Inequality, living standards, and welfare provision

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Introduction

We are all born into inequality: in potential height, strength, intellect, and all the other elements that reflect the diversity of our species. However, much inequality is socially-constructed and, therefore, of salience to social scientists and policy-makers. Inequality can arise from discrimination: by ethnicity, class, gender, religion, and other characteristics. Institutional discrimination can also occur indirectly owing to differences in parental income, which have strong impacts on children's life chances, encompassing such important factors as educational attainment, access to higher-paying careers, and even life-expectancy.

In 1900 the chances of the child of a manual worker rising to the professional classes were virtually zero, owing the very limited education he/she could access, together with a formidable class system. Seventy years later, despite the playing field remaining deeply uneven, the life chances of working-class children had been transformed, with a reduction in income inequality and the development of a welfare state that provided financial support to those in need, plus a range of services, from housing to education. However, the process of equalising life-chances has since stalled and reversed.

Apart from the obvious welfare and social justice arguments, high inequality and low social mobility are likely to negatively impact economic efficiency, as a society that is 'closed' to meritocratic entry into higher-earning occupations is likely to exclude many of its potentially most talented individuals. Thus it is plausible that the tax and welfare state reforms of the 1980s, which were defended in terms of their positive impacts on efficiency and competitiveness (by boosting incentives), may actually have had the opposite long-term effect.

We first examine changes in the distribution of income and wealth over the twentieth century, and beyond, together with their drivers. We then review changes in living standards and related issues such as social mobility, equality of opportunity and poverty. This is followed by a discussion of the rise and fall of the welfare state. Finally, we examine whether changes in inequality and living standards are driven primarily by long-run technological change or the ebb and flow of globalisation.

Trends in income and wealth inequality

Income inequality statistics are generally based on income tax data and cover 'tax units' – a man and wife, or a single adult (or a child with income in his/her own right), plus dependants. Pre-1939 data are generally restricted to higher earners, as these were the only ones who then paid income tax. However, such 'top incomes' are important, because income redistributions in western countries have typically been dominated by changes in the shares of this group, especially the top 1 percent (Piketty and Saez, 2006: 201-2). Table 1 shows the income shares of the top 0.01 – 10.0 of the population, together with the bottom 90 percent.

[Table 1 near here]

The UK's' (then including Ireland's) 1911 income distribution was extremely unequal. The top 1 percent of the population enjoyed some 30 percent of total personal income, while the top 0.01 percent had 4.6 percent of personal income (460 times more than the average person). The First World War witnessed a substantial reduction in income inequality, while the inter-war years saw some further reduction in inequality within the top income range, but little change for the top 5 or ten percent. The Second World War witnessed a significant further redistribution, with the share of the bottom 90 percent rising from around

64 percent in 1937 to 68 percent in 1949. However, UK income inequality in 1949 was still greater than that for France and the USA, as it had been in 1911 and 1937 (Scott and Walker, 2020; Piketty, 2003: 1037; Piketty and Saez, 2003: 8-9). The trend towards greater equality continued until the 1970s, but was reversed from around 1980, with the income share of the bottom 90 percent falling below its 1919 level by the end of the century and experiencing a further slight decline by 2014.

These figures cover pre-tax incomes. Changes in after-tax income from 1911-2000 are examined in Table 2. In 1911 a top income tax rate of 5.8 percent (plus a maximum 2.5 percent "super-tax" for the rich), left after-tax income shares little different from pre-tax shares. However, by 1937, partly owing to rearmament, much higher income taxes substantially reduced the shares of the top 0.1-5 percent, but had only a small impact on the top 10 percent. The bottom 90 percent received a growing share of post-tax income until the 1970s, while the tax and benefits system became much more redistributive, largely due to the development of the post-war welfare state. However, redistribution was reversed from the 1980s, with the bottom 90 percent's income share falling back to just over its 1937 level by 2000. Meanwhile the top 0.1 percent - the biggest losers in terms of post-tax income shares over 1911-1970 (from 12.34 to 0.73 percent) – saw their losses reversed, recovering to almost their 1937 shares.

