an equivalent amount as it does in Denmark or Finland (where redistribution reduces the market income GINI by 14 and 15 percentage points respectively, compared to 13 percentage points in the UK), then the UK's level of net income inequality would remain higher than it is in these countries. Put another way, for the UK to reduce its level of net income inequality to Nordic levels entirely through taxes and transfers, then it would have to do so by having a much more redistributive fiscal system than these countries do (although, as noted above, higher redistribution may play a role in reducing market income inequality.

4.2. Minimum wage

The effects of the National Minimum Wage on individual wage inequality

The national minimum wage (NMW) was introduced in the UK in 1999. It was initially set at £3.60, around 47% of the median wage. Over the period to 2006, the NMW was raised more rapidly than median wage growth (Figure 4.4). Since 2007 the value of the NMW has declined in real terms, but has continued to grow relative to the median wage.

Figure 4.4: National Minimum Wage in real terms and as percentage of median wage



Source: HM Treasury and Annual Survey of Hours and Earnings

There is a huge literature on the effects of the minimum wage. Most of this considers the effect of the NMW on employment, and this literature largely finds that the NMW has a negligible effect (i.e. it does not reduce employment), at least for levels of the minimum wage observed in countries like the US and UK (Butcher et al. 2011).

But evidence also suggests that the NMW has a significant effect in reducing wage inequality, both in the US and in the UK. For the UK for example, Butcher et al. (2011) show that in years when the NMW increased relative to the median wage, inequality at the bottom end of the earnings spectrum tended to fall. More conclusively, they find that the reduction in wage inequality since the NMW was introduced has been largest in low-wage segments of the labour market. Specifically, Butcher et al. find that for young workers, around 40% of the reduction in the log 50/10 wage ratio between 1998-2010 can be ascribed to the NMW. For older workers, the impact of the NMW is somewhat smaller.

The effects of a Living Wage on household inequality

There is significant interest in the role of a Living Wage, or at least a higher minimum wage, in helping to tackle poverty and address inequality. The Expert Working Group on Welfare, set-up by the Scottish Government, recommended in its recent report that all parts of the public sector should pay the living wage (currently £7.65 per hour), and that the minimum wage should rise in phased amounts to equal the living wage.

However, although the NMW appears to have had a positive effect on individual wage inequality, the effect at a household level of further increases in the minimum wage is more ambiguous. This is because of the way in which low-paid work is distributed across households with different levels of net income, as we now explain.

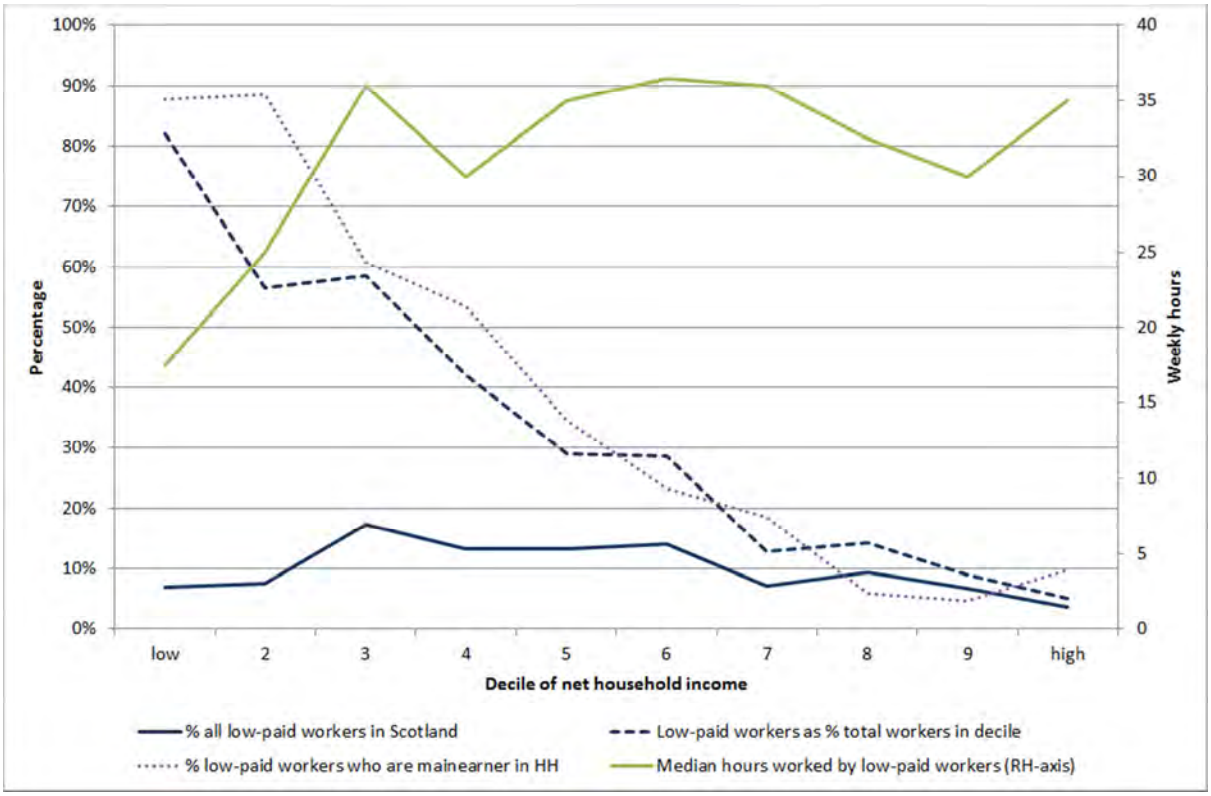
Some 22% of all working people in Scotland earned less than the living wage of £7.20 per hour in 2011/12. As mentioned in the introduction, analysis of poverty and inequality is normally undertaken at household level, taking into account the net incomes of households, and the composition of households. A further extension that is normally undertaken before calculating measures of inequality is to "equivalise" each household's income. The process of equivalisation attempts to adjust household incomes to take account of differences in the cost of living that they face – for example, an income of £500 per week will 'go further' for a single adult than it will for a couple with two children.

In considering the likely impacts of a living wage on the distribution of incomes across the distribution of household net income, several factors are important.

- *First, how are low-paid workers distributed across the distribution of household net income?* Figure 4.5 shows that low-paid workers (i.e. those earning less than £7.20 per hour) are not only found among low-income households. The blue line in Figure 4.5 shows that low-paid individuals are spread relatively evenly throughout the income distribution – but they are in fact slightly more likely to be found in deciles 3-6 than in deciles 1 and 2. (Low-paid workers are also found in relatively high-income households, because they can include for example young adults living with parents).
- *Second, do low-paid workers at different parts of the income distribution work similar hours per week?* The green line in Figure 4.5 shows that low-paid workers in the bottom two deciles work fewer hours per week than low-paid workers in higher deciles.
- *Third, what proportion of workers in each decile of the net household income distribution are low-paid?* The dashed line in Figure 4.5 shows that the majority of workers in the bottom three deciles earn less than the living wage. The proportion of workers who are low-paid falls as we move up the income distribution, but even in the ninth decile, as many as 10% of workers are low-paid.

- *Fourth, what proportion of low-paid workers in each decile are the main income earner for their household?* The dotted line in Figure 4.5 shows that, in the bottom two deciles, almost 90% of low-paid workers are the main-income earner for their household. As we move higher up the income distribution, low-paid workers are increasingly likely to be a second earner in the household. (It may come as a surprise that some low-paid workers in the top-decile are the main earner for their household. In all cases, this relates to people aged over 60 who are in receipt of pension income, but who are also doing some work at below the minimum wage).

Figure 4.5: distribution and characteristics of low-paid workers across the distribution of net household income, Scotland 2011/12



Source: Family Resources Survey

The preceding discussion suggests that the effects of a living wage on the income distribution are not obvious. On the one hand, the fact that there are more low-paid workers in deciles 3-6 than in deciles 1-2, and the fact that these workers work more hours on average than those in deciles 1-2, suggests that a living wage will boost gross earnings in the middle of the distribution more than those at the bottom. On the other hand, the fact that low-paid workers in deciles 1-2 are more likely to be the main earner in their household suggests that a living wage may have a greater proportionate effect at household level for these households; as does the fact that a higher proportion of all workers in the bottom deciles are low-wage workers. A further consideration is the role that taxes and withdrawal of benefits might play at different parts of the income distribution in mitigating any effects on pre-tax and benefit incomes.

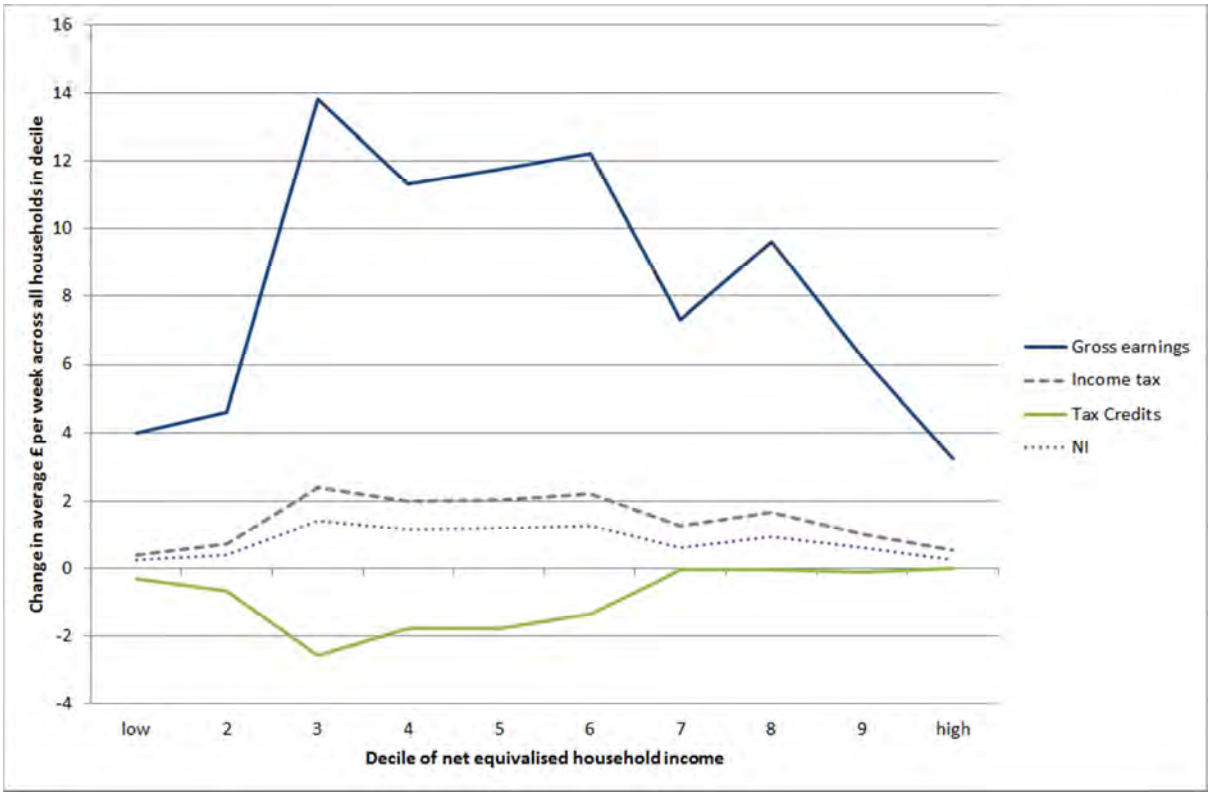
To examine the full effects of the implementation of a living wage, we use a micro-economic model of the Scottish economy developed at the University at Stirling. All Scottish workers who earn less than the living wage in 2011/12 have their wage increased to £7.20, and the effects of this on the

income distribution (including the effects of taxes, tax credits and benefits) can be explored. Importantly however, we assume that workers do not change the number of hours that they work in response to the wage increase; we return to this point later.

Figure 4.6 shows how gross earnings from employment would change for each decile of the income distribution following implementation of a living wage. The increase in household gross earnings is much higher on average for households in deciles 3-6 than in deciles 1 and 2, reflecting the fact that there are fewer working households in the bottom two deciles, and those that are in work tend to work fewer hours. (if we look at working households only, then the average increase in gross earnings is broadly similar across the bottom four deciles: the fact that workers in households in deciles 1 and 2 work fewer hours is mitigated by the fact that households in deciles 1 and 2 tend to have slightly lower hourly wages, and thus benefit more from an increase in their hourly wage).

Figure 4.6 also shows that some of the increase in gross earnings in decile 3 and above is mitigated by a combination of higher income tax and National Insurance payments, and withdrawal of Working Tax Credits (WTC).