[Table 2 near here]

Table 3 examines changes in the distribution of personal wealth (based on 'net worth': the value of assets owned by individuals, net of their debts), over the twentieth century. These include both financial assets (stocks and bonds etc.), plus 'real' assets, such as property or an unincorporated family business. The Table is based on recent research by Alvaredo et. al., (2018), who use data from the estates of deceased persons, with adjustments to allow for the fact that mortality is weighted towards older age groups. The table indicates that wealth has been substantially more concentrated than income. This partly reflects a general pattern across nations for wealth concentration to be stronger than income concentration. However, Britain had an unusually high concentration of wealth compared to other western nations, reflecting its extreme concentration of land in the hands of the aristocracy and gentry (Lindert, 1991: 220-24). In 1900 the bottom 90 percent held only 7.3 percent of personal wealth and even in 1938 they held only 15 percent. The trend towards greater wealth equality accelerated after the Second World War, but slowed in the 1980s and reversed from the 1990s – following the economic liberalisation policies of the Thatcher and Major Conservative governments.

[Table 3 near here]

Why is the post-1979 upward trend for wealth inequality much weaker than that for income inequality? One important factor is the extension of owner-occupation, which has distributed a major source of wealth more widely (Alvaredo et. al., 2018: 36-7). House price inflation has magnified this trend, given that many people who purchased their house several decades ago own homes that they could not now afford to buy on mortgage. Another potentially important factor concerns the declining importance of capital incomes (incomes flowing from wealth) compared to the early twentieth century. Prior to 1939 top incomes were typically dominated by `capital incomes' (dividends, interest, rents, etc.), in Britain and other western nations. However capital incomes have played a relatively minor role in the post-1980 surge in top income shares compared to salaries and business/entrepreneurial incomes (Atkinson, Piketty, and Saez, 2011: 6-8).

In focus: the Gini coefficient as a summary measure of inequality

Although data on top income or wealth shares are useful, we also need some overall summary measure of inequality. The most widely used summary statistic is the Gini coefficient (developed by the Italian statistician and sociologist Corrado Gini). Gini provides an absolute, 0-1, index of inequality, with zero indicating perfect equality and 1 representing complete inequality (one person having all the income, or wealth). Values greater than one are also theoretically possible - if people have negative income (i.e. their debt payments outweigh their income).

The Gini coefficient can be most easily interpreted geometrically, using the Lorenz curve, shown in Figure 1. The diagram plots cumulative shares of population against cumulative shares of income. If income was perfectly equal, it would follow the 45 degree 'line of equality'. The Lorenz curve shows the extent to which income/wealth distribution departs from equity. Therefore:

$$\text{Gini coefficient} = \frac{\textbf{(Area A)}}{\textbf{(Area A + Area B)}}$$

[Figure 1 near here]

The Appendix provides a mathematical definition of the Gini coefficient. Long-term comparisons of Britain's Gini coefficient have been hampered by incompatibilities in the ways it has been calculated for different periods. Atkinson and Jenkins (2019) provide a linked series from 1937 to 2012. This shows the expected U-shaped curve, with Gini falling to a low of 0.37 in 1978 and then rising to around 0.50 in the 2000s (above even its 1937 value). Figure 2 shows a comparison of the Gini coefficient and the income share of the top 5 percent (for convenience, the Gini is graphed as a percentage, rather than a fraction of 1, to make it directly comparable with the 5 percent income share). Changes in the top 5 percent's income share appear to dominate the changes in Gini, reflecting the fact that this group were major gainers from the neo-liberal job market, tax, and benefit reforms initiated in the 1980s.

[Figure 2 near here]

Living standards, equality of opportunity, and poverty

Figure 3 shows the growth in average UK real pre-tax earnings from 1900-2018. Virtually flat real earnings during 1900-1913 (with a decline from 1908-1913), were followed by more rapid growth in the inter-war era, sustained growth from the 1950s to 2007, and finally the longest peacetime earnings fall following the onset of the 2008 `credit crunch.' Overall, the twentieth century has seen a huge leap in living standards, with the average worker in 2018 earning around 3.7 times the real income of his/her ancestor in 1900, while the early twenty-first century shows no clear trend. However, for households, income growth would have been faster during the second half of the twentieth century, due to a dramatic rise in the number of married women in the formal labour market.