Figure 4.6: Average change in gross earnings, taxes paid, and tax credits received following implementation of living wage



Source: University of Stirling Microeconomic Model

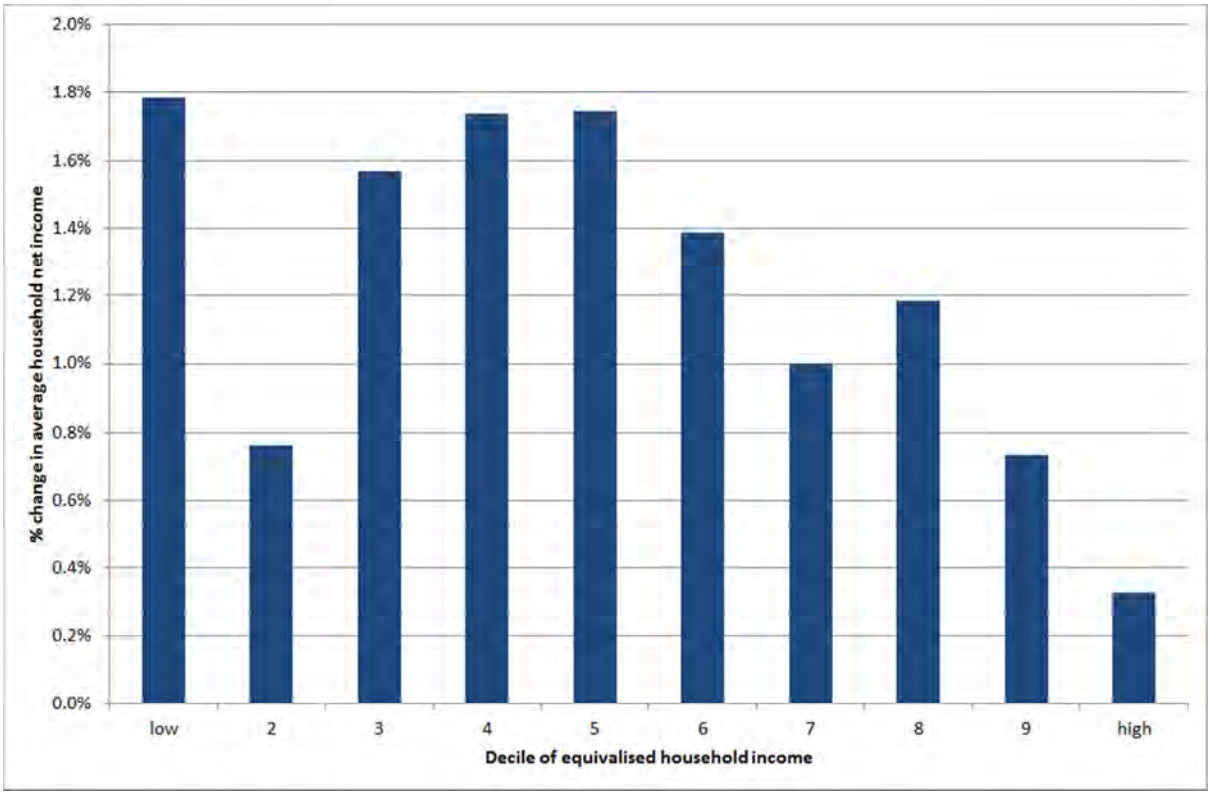
What is most important for the assessment of poverty and inequality, however, is how net equivalised household incomes change relative to each other, on a percentage basis. This is shown in Figure 4.7.

On average, the living wage does raise incomes in the lower half of the distribution by slightly more than those in the upper part of the distribution. But because the effects are relatively evenly spread,

the effect on overall inequality is minimal – the GINI coefficient falls by less than a quarter of one percent.

Note that incomes in the second decile increase by less than those in the middle (the average incomes of households in the second decile increase by relatively little for a combination of factors, including that there are relatively few working households in this decile, fewer workers in this decile earn below the living wage compared to decile 1, and low-wage workers in this decile work fewer hours than those in decile 3). The implication of this is that relative poverty actually increases with the Living Wage (relative poverty is defined as 60% of the median income). Specifically, the number of people living in relative poverty increases by about 31,000, from 15.8% to 16.3% of the total population. The number of people living in absolute poverty (where the absolute poverty line is held fixed relative to the pre-living wage scenario) does however fall by around 15,000.

Figure 4.7: Effects of a living wage on the net income distribution



Source: University of Stirling Microeconomic Model

Momentum behind the idea of a living wage continues to grow, given the backlash over 'in-work poverty' and declining living standards more generally. This sub-section has shown that, because of the way that low-paid work is distributed across the population, the effect of a living wage on inequality and poverty is likely to be minimal; in fact, it may increase relative poverty.

The analysis raises interesting questions around whether the objective of policy makers is to support the incomes of poorer households, or to address low-pay more generally. It has also indicated the importance of hours worked, as well as hourly pay, in determining relative incomes.

This is not to say that a living wage is undesirable. Paying the living wage may, if it is combined with improvements to employment conditions and practices, help to improve employee well-being and

engagement in the labour market. The Expert Working Group in Welfare argued that: 'employers adopting the Living Wage early could benefit from productivity gains through improved staff morale, increased loyalty and motivation, reduced levels of turnover and better returns on training investment'.

The analysis has made no attempt to consider how hours worked may change following implementation of a living wage. Some individuals may be incentivised to work longer hours if offered a higher wage, and if this effect operates more heavily among workers in the lower deciles, a living wage may have a more positive impact on inequality and poverty. On the other hand, some individuals may substitute work for more leisure. Furthermore, some employers may seek to reduce employment if they are obligated to pay a living wage (unless worker productivity does increase in response to higher wages).

This section has dealt with existing and prospective policies that are intended to redistribute income from the rich to the poor. These policies are largely in the hands of the UK Government at present, but some may come to the Scottish Government as a result of the on-going re-evaluation of the powers of the Scottish Parliament. It has shown that the UK makes a slightly below average effort to re-distribute compared to other OECD countries, given the relatively high level of market inequality from which it starts. The redistributive effect of direct taxes and welfare benefits has changed little in the last two decades. Finally, policies such as the minimum wage and the living wage have to be thought through very carefully before implementation: because of the distribution of wages and hours within households, it may be the case that a living wage could lead to an increase, rather than a decrease in relative poverty. We now consider the effects on inequality in Scotland of policies whose primary objective is **not** to influence the distribution of income between rich and poor.

5. The unintended consequences of policy

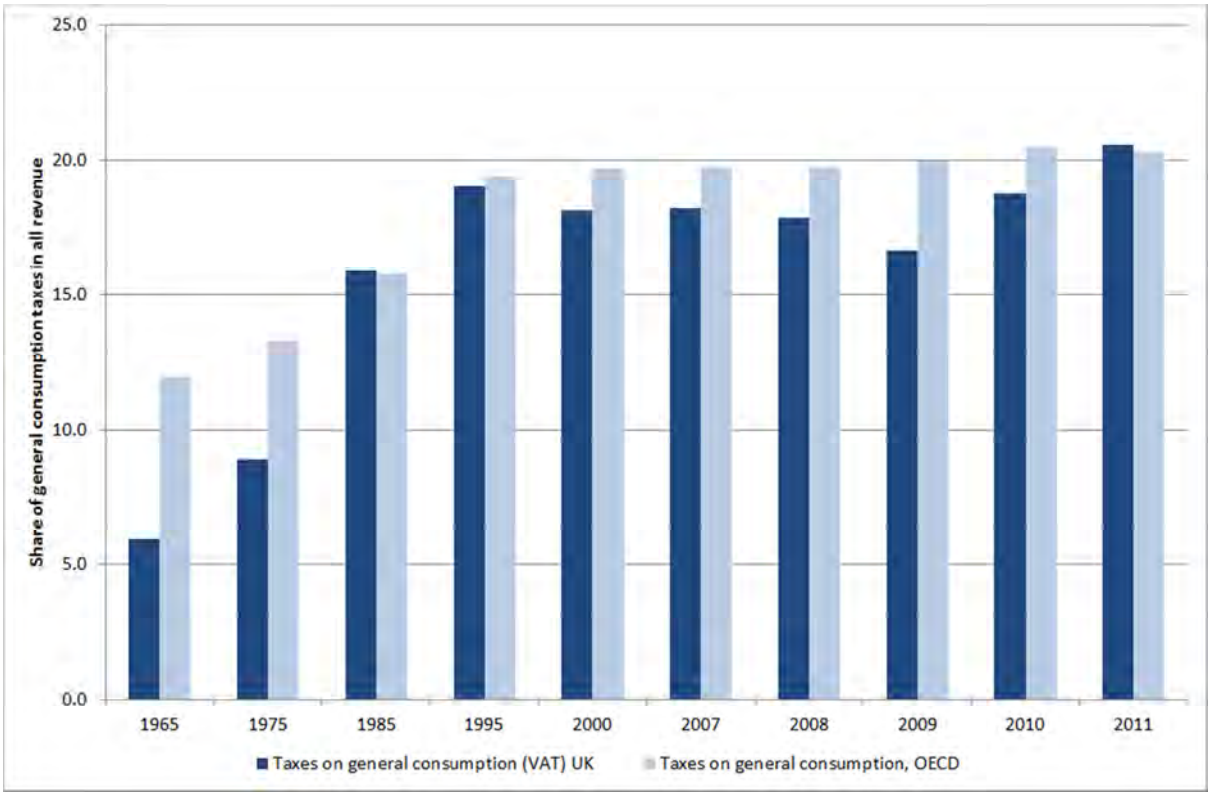
The previous section considered how government influences the income distribution directly through the tax and benefit system and through labour market regulation. But policy in other spheres can influence inequality inadvertently. This is particularly the case where policy contributes to changing the prices of goods or services that are consumed at different rates by households in different parts of the income distribution, as price changes influence households' ability to access goods and services.

In this section we consider how policy in three areas might be influencing inequality of disposable income in unintended ways. First we look at the evolving emphasis on indirect taxation rather than income taxation as a source of government revenues; second we consider the ways in which environmental targets and policies might influence household budgets via energy bills; and third we consider whether planning policy raises inequality through its effects on the price and cost of housing.

5.1. Switch from direct to indirect taxes

The UK is increasingly reliant on indirect consumption taxes as a source of tax revenue. VAT rose as a share of total tax revenues from 6% in 1965 to 19% in 1995, and reached 21% in 2009 (Figure 5.1). The major change occurred in 1979 when VAT was increased from 8% to 15%; it was increased to 17.5% in 1991, and to 20% in 2011. The trend towards increasing reliance on general consumption taxes is common to most OECD countries, and is in part a response to the difficulties in taxing mobile factors such as labour and capital (Sweden and Finland are even more reliant on consumption taxes as a revenue source, whilst in Norway they account for 18% of revenues).

Figure 5.1: General consumption taxes as a share of total revenues, UK and OECD average



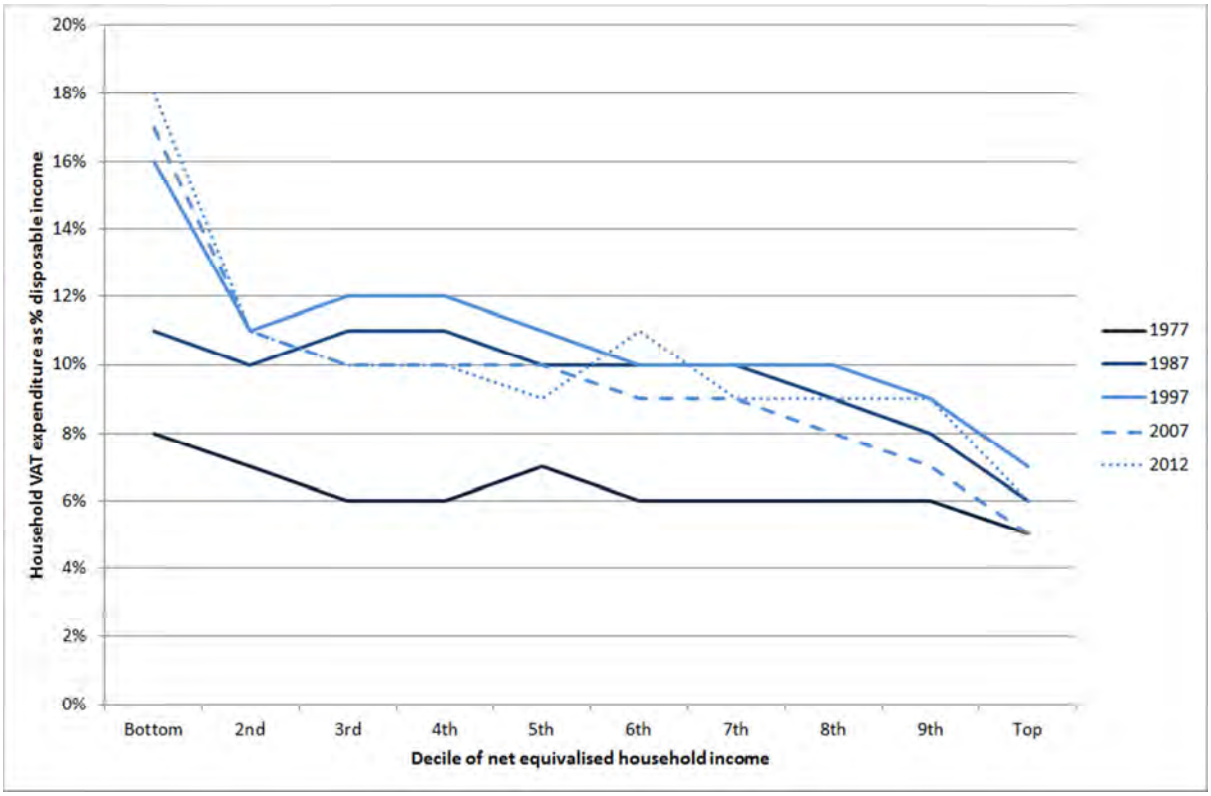
Source: OECD

Tax rates on excisable goods have also increased over time. Between 1978 and 2012 the percentage of the retail price accounted for by tax in the UK increased from 72% to 80% for cigarettes; from 30 to 32% for beer; from 45 to 62% for wine; from 47 to 58% for petrol; and from 49 to 56% for diesel (only for spirits was there a reduction, from 78 to 66%). Other indirect taxes include vehicle excise duty, the TV licence, and betting taxes.

Increasing rates of consumption tax can increase disposable income inequality because these taxes form a larger element of spending by poor households than of richer households. To an extent, these effects can be mitigated by the zero-rating of some items for VAT, such as food, books and children's clothing. Nonetheless, the increases in VAT are clearly having an overall regressive impact; Figure 5.2 shows that the proportion of poorer households' disposable incomes that are accounted for by VAT spending has increased by significantly more over time than it has for richer households. VAT now accounts for 18% of the disposable incomes of households in the bottom decile of net income, compared to less than 8% for households in the top decile of income.

Indeed, considering all indirect taxes, Anyaegbu (2011) shows that indirect taxes have been regressive over the entire period since 1980, and they have become somewhat more regressive over time. In 1980, indirect taxes increased the GINI coefficient of net equivalised household incomes by just under 3 percentage points. Over time this effect has increased to 4 percentage points. *Thus the effects of direct taxes in reducing inequality identified in the previous section are exactly offset by the effects of indirect taxes in increasing inequality of disposable incomes*.

Figure 5.2: Proportion of households' disposable income accounted for by VAT on purchases, by income decile, UK



Source: ONS (2013)

5.2. Energy policy

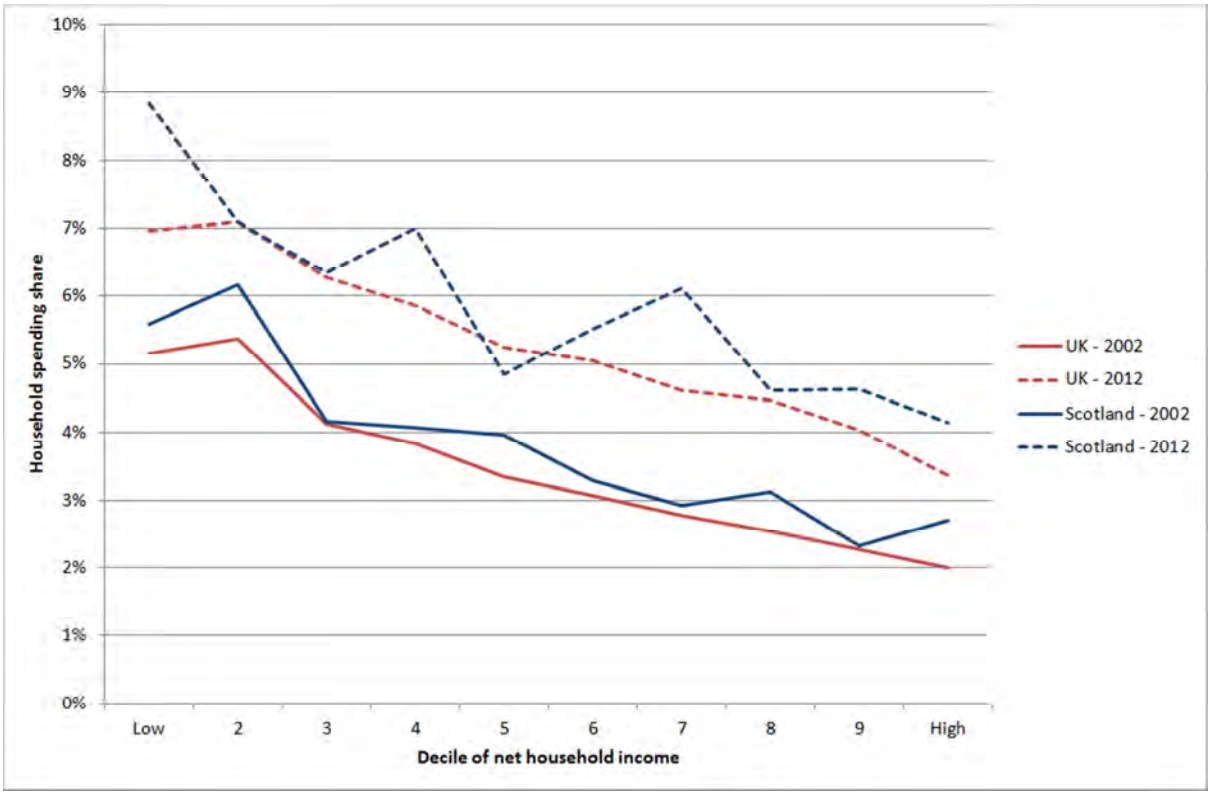
In this section we consider the arguments around the likely impact of environmental policy in indirectly increase the inequality of household disposable incomes[6]. Household energy bills have risen substantially in recent years. A view often expressed in the media is that these price rises have been driven largely by various environmental policies that are paid for through energy bills. Because energy bills account for a larger component of the incomes of poorer households, environmental policy may be increasing the inequality of household disposable income. In response to concerns about bills, in the 2013 Autumn Statement the Chancellor announced changes to the Warm Home Discount and Energy Companies Obligation which, together with a one-off reduction in energy distribution costs, should save households about £50 a year on average.

It is undoubtedly the case that energy bills have been increasing substantially faster than inflation over the past decade. Household energy prices rose by 74% in real terms between 2002 and 2012. These price increases have resulted in household spending on energy increasing by 55% (there has been a 17% fall in household energy use in this period). However, electricity and gas prices are lower in GB than the EU average, and recent price rises have also been lower in GB than the average for the EU (Advani et al. 2013).

Although richer households spend more in cash terms on energy than poorer households, energy forms a greater proportion of poorer households spending. Between 2002 and 2012, spending on energy as a proportion of total household spending has risen at all points of the income distribution (Figure 5.3). Household spending on energy as a proportion of total spending is broadly similar in Scotland to the UK as a whole (the sample size of the Living Costs Survey, on which Figure 5.3 is based, is relatively small in Scotland, so the marginal differences between Scotland and the UK that are apparent from Figure 5.3 are not statistically significant). It is important to note however that household spending on energy forms a lower part of households total spending now than it did in the 1980s.

6 Rising household energy bills may also have been driven to an extent by aspects of the structure of energy markets, including the structure of the wholesale and retail markets, and issues around network supply and regulation. For a review of these issues, see Jenkins (2014).

Figure 5.3: Share of household spending on fuel, heat and power by decile of net household income, 2002 and 2012

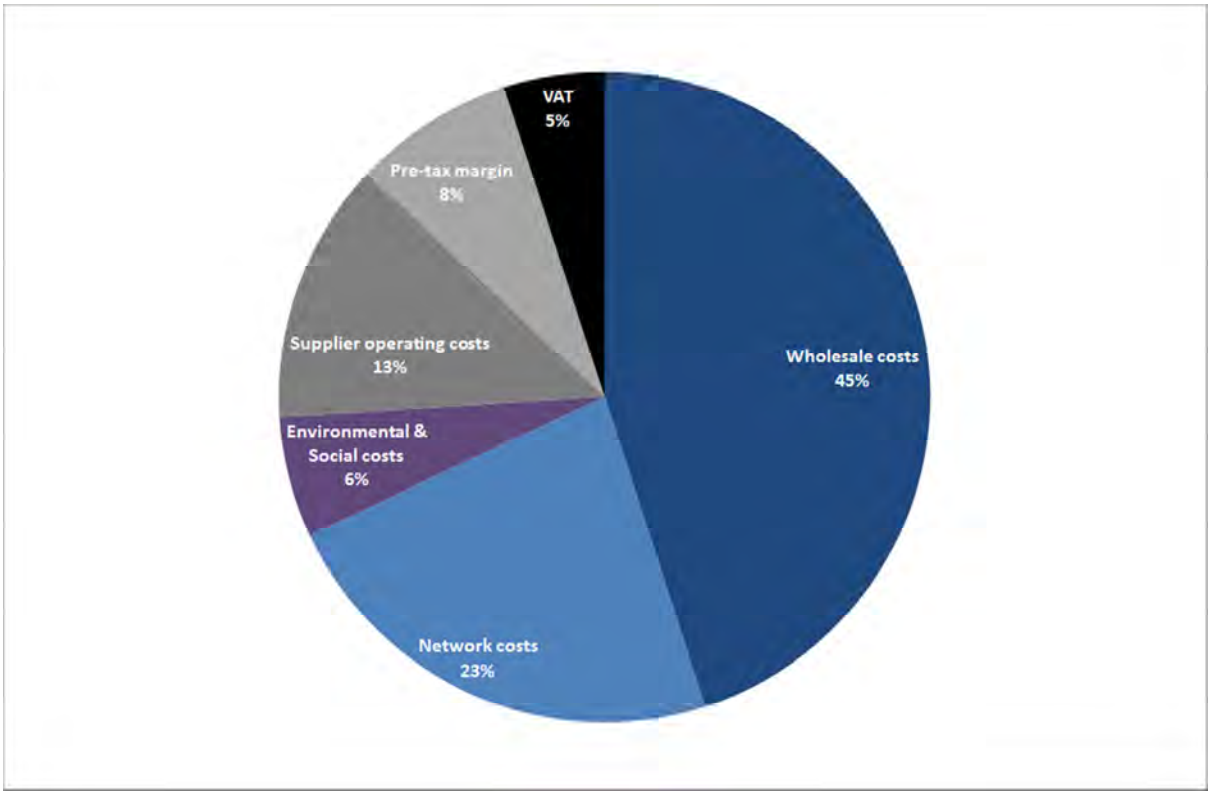


Source: Living Costs Survey, various years

What has driven these price increases? There are a number of layers of commercial transactions in the energy sector, and the determination of energy bills is thus quite complex (Jenkins, 2013). OFGEM estimates the components of an average dual fuel bill as shows in Figure 5.4; environmental and social costs make up just 6% of the average bill. The bill component associated with environmental charges (energy taxes) in Britain is lower than the EU15 average and the UK's VAT rate on energy is the lowest among the EU15.

The main driver of the recent energy bill increases has been wholesale energy prices. These are largely determined by international markets. Carbon prices, determined through the EU Emissions Trading Scheme (ETS), have also added to generation costs. The costs of regulated monopoly network services have increased in the last decade, and are predicted to continue to increase in the future; whilst supplier margins have also increased somewhat. Between 2007 and 2012, the component of bills that is due to 'environmental and social costs' increased slightly, before falling somewhat in 2014 following announcements in the 2013 Autumn Statement.

Figure 5.4: Components of an average dual fuel bill, 2014



Source: OFGEM

There are a range of environmental policies designed to both encourage energy efficiency and a switch to low-carbon generation and policies. The former include obligations on energy suppliers (the current Energy Companies Obligation and previous obligations including the Carbon Emissions Reduction Target (CERT) and Community Energy Saving Programme), schemes to provide financing to pay for energy efficiency and heating measures (the Green Deal). Wider energy use and climate change include the EU Emissions Trading Scheme and the Renewables Obligation.

Many of these policies raise prices, and are thus regressive to the extent that energy bills form a larger part of household energy expenditure for poorer than richer households, and thus a levy raised proportionally to energy consumption reduces the disposable incomes of poorer households to a relatively greater extent. The policies raise prices both directly through the environmental charges in the bill, but also indirectly, and significantly, through the impact on generation and network investment costs (Jenkins, 2014). Furthermore, feed-in tariffs which subsidise the take-up of renewable energy tend to be taken up by richer households. Grösche and Schröder (2014) estimate that the German feed-in tariff increases the Gini coefficient of disposable income by over half a percent, largely because it is effectively a subsidy for richer households who are able to install solar panels or other energy saving measures.

On the other hand however, some policies which encourage energy efficiency are targeted on poorer households specifically (some of these are delivered in Scotland as the Affordable Warmth Scheme and the Energy Assistance Scheme). As a result, there is now little difference in energy efficiency between the homes of poorer and richer households. Support for energy bills is also delivered through policies including the winter fuel payment (WFP), a universal benefit for those aged over 60; the cold weather payment (CWP), paid to poor households in periods of very cold

weather; and the warm home discount (WHD), paid as an electricity bill rebate to poorer households that apply to their energy companies.

However, as discussed by Advani et al. (2013), the potential role of WFP in supporting payment of fuel bills has reduced dramatically over the last few years as its generosity has been reduced and as fuel bills have risen. At its peak in 2005–06, the WFP was worth about 46% of fuel bills for 60- to 79-year-olds and 76% for the 80+ group. These figures had fallen to about 13% and 22% respectively by 2013. The WFP has become less progressive over time (partly because pensioner households have become relatively better-off). And relatively few households that are eligible for the WHD appear to receive it (Advani et al. 2013).

Energy policy: summary

Energy prices have been rising rapidly in recent years, and this, combined with declining effectiveness of policies to help poorer households with energy costs, is almost certainly likely to be increasing the inequality of household disposable incomes. However, it would be wrong to place the blame for these price increases solely at the feet of environmental policy and levies. Indeed, the environmental component of energy bills is lower in GB than the EU average, and has increased more slowly in GB in recent years; the wholesale price of electricity and gas have been the main drivers of recent price increases.