[Figure 3 near here]

Twentieth century Britain also witnessed a major compression in the initially huge income differentials between different classes of worker, illustrated (for adult males) in Figure 4. In 1911-14 higher professionals (e.g. doctors, lawyers, accountants) received 3.49 times average male earnings, while lower professionals (e.g. nurses, teachers, laboratory technicians) received 1.65 times, and managerial workers 2.13 times. Conversely semi-skilled and unskilled workers received 73 and 67 percent of the average respectively, while clerks (among the least well-paid of all "white collar workers") and skilled manual workers typically received just over the average. By 1978 the gap between the highest and lowest groups had markedly narrowed. Higher professionals still led the field, but with only 1.73 times average earnings. Managers and lower professionals had also moved much closer to the mean, while clerks' relative incomes had fallen to around those of semi-skilled workers.Yet, the relative position of manual workers had not greatly improved and despite some decline in their proportion of all male workers (from 78 percent in 1911 to 62 percent in 1971 (Routh, 1980: 6-7) they still constituted the bulk of male, and total, employment.

[Figure 4 near here]

Meanwhile the large pay differentials between men and women had declined, mainly during 1939-47 (owing to very tight labour markets) and the 1970s (owing to anti-sex discrimination legislation) (Joshi et. al., 1985: S158). This leglislation also ended the widespread practice of employers' `marriage bars', prohibiting women from working after marriage. Marriage bars were often justified on moral grounds (the need for the wife to be at home to look after children), though they provided major cost savings for employers, by segmenting their labour force. By providing a relatively uncontroversial means of dismissing older female workers, and replacing them with cheaper juvenile girls, they reduced costs for un/semi-skilled work (that was often assigned to female workers). Meanwhile more skilled work - requiring years, rather than weeks or months, to fully master - was reserved for male workers, who were regarded as part of their permanent labour force (Scott, 2007: 194-196).

The range of occupations open to women had also expanded greatly, again assisted by legislation, such as the Sex Disqualification (Removal) Act 1919, which prohibited discriminatory practices that had excluded women from many professions. However – in common with legislation to outlaw job discrimination by race – real change proved very slow and even today women and many racial minorities are substantially under-represented and under-payed in corporate board rooms and some professional and high-status occupations.

Discrimination by class has also proved intransigent (in some respects more so than gender). Prior to the 1940s only a very small proportion of working-class children entered secondary education (which was necessary for most clerical jobs and improved the chances of entering skilled manual occupations). In 1932 it was estimated that, for children of equal ability, seven fee-paying children entered secondary education for every child that won a free place (McKibbin, 1998: 260). The post-war decline of manual occupations and the rapid expansion of the service sector created an impression of a more open society (by creating more white-collar jobs). However, studies in the 1970s noted that relative mobility rates by social class had not greatly increased (Heath and Payne, 2000: 255-7). This partly reflects persistent inequalities in education. Edgerton and Halsey (1993) noted that while there had been a substantial reduction in gender inequality with regard to higher education, there had been no diminution in social class inequality, with parental occupation remaining a strong predictor of a child's odds of getting into tertiary education and, particularly, elite universities (that expanded much more slowly than the overall university sector).

An influential report for the Social Mobility Commission (Friedman et. al., 2017) found that the odds of children from professional backgrounds ending up in professional jobs were 2.5 times higher than those from less-advantaged groups (much higher than the odds differences for males and females of all classes; see Office for National statistics, 2018). An extreme example is medicine: 73 percent of doctors are the children of professionals and managers and less than 6 percent have working-class backgrounds (Friedman et. al. 2017: 1). Thus, while opportunities for social mobility had increased universally - with the expansion of professional/managerial occupations - for the children of working-class parents the odds of pursuing such high-status careers remain very much against them.

Meanwhile poverty remains a major economic and social problem, despite a 275 percent increase in real pre-tax incomes from 1900-2018. Britain's unusually high pre-1914 income inequality meant that its high GDP per capita was not reflected in working-class living standards. British life expectancy was only 53 in 1913, lower than the Netherlands, Denmark and Sweden – despite higher British per capita incomes; with many people being so malnourished that they were stunted in height (Scott, 2007: 1 & 33).

Prior to the 1940s poverty was a constant risk for most families, should the main bread-winner become ill, incapacitated, or unemployed (accentuated by the fact that women's wages were only around half those of men, and wages for juveniles were markedly lower). Meanwhile even many families with the father working full-time were in poverty - on account of low wages. The inter-war years witnessed rising living standards for those in work and significantly higher state unemployment assistance, but mass unemployment greatly increased the risk of long-term poverty, especially for people working in the staple industries, or living in the industrial heartlands of northern England, Scotland, and Wales.

The post-war full employment welfare state reduced, but did not eradicate, poverty. Absolute poverty (based on a minimum income deemed sufficient for all *essentials*) fell to comparatively very low levels, but relative poverty - defined as household incomes less than half of the median (middle of the range) - remained around 5-10 percent even in the 1960s and 1970s. Figure 5 shows relative poverty rates from 1961 to the 2017-18 financial year, before and after housing costs. During the 1960s and 1970s Britain had low relative poverty, which was broadly similar before and after housing costs. However, during the 1980s relative poverty soared to around 14-15 percent after housing costs, boosted by housing cost inflation (especially in London and the South East). If the relative poverty rate is set at half the *mean* (average) income, rather than half the *median* income, there is a sharper rise in after housing cost poverty, from around 10 percent in the 1960s and 1970s to around 25 percent in the 1990s.

From the 1990s relative poverty rates (as shown in Figure 5) before housing costs have declined somewhat, but relative poverty after housing costs has stayed around its peak levels. Significantly, the sharp fall in headline unemployment since 1990 appears to have had little impact on relative poverty, especially after housing costs – suggesting that there may be major elements of under-employment or under-reported employment not captured in official statistics.

[Figure 5 near here]

Tempering inequality: the welfare state and its critics

In 1900 the state's role in social welfare was largely limited to regulation, primary education, and the Poor Law. Meanwhile the proportion of families who could realistically guard against destitution in the event of the main breadwinner becoming unable to work – through savings or insurance - was very small, certainly less than five percent. Most working and lower-middle class families relied on a patchwork of self-help, mutual-aid, and religious,charitable, or philanthropic institutions, such as friendly societies, trade unions, building societies, retail co-operatives, and `industrial'(burial) insurance companies. However, these were inadequate even in periods of prosperity, let alone during a protracted trade depression (Finlayson, 1994: 107-200).

The 1906 and 1910 Liberal governments introduced some tentative welfare measures, including a modest pension for people over 70, via the 1908 Old Age Pensions Act. This was followed by the 1911 National Insurance Act, which provided sickness and unemployment benefits for certain classes of workers. The 1911 Act introduced the principle of a state-supported insurance system, funded by the contributions of workers, which still underpins a major strand of the British welfare state. Germany had already introduced a similar system, which strongly influenced British policy (Hill, 1990: 18-19).

The next phase of innovation occurred towards the end of the First World War. Policy-makers became concerned about potential popular unrest if demobbed soldiers returned to civilian life to find they had no jobs or homes. Fears were expressed that this might even lead to revolution (as happened in Russia and parts of Eastern Europe). An 'out-of work donation' for the unemployed, which became known as 'the dole', was introduced, followed by the 1920 Unemployment Insurance Act, which extended the 1911 social security legislation to all manual workers and non-manual workers on less than £250 per annum.

Meanwhile, partly to create work, the government introduced the 1919 Housing and Town Planning Act, subsidising local councils to build 'homes for heroes' (Scott, 2013: 37-

38). These were generally located on greenfield areas beyond existing urban boundaries (capitalising on transport improvements accelerated by the War). Their design marked a major improvement in size, utilities, and garden space compared to pre-1914 working-class housing and established the blueprint for the inter-war suburban semi-detached house. Although the original post-Armistice 'homes for heroes' council housing programme was beset with delays and, later, drastic expenditure cuts, these recommendations formed the basis of a series of major house building programmes over the next 20 years, resulting in the construction of 1,320,000 municipal homes (Scott, 2013: 7 & 82).

Unemployment benefits were also subject to retrenchment as costs escalated following the emergence of mass unemployment during the 1921-22 recession. A further increase in unemployment during the 1929-32 world depression prompted the introduction of the hated 'means test' by the new National government in November 1931. This subjected households to examination by investigators, to ensure that they had no other means of subsistence (for example, household items that might be sold) and that any payments were kept to the lowest possible level compatible with avoiding starvation.