Given that the government is committed to carbon reduction, this has to be paid for somehow. The IFS argues that current energy taxation in the UK is inefficient: the lower rate of VAT acts as a subsidy which encourages energy use, and although a number of environmental levies are in place, these are imposed to electricity and gas consumption at different rates, and to households and businesses at different rates. Under current policy therefore, the implicit carbon tax differs across electricity and gas, and is different for households and businesses. A proposed solution (Advani et al. 2013) is to remove the VAT subsidy on energy and to introduce an additional tax on gas to equate the effective carbon prices of gas and electricity. In itself, this would clearly be highly regressive, raising the cost of living by 4% for the poorest decile and 1% for the richest decile. But these effects could be mitigated through rises in benefit rates and tax thresholds. Whether paying for environmental policy through earnings taxation rather than through bills is politically palatable remains to be seen.

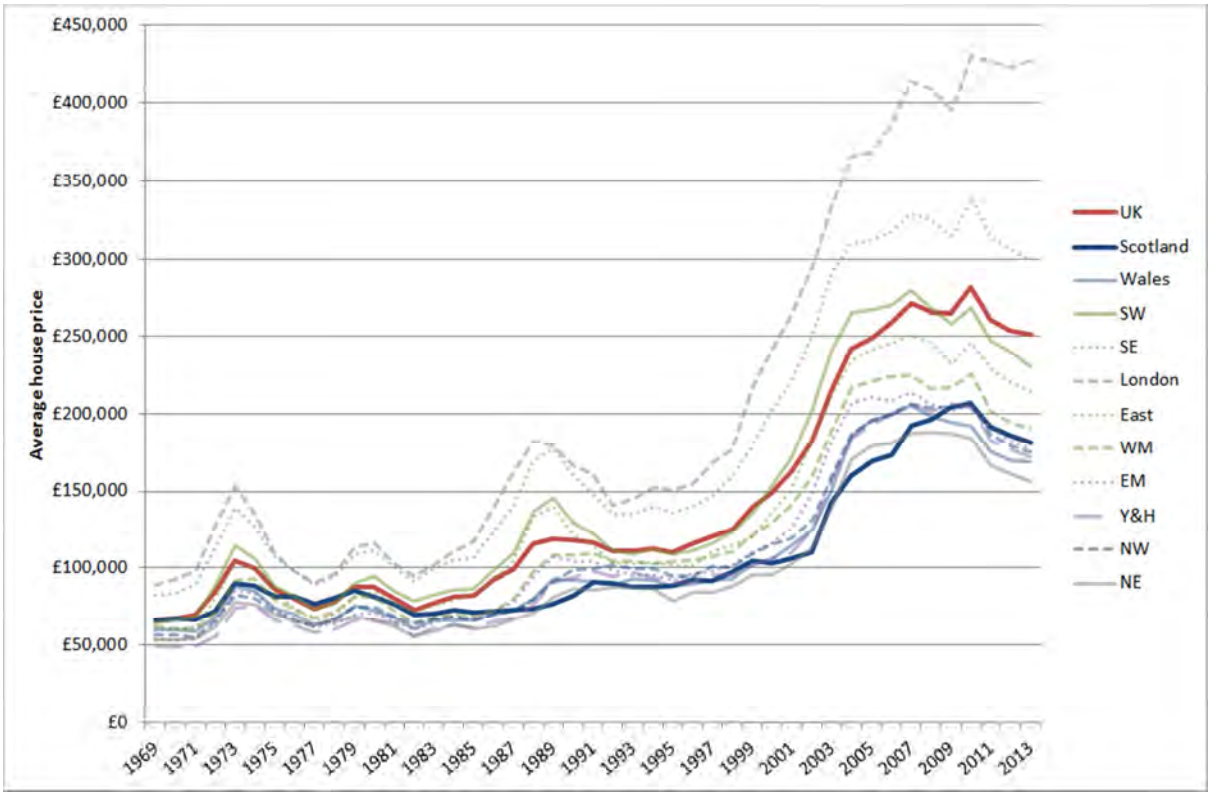
5.3. Planning policy

It is sometimes argued that the UK's restrictive planning system acts as a significant constraint on the development of new housing, causing house prices to rise significantly faster than inflation. If housing costs form a larger proportion of poorer households incomes than those of richer households, this may increase 'after housing cost' (AHC) income inequality. We now consider the extent of recent house price rises; consider the factors driving house prices; examine how housing costs have changed for different tenure types; and explore the implications for net household incomes across the distribution. The key finding is that, whilst inequality of AHC incomes across the whole population does not appear to have changed significantly, this observation hides significant change in the fortunes of different generations in the housing market.

The house price boom and its drivers

The UK and Scotland witnessed substantial house price booms during the late 1990s and first half of the 2000s. Figure 5.5 shows real house prices in the UK as a whole, Scotland, Wales, and the English regions. House prices have been increasing in real terms since the mid-1980s in the UK, and since the late 1980s in Scotland. A rapid expansion in real house prices began in the late 1990s in the UK and in the early 2000s in Scotland. From 2000 to 2009, real house prices in Scotland doubled in real terms. The more rapid growth in house prices in the UK as a whole was clearly driven by house price growth in London and the south east of England. The trend of house price growth in Scotland is similar to that in the midland and northern regions of England, although there is some evidence that house prices in Scotland increased slightly less rapidly than these regions in the early 2000s, and have not fallen by as much during the recession.

Figure 5.5: Average house prices (2013 prices)



Source: ONS, Housing Price Index. House prices are deflated using RPI

There are both demand-side and supply-side explanations for the significant house price increase in the early 2000s. Demand-side factors have been influenced by demographic change, incomes, credit availability and price expectations.

In terms of demographics, there was an increase of both population and number of households. Between 1994/5 and 2011/12, the number of Scottish households grew from 2.6m to 2.9m, a growth of almost 10%. But the increase in real incomes is perhaps more significant. Evidence suggests that a 10% increase in real income leads to a 20% increase in demand for space – this pushes up the cost of housing by raising the price of land.

The availability of credit, as a result of financial deregulation of mortgage markets, increased substantially in the late 1990s, and this was combined with falling interest rates. The Bank of

England base rate reached 14% in 1990, fell during the recession of the early 1990s but tended to remain between 5% and 7%, and then fell again in the early 2000s to below 5%. Total gross mortgage lending in the UK more than tripled between 1999-2007, from £115bn to £364bn (Dolphin and Griffith, 2011). The household sector shifted from being a net lender in the 1990s to a net borrower in the 2000s.

Of course, a major part of the reason that households were willing to continue taking on more debt (and why banks were willing to lend), was a belief that prices would continue rising. With interest rates falling, credit markets loosening, feedback loops were created linking house price rises to higher demand, rather than the reverse. Miles and Baker (2006) estimated that, of the 113% increase in real house prices over the previous 10-year period, 62 percentage points were due to the expectation of higher prices, with only 9 percentage points due to demographic change, 14 percentage points due to lower real interest rates, and 28 percentage points due to higher real incomes.

But the UK's relatively unresponsive supply of housing is also a critical part of the story. Andrews et al. (2011) found that the responsiveness of housing supply to increasing demand is half the level in the UK as it is in Japan, and less than a quarter as responsive as in the US. The Barker Review (2013) found that UK house building was only half as responsive to demand as the French, and only a quarter as responsive as the German. Barker notes that from the beginning of the 1990s 'supply has become almost totally unresponsive, so as prices have risen, the supply of houses has not increased at all'. Similarly, Meen (1996) finds that the price elasticity of UK housing supply was low and falling over time, so that house prices were almost entirely demand-determined.

In supply-constrained markets, adjustment to levels of demand inevitably come through prices. Land is an input to housing, and what developers will pay for it reflects the different between construction costs and the expected price of the houses that can be built on it. In the UK, land as a percentage of house prices has increased from around 2% in the 1930s to 70% in 2009 (Green, 2013). O'Sullivan and Gibb (2012) found that residential land prices in Scotland rose from £200,000 per hectare in 1998 to £1,830,000 per hectare in 2006 – an increase of approximately 900%. If land is expensive, developers will try to pack as many units as possible into the available space, which helps explain why the UK has the smallest new homes being built in Europe.

The UK's restrictive planning system receives much of the blame for the unresponsiveness of housing supply. The argument is that the planning system restricts supply where demand is greatest, concentrating housebuilding where prices are relatively affordable and job prospects relatively worst (Cheshire, 2013). Of course the planning system itself is responding in part to the preferences of the local population – Green (2013) points out that, within England, higher levels of planning rigidity are associated with areas with higher rates of home ownership, lower levels of renting, higher median wages and lower deprivation scores. The argument that planning controls increase house prices has also been made in the US (Huang and Twang, 2009). It has been asserted that increased planning regulation is limiting migration from poorer to richer States. This weakens the ability of the market to cause income levels across states to converge.

Scotland faces similar challenges in terms of a shortage of housing supply as the rest of the UK. The Scottish Government estimated in 2007 that Scotland needed to be building 25,000 homes per year over the period 2010-35 to meet demand. Even before the recession, house building in Scotland

peaked at 21,000 in 2006, but it has since fallen by over half. Similar challenges exist in relation to social housing – Audit Scotland estimates Scotland should be building around 10,000 affordable homes per year, with current levels of building around half this (partly as a result of significant falls in the capital spending budget, which declined by 29% between 2008/9 and 2011/12).

The Scottish Government's Land Reform Review Group (LRRG) argue that Scotland's housing supply challenge arises from a combination of three factors: accessing land (how land is made or becomes available for housing); the price of land for housing development; and the operation of the planning system. According to the LRRG, the planning system and the public sector needs to play a more proactive role in acquiring and developing sites for housing. It also stresses the issues arising from the fact that housing supply is dominated by a small number of major house-builders, whose business model is predicated on land-banking and slow release of sites onto the market.

The cost of housing and cross-sectional inequality

It is not immediately apparent how the rise in real house prices will affect the inequality of after housing cost (AHC)[7] incomes, partly because of the way in which house prices translate into housing costs for households in different tenure types:

- For those in private rented accommodation, rents historically tend not to be as volatile as prices, and indeed the recent housing boom was characterised by a significant rise in the price-rent ratio (Campbell et al. 2009).
- Over the period, there has been a gradual reduction in the number of Scottish households living in Local Authority housing accommodation, and a rise in the number of households living in more expensive Housing Association accommodation[8] and private sector accommodation (Figure 5.6). Until recently however, Housing Benefit rates have been indexed to local rents, to an extent offsetting the effect of rent increases for the poorest households. (Real terms spending on Housing Benefit in Scotland increased from £1.1bn in 1991 to £1.9bn in 2012.)
- For mortgage holders, the impacts of price rises have been mitigated in part because of the fall in interest rates, and in part because homeowners have responded to price increases by making a larger deposit on their home. The average amount borrowed has remained constant as a percentage of house price, but not income (Figure 5.7). One implication of larger deposits is that people are buying later in life (Figure 5.8), a point we come back to later.

Figure 5.6 shows how the pattern of tenure has changed in Scotland since 1965, and Figure 5.9 shows average weekly housing costs by tenure type for Scotland (thick lines) and GB (thin lines) since

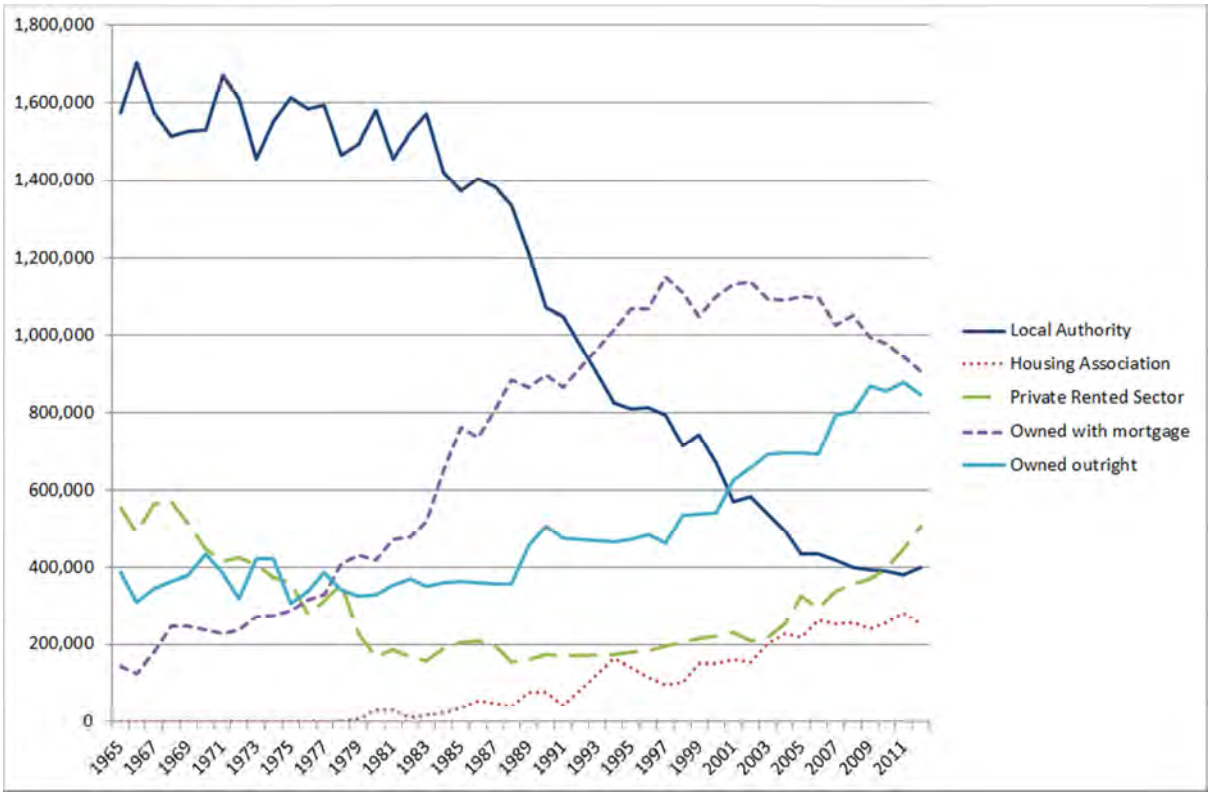
[7] AHC income is defined at household level. The AHC income is calculated by deducting from household net income (i.e. post taxes and benefits) expenditure on rent and mortgage interest payments (capital repayments are excluded on the basis that these represent the accumulation of an asset rather than an expenditure), as well as water and sewerage charges, ground rents and service charges, and structural insurance premiums for owner-occupiers. The measure of AHC income is then equivalised to reflect the composition of the household.
8 Scottish Government statistics show that the average weekly rent in LA accommodation was £61, against £70 per week in Housing Association accommodation.

1994. The advent of Right to Buy and financial deregulation in the 1980s resulted in a substantial growth in the number of owner occupied households and a corresponding decline in the number of households in Local Authority accommodation. The 2000s were marked by a rapid increase in both the number of households in private rented accommodation and the number of households who own their houses outright, but a fall in the number of households who own their house with a mortgage.

For each tenure type, housing costs are lower in Scotland than in GB. For those owning with a mortgage, costs peaked in 2007-08 and fell thereafter as a result of falling interest rates. Real terms housing costs for mortgagers are now at the same level as in the late 1990s. In contrast there has been a steady rise in real housing costs for those in LA or RSL accommodation. The costs of private rented accommodation have grown dramatically, and they have grown somewhat faster in Scotland than in GB as a whole.

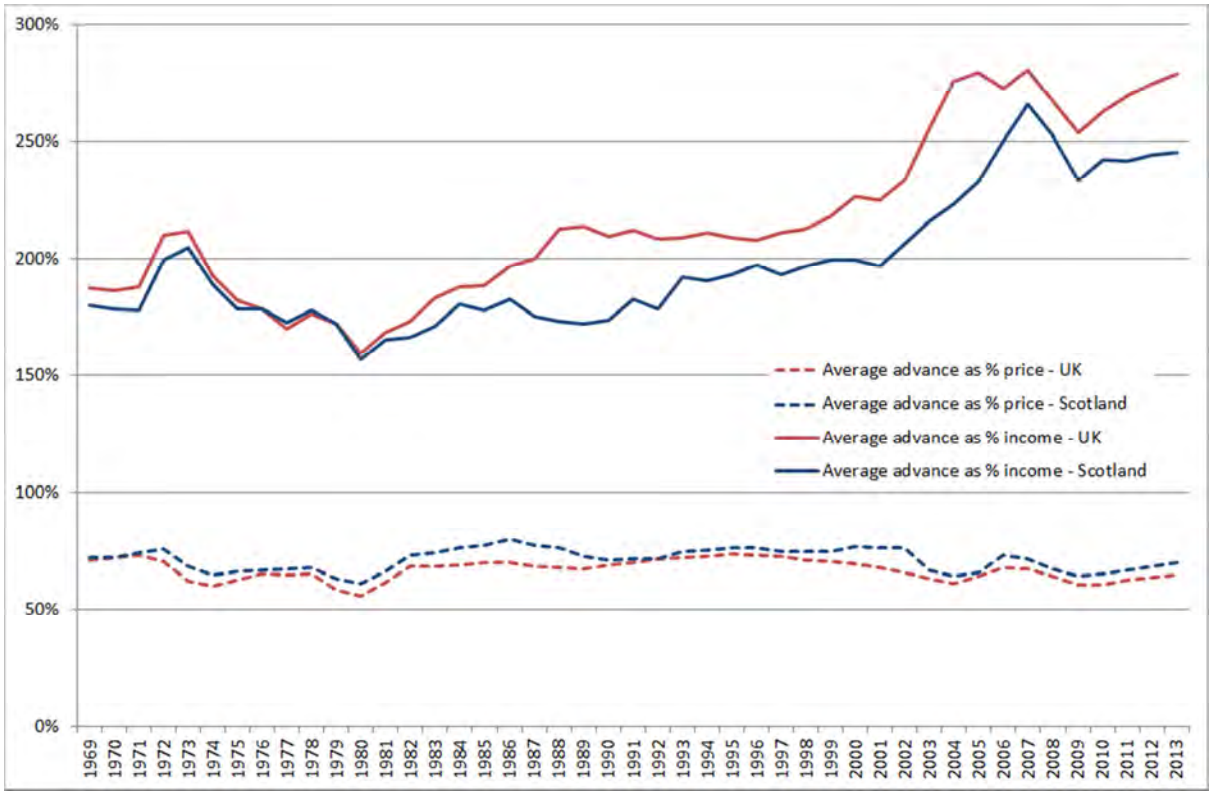
Overall however, Figure 5.10 shows that there is no evidence that inequality of AHC incomes in Scotland has increased over the period 1994/5 – 2011/12 when inequality is measured either by the GINI coefficient or 90/10 ratio. Inequality of AHC income is somewhat higher in GB as a whole than it is in Scotland, but this is a London-effect. When London is removed from the picture (rGB) then inequality in Scotland and the rest of Great Britain outside of Scotland is virtually identical.