The Second World War transformed the relationship between the state and its people, with public expenditure on social services (equivalent to only 2.3 percent of GDP in 1900 and 4.9 percent in 1920) jumping to over 10 percent by 1948 (Johnson, 2004: 216). War mobilisation rapidly transformed Britain into a 'command economy' with tight control over the allocation of resources - including the vast majority of people, who were subject to some form of conscription, even for civilians. This environment influenced war-time social services and post-war reconstruction planning – based on the Beveridge (1942) report: *Social Insurance and Allied Services*. Beveridge proposed a comprehensive policy of income maintenance, to address what he described as 'five giants… Want, Disease, Ignorance, Squalor and Idleness,' via a mainly insurance-based system, following the precedent of the

1911 Act. This would be supplemented by non-contributory means-tested ‘social assistance’ benefits for circumstances not covered by the insurance-based benefits. The system would provide protection against loss of income during sickness and unemployment, together with pensions and a range of other
benefits.

Despite Treasury opposition, the 1945 Labour landslide election victory ensured that there would be no return to the policies of the 1930s. The 1946 National Insurance Act, 1946 National Insurance (Industrial Injuries) Act, and 1948 National Assistance Act launched a compehensive social insurance and welfare system (Hill, 1990: 31). Together with the foundation of the National Health Service (assumed in Beveridge’s report) in 1948 and the 1944 Education Act, providing universal education up to age 15, the key features of the post-war welfare state were in place. Its success was facilitated by buoyant economic growth and full employment up to the 1970s, together with rapid medical advances. Further waves of council housing also assisted low-income families.

The welfare state was subject to substantial cuts from the 1980s, discussed in the next section. The most recent round of welfare reforms, introduced in the wake of the credit crunch, have again raised the spectre of destitution for those unable to work. The 2012 Welfare Reform Act replaced unemployment-related and income benefits by `Universal Credit.’ While this had some positive features (such as rationalising the benefits system), it required claimants to wait at least five weeks before receiving their first income payment. As many claimants had little or no savings, waiting five or six weeks for money often led to eviction from their homes and/or amassing huge debts to ‘pay-day lenders’ charging extortionate interest rates. Despite regulation of pay day loans from 2015, following a Competition and Markets Authority investigation, Universal Credit continues to plunge substantial numbers of families into the type of deep absolute poverty not seen in Britain since the 1930s - including several cases where vulnerable people refused benefits have died of starvation (Butler, 2020).

In focus – has Britain over-spent on social welfare?

The election of Margaret Thatcher's government in 1979 witnessed a sharp break with previous Conservative administrations, with a commitment to 'rolling back the welfare state,' as part of a wider initiative to cut public expenditure. In some respects it was successful, particularly in council housing, which was sold off at heavily-discounted prices, mainly to sitting tenants (thereby eliminating most of the social housing sector). However, despite cuts in social security provision, the overall cost of the welfare state continued to rise, owing to the temporary return of mass unemployment during the 1980s and the longer-term trend towards higher life expectancy – increasing medical and pension costs. Government thus reinforced its attack on the welfare state. In addition to opposition in principle to the state playing a major role in people's lives, through taxation and benefits, the system was branded expensive and inefficient. To what extent are these arguments justified?

One proximate measure is spending comparisons with other nations. Advocates of reform claimed that a large welfare state represented a key ingredient in a specific 'British malaise' (Slater, 2012) that gave Britain a competitive disadvantage. Table 4 compares long-term changes in three important elements of public social welfare spending – education, health, and pensions – in the UK, France, Germany, Sweden, and the USA. All five nations show long-term trends of rising welfare expenditures, as expected, given that services such as pensions and health are 'superior goods,' demand for which grows more than proportionately with economic growth. Moreover, productivity growth for health and other social services (both public and private sector) is generally slower than in manufacturing (De Vries, 2008:

238). In 1960 UK welfare spending was roughly on a par with the other four countries (except for pensions, where it was the lowest spender, relative to GDP). However, in 1980, when the welfare state was allegedly 'bloated,' UK public health spending accounted for a lower proportion of GDP than the other countries (with the exception of the USA); Britain's pensions expenditure was the lowest in the table; and its education spending was broadly in line with the other nations. A similar pattern is evident for 2013.