Figure 5.6: Households by tenure, Scotland, 1965-2012



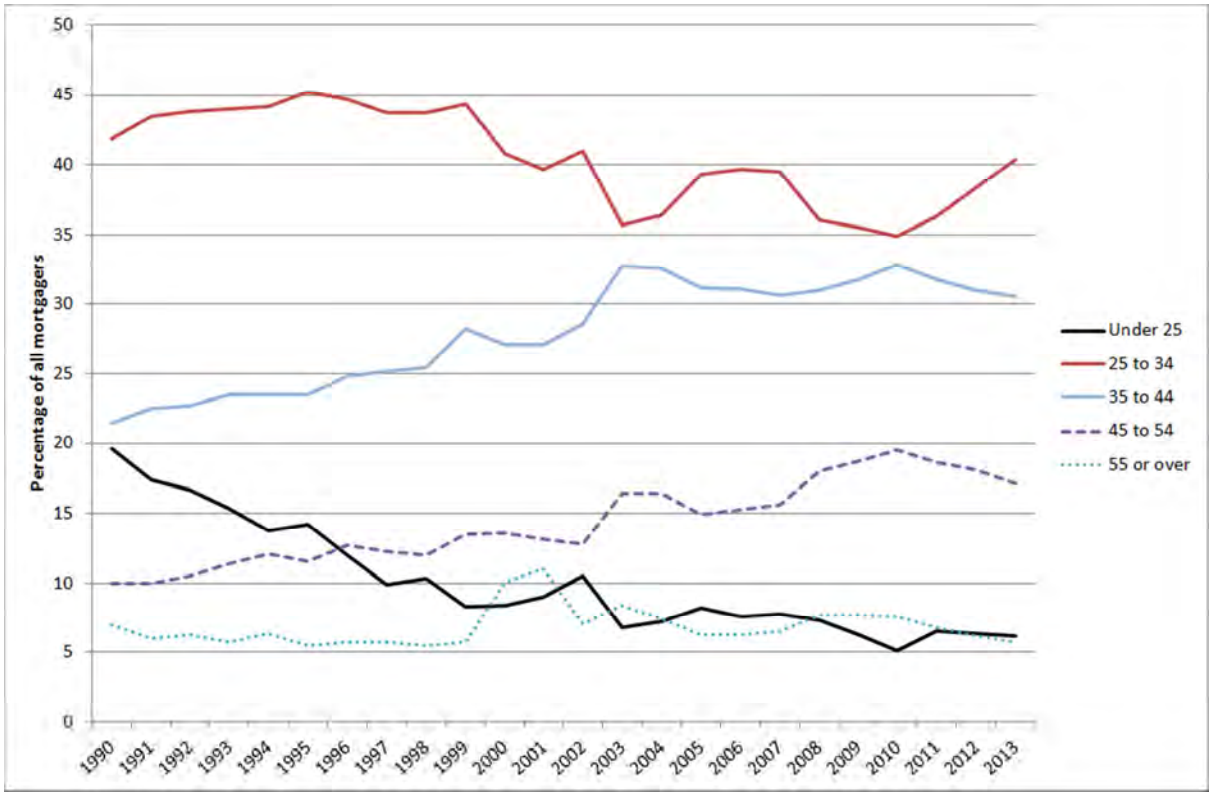
Source: HBAI

Figure 5.7: Mortgage advance as % house price and as % income, 1969-2013



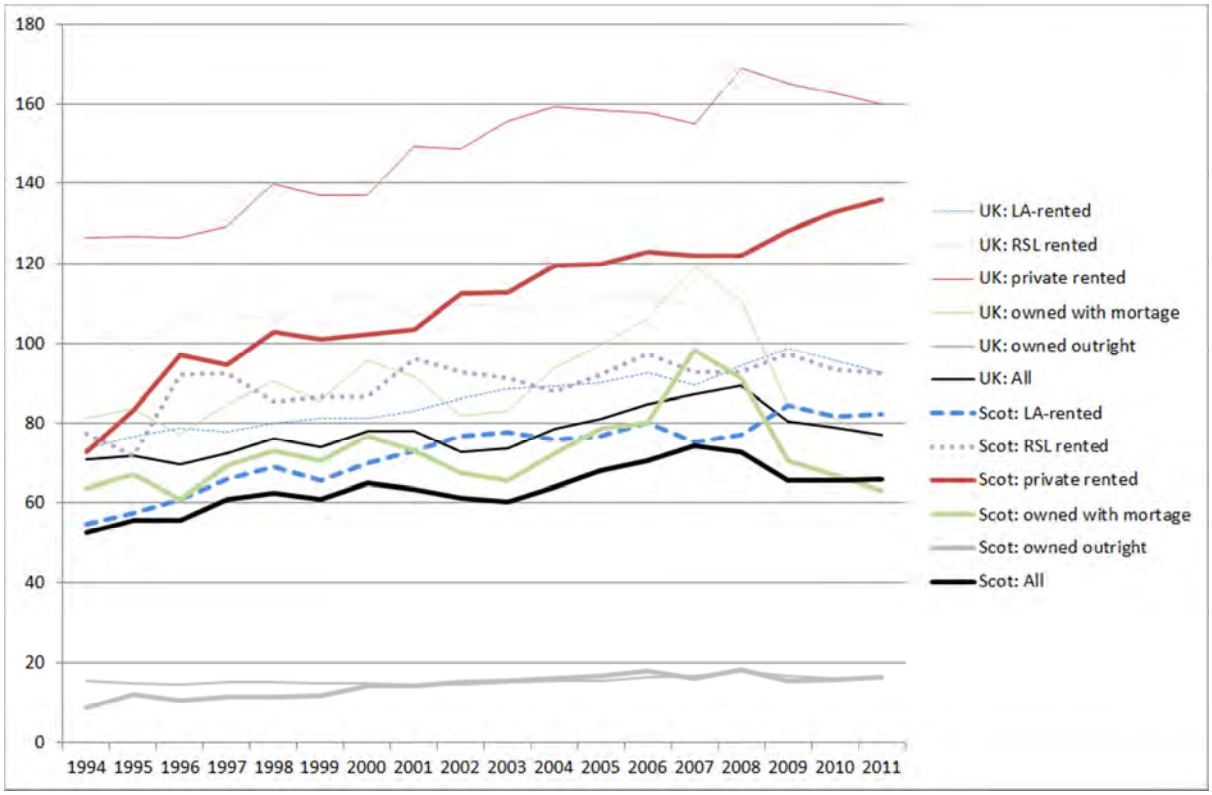
Source: ONS, House Price Index

Figure 5.8: Distribution of borrowers ages, UK



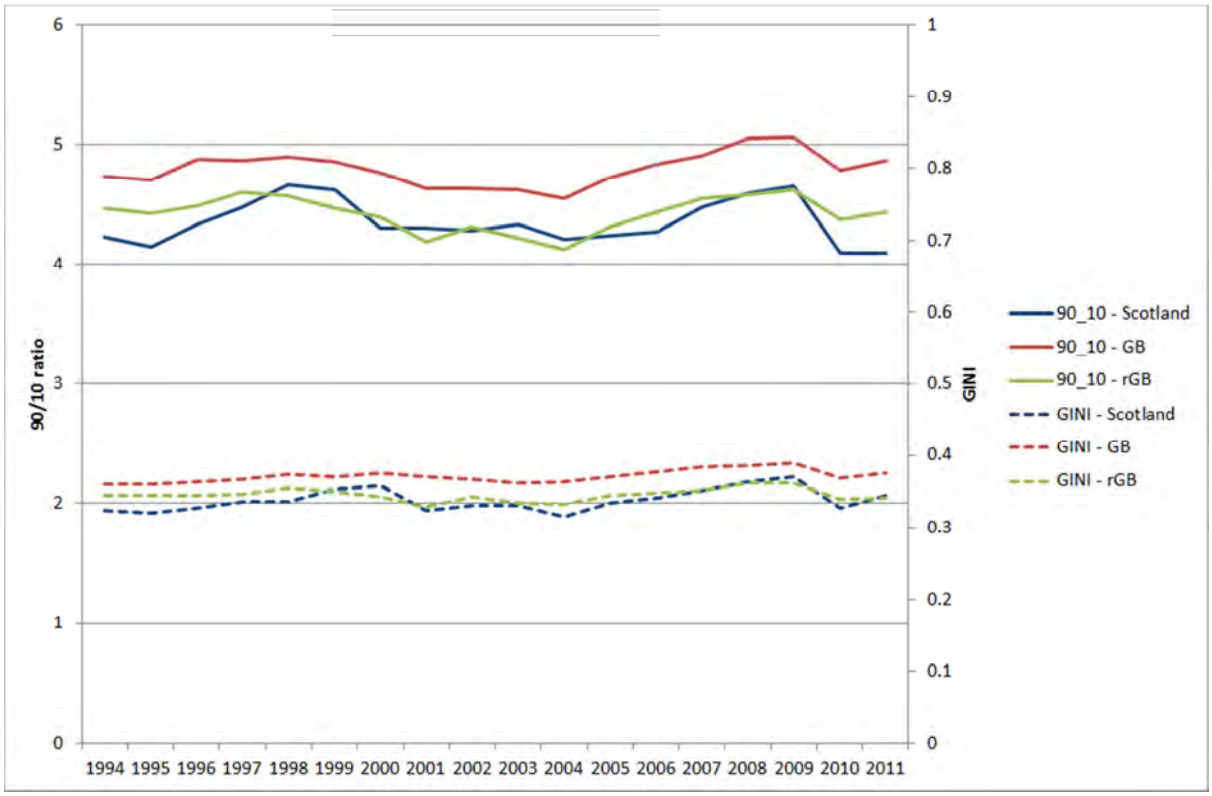
Source: ONS, Housing Price Index.

Figure 5.9: House costs by tenure type, Scotland and UK



Source: HBAI. Housing costs are gross of Housing Benefit. Mortgage costs include interest but exclude capital repayments. Costs are deflated to 2013 prices using RPI.

Figure 5.10: GINI and 90/10 ratio measures of After Housing Cost inequality



Source: HBAI. Household incomes are equivalised.

Housing inequality: the inter-generational dimension

The preceding sub-section did not provide strong evidence that there has been an increase in the inequality of AHC incomes in Scotland since 1994, at least when considered in a broad sense. A major concern however is the effect that sustained real terms house price rises may have on inter-generational equity. A housing asset which increases in value whilst it is held and generates a profit once it is sold effectively imposes an implicit tax on succeeding generations (Evans, 2012). The result may be that succeeding generations find it more difficult to get on the housing ladder, and become increasingly reliant on inheritances to enable them to afford to buy a home. This in turn would raise the spectre of an increasing persistence of inequality between generations, as well as increasing intra-generational inequality among succeeding generations (those who inherit can afford to buy; those who don't inherit cannot).

There is evidence that such a scenario is emerging in Scotland. Between 1994/5 and 2011/12 the number of owner-occupier households increased by 344,000 (Table 5.1). But over half of this increase was accounted for by households where the head of the household was aged 65 or over, and the remainder was accounted for by households aged over 45. Amongst those aged under 45 there was a net decline in home ownership. Despite this however, there was an increase in the number of younger households who owned their home outright (as opposed to with a mortgage) – this provides suggestive evidence of an increase in inequality of property wealth within the younger generation, and is consistent with a similar finding for the UK as a whole (Hood and Joyce, 2013).

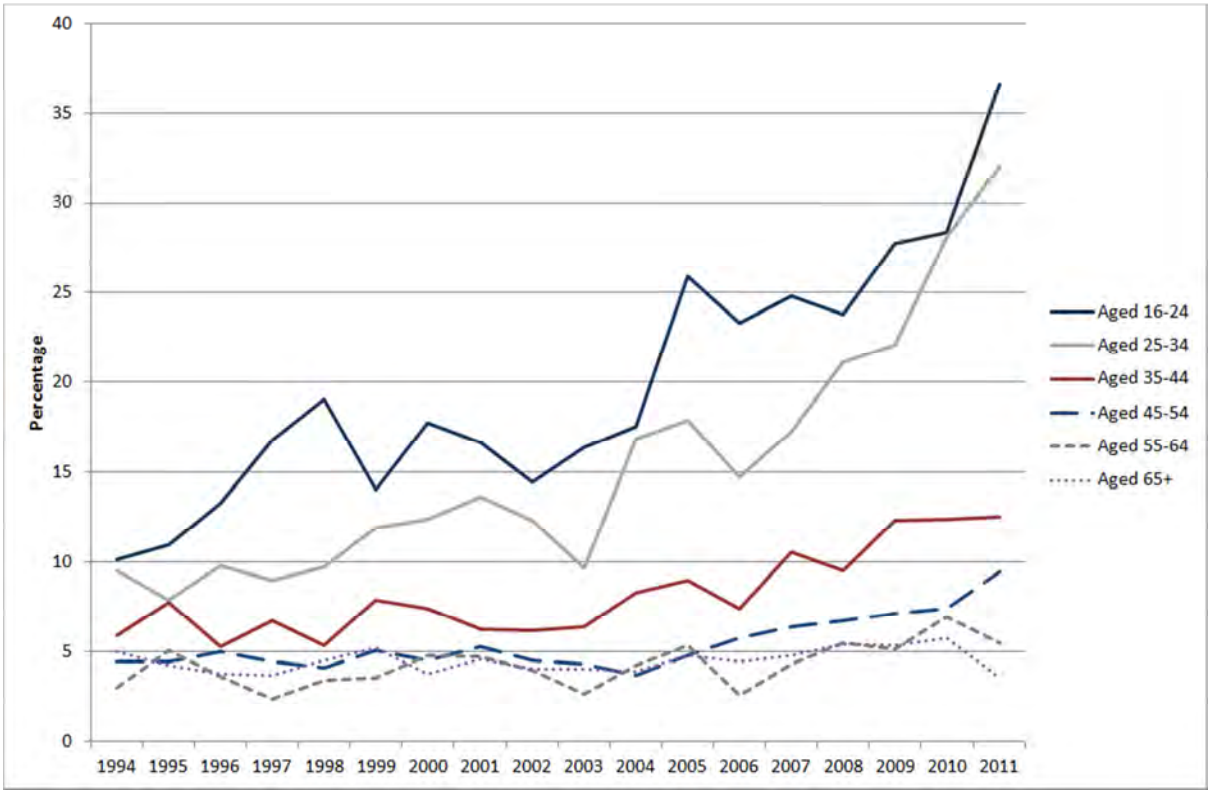
Table 5.1: Changes in the number of owner-occupier households by age of head and ownership status, Scotland 1994-2011

Age of head of household	Change no. households owned with mortgage	Change no. households owned outright	Net change
16-24	-47,245	21,450	-25,795
25-34	-84,268	8,721	-75,547
35-44	489	22,130	22,619
45-54	53,045	58,694	111,739
55-64	16,995	92,713	109,708
65+	-2,181	203,201	201,020
Total	-63,165	406,909	343,744

Source: HBAI

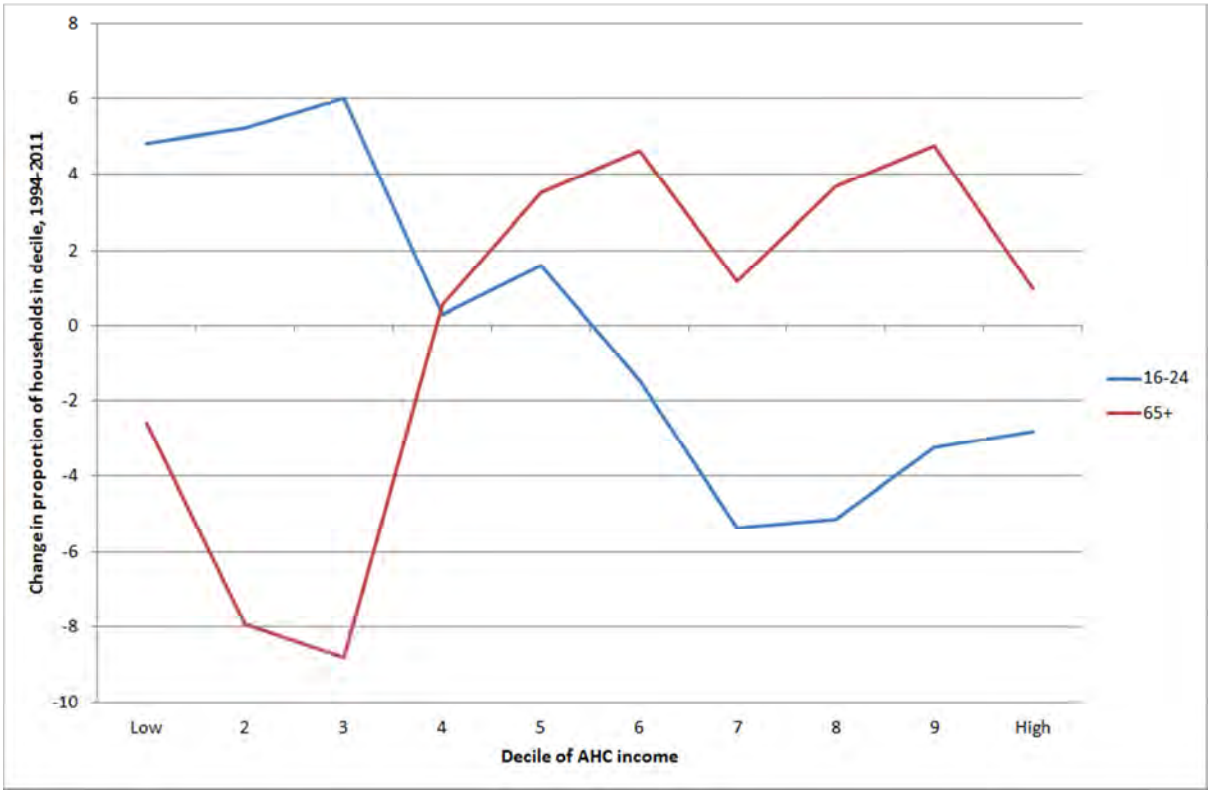
The reduction in the number of young who are able to purchase property inevitably means that more are living in other tenure types, notably the private rented sector. Young households account for a disproportionate share of the increase in private sector rented accommodation in Scotland in recent years (Figure 5.11). Private renting accounted for 10% of young households (where the head is aged 16-24) in 1994, rising to 37% in 2011. As we have already seen, housing costs in the private rented sector have risen much more rapidly than for those in other tenure types.

Figure 5.11: Percentage of households living in private rented sector by age of household head, Scotland, 1994-2011



In the previous sub-section we saw that there has not been a substantial increase in inequality of AHC income in Scotland since 1994. But the fact that younger households make up an increasing share of private rented accommodation is suggestive of an underlying change in the way that households of different ages are spread throughout the distribution of AHC income. This is confirmed in Figure 5.12. This shows that households aged 16-24 are more likely to be found in the bottom third of the AHC income distribution in 2011/12 than they were in 1994, and less likely to be found in the top half of the AHC income distribution (e.g. 12% of households aged 16-24 were in the bottom decile of AHC income in 1994, rising to 17% in 2011). For pensioner households this position is reversed (the distribution of households of other age groups has not changed as significantly over the period).

Figure 5.12: Change in proportion of households of given age in each decile of the net AHC income distribution, Scotland



Given this, it will not come as a surprise to learn that younger households are increasingly likely to be those who spend more than a third of their disposable income on housing, a common measure of housing poverty'). The proportion of Scottish households spending over a third of disposable income on housing increased from 4% - 19% between 1994-2011 among households aged 16-24, from 6% to 11% among households aged 25-34, remained broadly constant for prime-aged households, and declined slightly for households of pensionable age.

What this data do not show is that some younger people are responding to rising housing costs by staying in the familial home until later in life. According to ONS, one quarter of Scotland's 20-34 year olds lived with their parents in 2012, up from a fifth in 1998 (this trend is virtually identical to that for the UK outside London).

Rising house prices mean that younger people are likely to be increasingly reliant on inheritances if they are to purchase a property. Inheritances are extremely unequally distributed. UK-level data from the ONS' Wealth and Assets Survey shows that, of the 1.6m people who received an inheritance in 2008/10, the largest fifth of inheritances accounted for 76% of the total amount inherited. The mean inheritance was £12,500, whilst the average inheritance of the lowest quintile was £1,300 and the average inheritance of the top quintile was £178,000. Importantly from an inequality perspective, individuals living in households which already had the highest levels of wealth showed an increased chance of inheriting over individuals living within middle wealth households. And compared with mortgage owners, individuals owning their main residence outright had an increased chance of inheriting.

House prices and inequality: conclusions

In common with the rest of the UK, Scotland experienced significant house price increases during the 2000s. Planning policy does seem likely to have played a role in driving this increase, although it is difficult to disentangle the effect of planning from a variety of other demand and supply factors.

The effect of rising house prices on AHC income inequality is not straightforward, and depends among other things on: the extent to which the effects of rising prices on homeowners budgets are mitigated by lower interest rates or the trend toward making a larger deposit; the extent to which house price rises translate into private sector rents; the pattern of tenure change over time; and the extent to which support to the lowest income households through Housing Benefit tracks the pattern of market rents.

Indeed, we find that there has been no increase in AHC inequality in Scotland since 1994. This observation hides significant change in the fortunes of different generations in the housing market. House price rises therefore appear to be creating a situation whereby younger people are likely to be increasingly reliant on inheritances to purchase a property (Hood and Joyce, 2013). Those who cannot purchase a property face a choice between living in increasingly expensive private rented accommodation which limits ability to save, or to remain living with parents. The house price bubble therefore seems to be increasing inter-generational inequality and as a result is likely to lead to increases in intra-generational inequality among subsequent generations.

House prices now appear to be rising again, whilst incomes remain stagnant. Significant rises in interest rates seem unlikely while the economy remains weak. Addressing house prices through policy such as macro-prudential rules is problematic given geographical variation in housing market strength.

Planning policy receives a large part of the blame for the UK's house price booms. While planning reform may be possible, part of the blame must also lie with the way in which home ownership is encouraged in the UK tax system by the absence of capital gains tax on real housing gains, and the absence of any tax on imputed income from housing (O'Sullivan and Gibb, 2012; Evans, 2012).

Finally, note that planning policy may affect inequality in ways other than through housing costs alone. For example, Cheshire et al. (2011) argue that retail planning policy might increase inequality. Specifically, Cheshire et al. argue that 'town-centre first' planning rules, which aim to concentrate new retail development in central locations, reduce the productivity of retail stores by up to 20% and thus are likely to raise prices. Given that expenditure on food as a share of total spending declines as a function of household income (spending on food accounts for around 20% of the expenditure of the poorest 10% of households, compared to 14% of the richest tenth), policies that rise prices may be inequality increasing. Such planning policies may have other benefits of course (which might potentially include improving the vibrancy and competitiveness of town centres more generally, or reducing carbon emissions by concentrating retail in central locations).

It should also be noted that the town centre first planning policy in Scotland is not as restrictive as that in England. However, there has been contention around the Scottish Government's levy on larger shops selling tobacco and alcohol which was introduced in 2012. Dubbed the 'supermarket tax', there have been claims by retailers that the levy would result in higher prices for consumers. The Scottish Government plans not to renew the levy when it ends in March 2015.

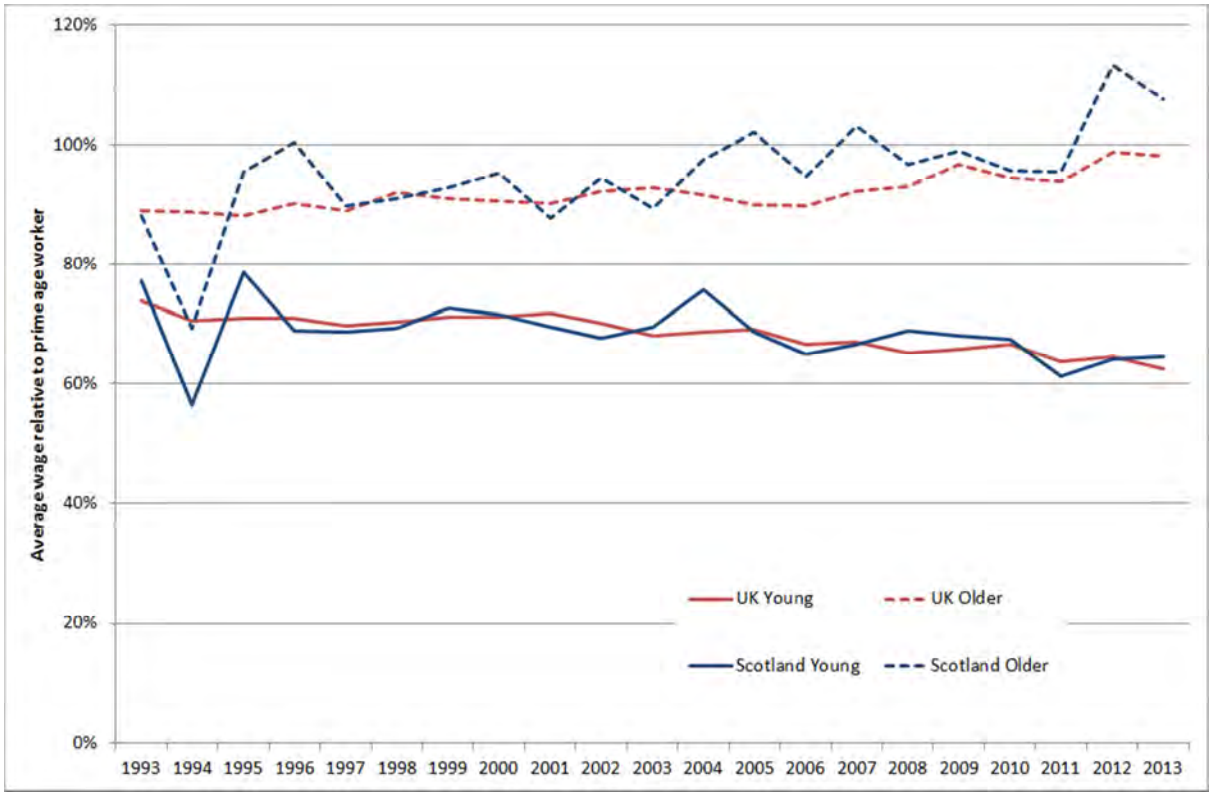
6. Intergenerational inequality and earnings mobility

This section discusses two related issues. The first is the concept of inter-generational inequality, that is the extent to which the incomes (or well being more generally) of a given generation might change relative to those of other generations (as opposed to intra-generational inequality, the level of inequality between individuals in the same generation). The second is the concept of intergenerational earnings mobility, which is the extent to which children born into poor families grow up to become poor adults. It is thus related to the broader concept of equality of opportunity.

6.1. Intergenerational inequality

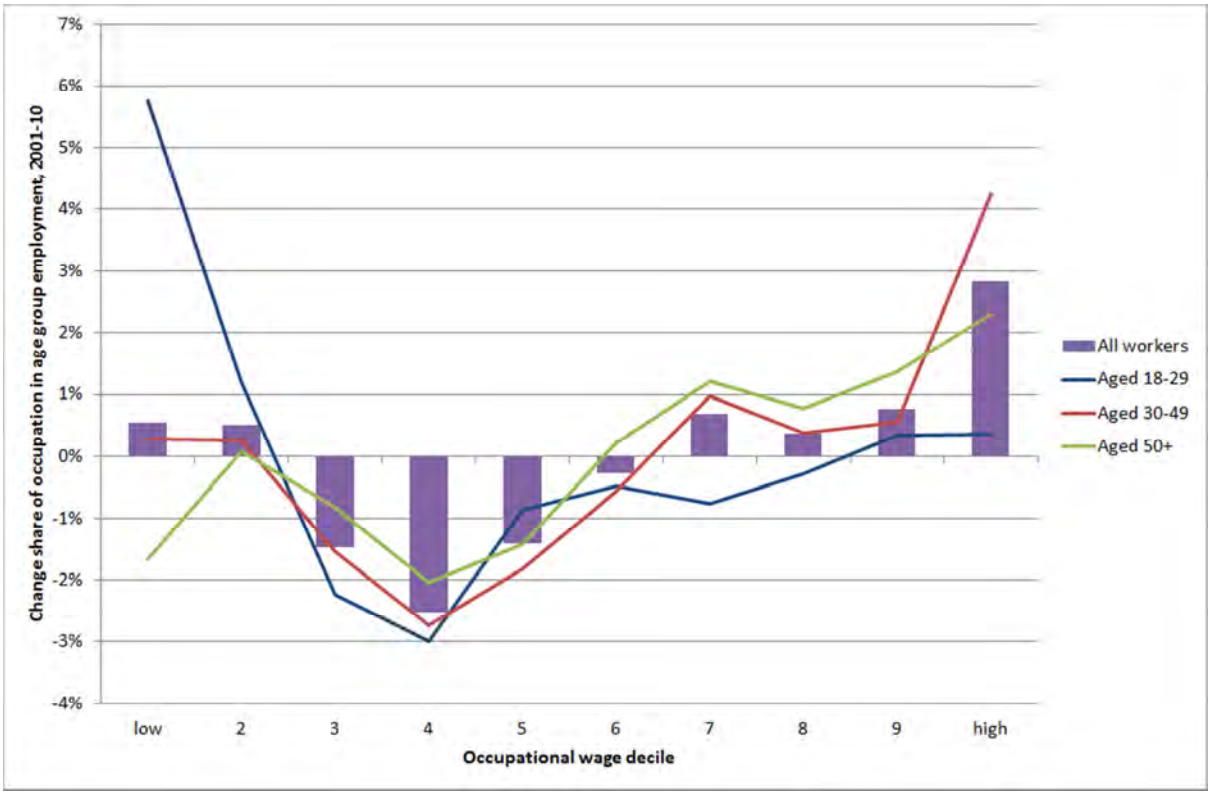
There has recently been significant attention on the changing fortunes of different generations in society. In particular, the young as a group appear to have been doing relatively badly in the labour market. Rates of unemployment among the young have risen relatively faster than those of prime age or older since well before the recession (Bell and Blanchflower xxx). And even among those in work, the wages of younger workers have fallen relative to those of older workers ; Figure 6.1 for example shows that the average hourly wages of young workers (aged 18-29) has fallen over time relative to that of prime aged workers (30-49), but wages for older workers (50+) have grown relative to the prime aged group. One possible explanation for these relative wage changes is that younger people have been relatively unsuccessful in capturing a share of the growth in higher skilled jobs in recent years (Figure 6.2).

Figure 6.1: Average hourly wage by age group, UK and Scotland



Source: Labour Force Survey

Figure 6.2: Job polarisation by age group, UK 2001-10



Notes: Occupations are divided into deciles according to the median hourly wage paid by each occupation in 2001. The graph then plots the change of each decile of occupation in the total number of jobs between 2001-10. For all workers there is evidence of polarisation – a fall in the share of middle-wage jobs and growth in the share of both low-wage and high-wage jobs. Among younger workers however there has been a much larger growth in low-paid jobs and a correspondingly smaller growth in high paid jobs. In contrast, older workers have seen a declining share of low-paid jobs.

These labour market changes for individuals feed through to household incomes. Figure 6.3 shows that the incomes of pensioner households has grown relative to those of working age households. There is a misconception however that the relative income growth of pensioner households has been driven by favourable uprating of the State Pension. Portes (2014) however points out that the value of the State Pension relative to average earnings fell during the 1980s, 1990s and 2000s, and has not yet recovered. Instead, rising incomes among pensioner households are driven by relatively generous defined benefit pension schemes among the upper half of the distribution, and the introduction of Pension Credit for households in the lower half.

Figure 6.3: Median income of pensioner households as a percentage of non pensioner households

Source: HBAI

What about the distributional effects of other recent policy changes, beyond the tax and benefit system? The relative protection afforded to the health budget seems likely to favour older groups. In terms of education, there has been a heated debate about the implication of tuition fees for inter-generational inequality. Dorling (2014) argues that the introduction of tuition fees and the insufficiency of the maintenance grants available means that the older generation 'is opting out of an obligation to pay to fully educate the much smaller generation behind it'. A slightly different perspective is provided by Portes (2014), who argues that overall taxpayer subsidies to students have increased in recent years, and that, because of rising HE participation 'what has changed is that the subsidy is distributed over far more students'. The introduction of income-contingent fees (effectively a capped graduate tax) represents a more progressive way of distributing this subsidy. Portes thus argues ' the idea that the pre-tuition fee regime, with far fewer students receiving higher subsidies, and going on to receive excellent labour market returns, was in any sense "fairer" seems difficult to maintain.'

In Scotland, university tuition fees are met by the Scottish Government, although there is some evidence that the cost of this policy is a less generous and less progressive system of maintenance grants for the poorest students (Hunter, 2013).

Despite the rise in the costs of attending Higher Education, participation in HE continues to increase. Dorling argues that this is because 'as income inequalities escalate, the cost of failing to secure a place in the top half of society rises, and so the perceived benefits of a university education rise in turn'. Lindley and Machin (2011) indeed find that the returns to education are continuing to increase. But they also find evidence that there have been faster increases in education acquisition among richer than poorer families. Putting these two together (more education for people from

richer backgrounds and an increase in the pay-off to this education) implies increasing within-generation inequality. By reinforcing already-existing inequalities from the previous generation, this is likely to hinder social mobility.