[Table 4 near here]

These figures do not include some important elements of welfare spending, particularly unemployment benefits, which vary considerably over the economic cycle and are thus best measured over several years. Figure 6 examines total public social expenditure for the UK and eight OECD countries. Britain was towards the bottom of the league table of social welfare spending in 1980 and, despite some increase during the Blair and Brown Labour governments, has remained in the lower half.

[Figure 6 near here]

Expenditure is only one side of the value for money equation, though the fact that Britain had a relatively low ratio of public welfare expenditure to GDP suggests that any `crowding out'of private investment could not have disadvantaged it relative to other, more successful, economies, which typically had higher social spending. Assessing value for money is problematic, given that there are no clear 'prices' for goods that are free at the point of delivery. However, a review of the literature by Johnson (2004: 224-228) found that many studies on the efficiency of public sector provision are inconclusive or obviously biased - owing to nonsensical assumptions such as non-market activities being inherently non-productive and market services inherently productive (which would mean that private education or health spending would benefit the economy, by definition, while public education and health spending would not). Johnson concluded that the argument that public welfare provision inevitably harms economic performance remains unproven, though badly designed and/or administered welfare systems can have adverse economic impacts. Much of the literature also ignores the 'agency' risks of private welfare provision – for example insurers refusing to pay out on private health insurance policies, or the mis-selling of private pensions (which became a scandal during the 1980s).

Debates and interpretations: why did income inequality fall from 1900 to the 1970s and why has it risen since 1980?

Most large industrial nations followed Britain's pattern of falling income inequality from 1914 to the late 1970s, followed by either a reversal, or a flattening, of this trend since 1980. There are two main explanations: the first identifies technology and sectoral change as the major drivers and the second focuses on economic shocks, the reactions of policy-makers, and non-market mechanisms such as labour institutions.

The leading American growth and development economist Simon Kuznets (1955) proposed a model based on the relative value of skills during industrialisation in the old sector (agriculture) versus the new one (industry). As a primarily agrarian society is transformed into an industrial society, workers will switch from low-wage agricultural work to higher-wage industrial employment, leading to rising income inequalities between the two sectors. The initial scarcity of skills required for the new sector (including technical and managerial skills) would further raise inequalities. However, over time the new sector, and its associated skills, come to dominate the economy, thereby reducing inequality. This 'Kuznets wave' model predicts an inverted u-shaped pattern of inequality during the development process.

It has been suggested that deindustrialisation and the information and communications technology (ICT) revolution have triggered a second Kuznets wave, again driven primarily by the greater potential income generation available in the new (ICT and services) sector, relative to manufacturing. This ‘augmented’ Kuznets wave model - shown in Figure 7 - has proved attractive to policy-makers, as it portrays the post-1980 rise in inequality as an inevitable phenomenon rather than a reversible consequence of public policy. Moreover, the model predicts that the problem of inequality is ultimately self-correcting once the new sector becomes dominant.

[Figure 7 near here]

However, Kuznets’ model has been widely criticised as not being supported by the empirical evidence. As three of the leading scholars of global inequality, Tony Atkinson, Thomas Piketty and Emmanuel Saez (2011: 57) note, ‘it has little purchase in explaining top income shares,’ as it essentially focuses on labour incomes, rather than capital (investment) incomes which, historically, have dominated the incomes of the rich. Moreover, they note that much of the recent change in income distribution has taken place within the top 10 percent, where workers have very similar skills (university education). The model also ignores inherited wealth, which can make income inequality persistent. Finally, not all countries have experienced substantially rising inequality after the 1970s. France, Germany, Switzerland, the Netherlands, Japan, and Singapore enjoyed relatively stable inequality, in contrast to the English-speaking countries (USA, Canada, Ireland, UK, Australia, and New Zealand), which were in the vanguard of the move to globalisation and deregulation (Atkinson, Piketty, and Saez, 2011: 41-49).

It is also worth noting that Kuznets’ wave model was more a ‘conjecture’ than a theory. Indeed Kuznets (1955: 26) noted that it was based on, ‘perhaps 5 per cent empirical information and 95 per cent speculation, some of it possibly tainted by wishful thinking.’ Moreover, Piketty (2003: 1036) argues that this theory was not supported by Kuznet’s own data, while Kuznets' discussion of the importance of shocks has been overly neglected by economists.