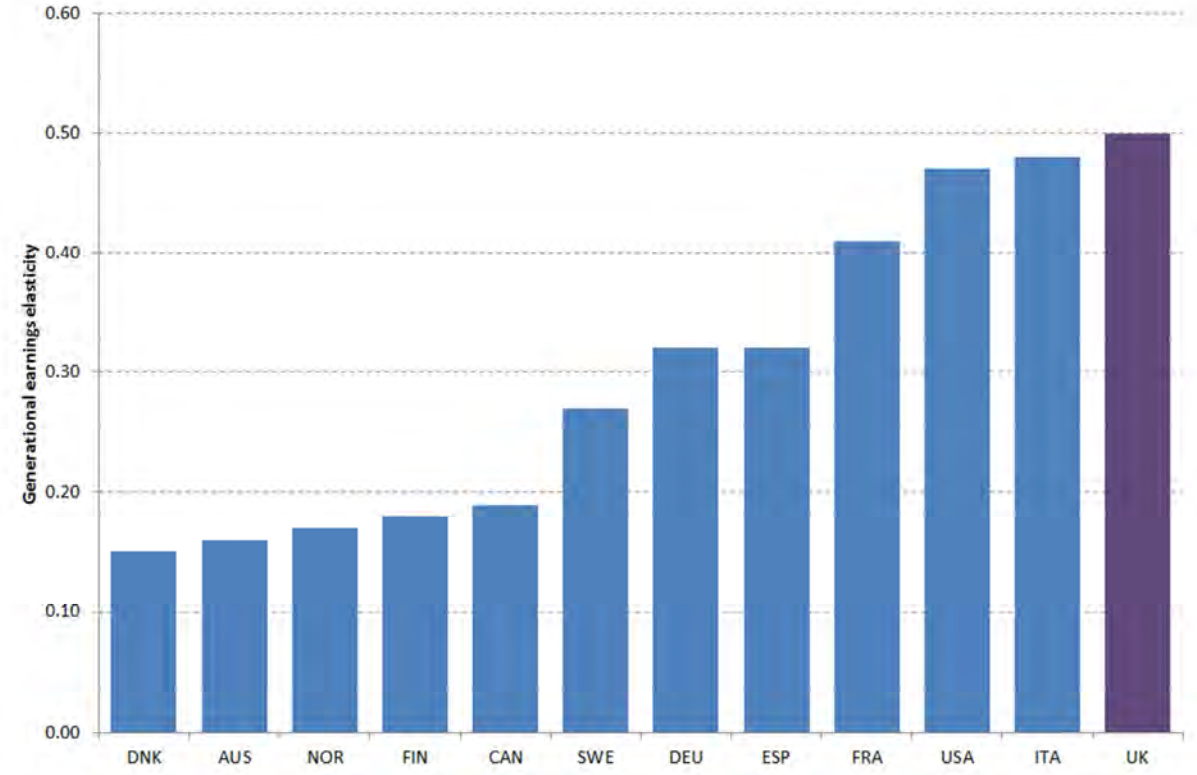
This latter point is significant. Whilst the analysis of how well-off each generation is relative to another is undoubtedly interesting, it remains the case that intra-generational inequalities are much more significant than inter-generational inequality (and similarly, intra-generational redistribution is more significant than inter-generational redistribution). Inter-generational inequality is important because it accentuates intra-generational inequality through inheritances, not only of income and wealth, but also opportunity. This observation brings us nicely to the discussion of intergenerational income mobility.

6.2. Intergenerational earnings mobility

Intergenerational earnings mobility measures the extent to which the economic status of children differs from that of their parents. A recent report (d'Addio, 2007) highlighted that, along with the US and Italy, the UK has a relatively low level of earnings mobility, meaning that there is a strong relationship between the economic position of the parents in the earnings distribution and that of their children (Figure 6.4). Specifically, Figure 6.4 measures the elasticity between parental earnings and a son's adult earnings: the figure of 0.5 for the UK indicates that 50% of any earnings advantage or disadvantage is passed on from one generation to the next. Intergenerational mobility is a lot higher in the Nordic countries, Canada and Australia, indicating a relatively weak relationship between the economic status of parents and that of their children.

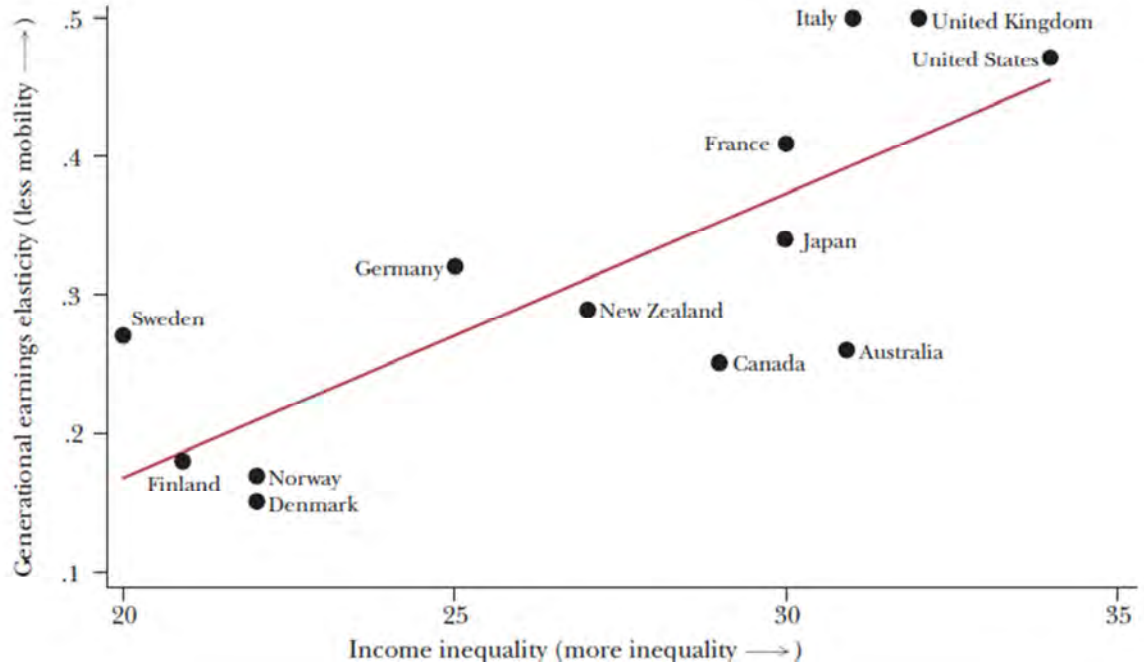
Countries with greater inequality of incomes tend to be countries in which a greater fraction of economic advantage and disadvantage is passed between parents and their children (Corak, 2013). This relationship is sometimes referred to as the 'Great Gatsby Curve', following Alan Krueger. (Figure 6.5).

Figure 6.4: Intergenerational earnings elasticities



Source: d'Addio (2007)

Figure 6.5: The Great Gatsby curve



Source: reproduced from Corak (2013)

Data for the US indicates that, across a very broad swathe of the middle of the income distribution, there is a good deal of intergenerational mobility. But it is in the bottom and top deciles of the distribution where there is relatively more 'stickiness' in mobility, certainly when compared to other countries (Corak, 2013). There is some evidence that a similar observation is likely to hold in the UK (Serafino and Tonkin, 2013). Data from several countries also indicates that the intergenerational elasticity of income tends to be higher at the top of the distribution than at the bottom (i.e. being born to a rich father confers a greater advantage than being born to a poorer father confers a disadvantage). Whether this finding would hold for the UK is not clear, but it arguably aligns with a popular perceptions.

Of course, inequality of intergenerational earnings mobility is not the same as inequality of opportunity; there is a distinction here between differences in circumstances, for which individuals should in some sense be compensated; and differences in personal choices, for which they should be responsible. Studies attempt to control for factors over which individuals have no control, including parental education and place of birth. There is evidence of a strong correlation between measures of intergenerational earnings mobility and inequality of opportunity (Brunori et al. 2013).

This report has already touched on some of the reasons why income inequality is likely to lead to lower intergenerational earnings mobility: intra-generational income inequality results in unequal transmission of resources to the next generation, whether in the form of property wealth or financial resources to access education, internships, and other investments that maximise future earnings potential. Solon (2004) for example shows that countries with a higher return to education tend to have lower intergenerational mobility.

But the intergenerational transmission of opportunity is about more than income and wealth. The work of James Heckman among others has shown how different aspects of child development can influence adult labour market outcomes. Recent research in Scotland has shown that children from poorer families already lag their peers academically when they start school, and this gap widens through the education system (Sosu and Ellis, 2014). Corak (2013) suggests that 'increasing divergence in both monetary and nonmonetary investments in children during an era of increasing inequality may well lead to an increasing divergence in cognitive attainments and achievements that are the necessary prerequisites for college success.'

7. Conclusions

Inequality has increasingly become the key issue in political debates about the nature of our society in recent years. There are several explanations for the growing interest in inequality. We may be getting close to the level of inequality beyond which the its beneficial effects on incentives are outweighed but its detrimental effects. The level of inequality may have contributed to the recession of 2008/9. Inequality also skews opportunity and limits intergenerational mobility. This offends many people purely on the basis of what is perceived as 'fair', and risks creating a society that is 'dynastic', rather than dynamic, and has become a politically charged issue given the constraints on public finances and the implications for the funding of public services.

Inequality in the UK is high relative to international comparators, but that this is largely the result of a 'London-effect'. Inequality in Scotland is roughly average compared to OECD countries, but is slightly higher than the European average, and notably higher than in the Nordics.

The UK's tax and benefit system is averagely redistributive compared to other OECD counties, and the level of redistribution achieved by the UK's system of taxes and benefits has remained fairly constant since 1980. The main factor driving inequality is not the tax and benefit system, but changes in the demand and supply of skills.

Most of the increase in market income inequality occurred during the 1980s and early 1990s. De-industrialisation led to falling demand for lower and middle paying jobs, and combined with labour market deregulation (particularly the declining role of Trade Unions) this bid down real wages in the lower part of the income distribution. At the same time, financial deregulation and reduced top rates of income tax led to increases in the income shares of top earners.

Since the late 1990s, inequality has continued to rise, but more slowly. The number of jobs in semi-skilled occupations that can easily be mechanised or off-shored has continued to decline, but there has been some increase in demand for low-paid jobs in occupations that cannot be mechanised, and rates of pay in these jobs have been protected to an extent by the introduction of the minimum wage in 1997. However, the changing nature of job demands (greater flexibility of working hours), and further labour-market deregulation (e.g. zero-hours contracts) has meant that the average hours worked by those in low paid jobs has tended to fall, and this has been a major driver of the increase in inequality in recent years.

At the top of the pay distribution, the most notable trend over the past 10 years has been the continued pulling away of the salaries of the highest 1% of earners. There is an ongoing debate as to whether this increase in top pay is fair in the sense of reflecting the skills and value added of top executives, or whether it simply reflects the ability of these individuals to set their own pay or lobby for pay increases, especially in complex organisations where performance is difficult to measure.

Trends in inequality at household level have broadly followed those at an individual level, i.e. the significant increase in household inequality occurred during the 1980s, and has been slower since then.

Young people have fared particularly badly in the labour market in recent years, experiencing higher rates of unemployment and lower wage growth. Inter-generational inequality is important because it accentuates intra-generational inequality through inheritances of income and opportunity. The UK

has a relatively low level of earnings mobility, meaning that there is a strong relationship between the economic position of the parents in the earnings distribution and that of their children. Higher income inequality in the present makes family background play a stronger role in determining the adult outcomes of young people, with their own hard work playing a commensurately weaker role.

The policy responses to rising levels of inequality are not always easy to design or implement. Progressive taxation of mobile factors can be both politically and economically challenging, especially in a world of increasingly frictionless borders. Targeted means tested benefits designed to support the incomes of those out of work will inevitably create high marginal effective tax rates as individuals move into work. And we show that even the introduction of a living wage might not necessarily be inequality reducing because of the way that low-paid work is distributed across households at different parts of the income distribution, illustrating the distinction between 'low-paid work' and 'low income households'. Nonetheless, the fact that the level of redistribution across OECD countries varies substantially shows that fiscal policy can play an important role in mitigating inequality.

In addition to taxes and benefits, government policy often has unintended consequences on inequality, by changing the prices of goods and services that are purchased in different quantities by poorer and richer households respectively. Although the true picture is often not as simple as that painted in the popular press, energy policy and restrictive planning policy are two areas where policy has affected the budgets of poorer households relatively more than the rich by raising the prices of household energy bills and housing costs respectively. In the case of energy policy, environmental targets will have to be paid for somehow, although there is a case for funding these policies from alternative tax structures. In the case of housing, planning is undoubtedly one part of the cause of the recent house price boom, but there is also a strong case for reform of the way land and housing is taxed.

Ultimately, the future path of inequality is likely to be strongly determined by the role that technological change will play in influencing the demand for skills. There remains disagreement about the extent to which future computerisation might substitute for humans in jobs at different parts of the skill distribution, and how this will effect relative wages. But it seems almost certain that we are moving to a world where jobs requiring high cognitive, analytical and interactive skills are increasingly commanding a wage premium over lower-skilled jobs, for which labour supply is almost infinite. Ensuring that people can access an appropriate portfolio of skills to meet the demands of changing labour markets is thus a key part of any policy to address inequality.

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