An alternative argument explains the inequality reduction from c. 1914 – c. 1979 as being driven by a series of economic shocks and policy-responses, together with non-market mechanisms such as labour institutions. The principal shocks were the two world wars, together with the 1920-21 and 1929-32 depressions (Atkinson, 2007: 167-8; Atkinson, Piketty, and Saez, 2011: 5). This explanation fits well with evidence for Britain, where the top one per cent of incomes in 1911 were mainly 'rentiers' (people who live primarily on property and investment income), but rentier-dominated incomes encompassed only the top 0.4 percent in 1937 and the top 0.026 percent in 1949 (Scott and Walker, 2020). War-time inflation reduced the real value of fixed-interest securities; land values declined substantially; and rising taxation impacted even on "pre-tax" personal incomes (for example through corporation tax). Meanwhile some of the economic gains for lower income groups during the two world wars and their aftermaths – such as the welfare state - proved persistent (Atkinson, Piketty, and Saez, 2011, 65-67; Scott and Walker, 2020).

In contrast the post-1979 globalisation - driven by trade and capital control liberalisation, shortly followed by changes in the incidence of taxes and benefits that redistributed resources from low to higher income groups - has witnessed shocks, policy responses, and institutional changes that have acted to increase, rather than reduce, inequality. This largely reflects a change in the balance of power between the economic elite and the state. Globalisation and economic liberalization has made it far easier for the rich to offshore their assets, or themselves, in search of lower taxes or other policies favourable to protecting their wealth. Rising international labour mobility has also increased the bargaining power of top executives when pressing for higher salaries (in relation to profits), based on the need to bench-mark salaries against a 'global market for talent' that has persistently driven up top executive incomes. Meanwhile, for the vast bulk of workers, being 'competitive' has typically involved accepting lower wage growth and less attractive conditions to meet competition from lower-wage countries that enthusiastically embraced globalisation, such as China and India.

The rapidity of the switch from falling to rising income and wealth inequality since 1980 is more plausibly explained by the radical liberalisation agenda triggered by the elections of Margaret Thatcher in Britain and Ronald Reagan in the USA than by technological change (which tends to be a more gradual, cumulative process). This would also explain why countries that have resisted the liberalisation agenda (for example France and Germany) have witnessed stagnant, rather than rising, inequality – an outcome difficult to reconcile with Kuznets wave models. However, it is nevertheless plausible that technological change has played some role in this process, alongside globalisation.

Conclusions

The evidence reviewed above regarding the inequality of wealth and income, and the incidence of relative poverty, all point to a long-term U-shaped pattern, with inequality falling from c. 1914 – c. 1979 and rising thereafter. The welfare impacts of these trends have been amplified by the development of a comprehensive welfare state in the middle decades of the twentieth century, followed by attempts to 'roll it back' from the 1980s. In some respects the post-1980 globalisation appears to have reintroduced some of the key characteristics of the pre-1914 globalisation to Britain and other western nations – high inequality, a small state, and greater economic instability (including the return of frequent financial crises). This, in turn, appears to have increased political instability (again paralleling the downfall of the previous globalisation), ranging from Brexit, Trumpism in the USA, and social unrest related to austerity, such as France's 'gilet jaunes' movement or the riots in Chile (both triggered by higher state-imposed transport costs). It is conceivable that such instability may eventually lead to a collapse of the current globalisation – paralleling world events during 1914 to the 1950s.

Appendix: The mathematical formula for the Gini coefficient

The Gini coefficient can be calculated as equivalent to the Lorenz curve at half the relative mean absolute difference (Sen, 1977). The mean absolute difference is the average absolute difference of pairs of items of the population, while the relative mean absolute difference is the mean absolute difference divided by the average ($\bar{x}$). If x_i is the income of person *i*, *j* is the income of person *j*, and there are *n* persons, then the Gini coefficient G is given by:

$$G = \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}|x_i - x_j|}{2\sum_{i=1}^{n}\sum_{i=1}^{n} x_j} = \frac{\sum_{i=1}^{n}\sum_{j=1}^{n}|x_i - x_j|}{2n^2\bar{x}}$$

Further reading

Useful studies of income and wealth inequality include Lindert (1991); Atkinson (2007); Alvaredo et. al. (2018); Atkinson and Jenkins (2019); Scott and Walker (2020); and, internationally, Atkinson, Piketty, and Saez (2011). Good sources for British living standards, inequality of opportunity, social mobility; and poverty include Routh (1980); Joshi et. al. (1985); Edgerton and Halsey (1993); McKibbin (1998); Heath and Payne (2000); Friedman et. al. (2017); Clark (2019) (for statistical data). Studies on the welfare state include Hill (1990); Johnson (2004); Slater (2012). For the debate on long-term causes of inequality changes over time, see Kuznets (1955); Atkinson, Piketty and Saez (2011); Piketty (2003); Atkinson (2007); Scott and Walker (2020).

Table 1: The distribution of pre-tax personal income in the UK, 1911-2014

Top income shares (%)	0.01	0.1	1.0	5	10	Bottom 90%
1911	4.60	13.81	30.15	44.97	n.a	n.a.
1919	3.32	8.98	19.48	31.44	37.21	62.79
1937	2.17	6.73	16.90	31.73	36.18	63.82
1949	1.06	3.00	11.42	23.38	32.33	67.67
1954	0.67	2.72	9.67	21.22	30.63	69.37
1959	0.60	2.30	8.60	20.26	29.96	70.04
1965	0.62	2.28	8.55	20.10	29.88	70.12
1970	0.42	1.64	7.05	18.65	28.82	71.18
1975	0.31	1.40	6.10	17.40	27.82	72.18
1981	n.a.	1.53	6.67	19.45	31.03	68.97
1985	n.a.	1.86	7.55	21.04	32.94	67.06
1990	n.a.	n.a.	9.80	24.43	36.90	63.10
1995	n.a.	3.24	10.75	25.80	38.51	61.49
2000	n.a.	4.64	12.67	27.04	38.43	61.57
2014	n.a.	5.48	13.88	28.53	39.99	60.01

Sources: 1911-1949, Scott and Walker (2020); 1954-2000, Atkinson (2007): 93-95; 2014 World Inequality Database (2019). Note that the data range for the 1911 estimate is close to the 5% share at 4.9% and estimated by extrapolation.

Table 2: The distribution of after-tax personal income, 1911-2000

Top income shares (%)	0.1	1	5	10	Bottom 90%
1911	12.15	27.93	42.24	n.a.	n.a.
1937	3.65	12.57	26.1	35.64	64.36
1949	1.23	6.76	18.75	28.75	71.25
1959	0.95	5.51	16.21	25.91	74.09
1970	0.73	4.83	15.33	25.27	74.73
1985	1.18	5.79	18.25	29.94	70.06
2000	3.50	10.03	23.09	34.31	65.69

Source: 1911, Scott and Walker (2020); 1937-2000, Atkinson (2007), 104-5. Note that the 5% interval for 1911 was within the data income range and is calculated directly.

Table 3: The distribution of personal wealth in the UK: 1895-2009

Year	Bottom 90%	Top 10%	Top 5%	Top 1%	Top 0.5%	Top 0.1%
1900	7.3	92.7	89.1	70.7	59.0	36.4
1910	8.1	91.9	87.8	68.8	57.8	37.3
1920	12.0	88.0	81.4	57.3	45.6	27.8
1925	11.8	88.2	82.0	60.3	50.5	33.8
1930	13.9	86.1	79.2	56.9	47.0	29.5
1935	14.1	85.9	78.2	54.0	43.6	25.8
1938	15.0	85.0	77.5	54.1	43.8	27.0
1946	16.5	83.5	72.7	46.1	36.1	19.3
1950	20.1	79.9	69.0	43.0	33.3	20.1
1955	24.7	75.3	62.2	37.9	28.9	15.8
1960	29.5	70.5	59.1	35.0	26.6	13.6
1965	31.8	68.2	55.2	30.9	23.0	10.6
1970	35.5	64.5	50.1	27.4	20.2	9.9
1975	41.3	58.7	44.0	22.1	16.1	7.1
1980	47.9	52.1	38.3	18.8	13.8	6.6
1985	51.3	48.7	35.2	15.8	10.9	4.6
1990	54.0	46.0	33.8	16.3	12.0	5.9
1995	53.1	46.9	34.6	16.2	11.6	5.4
2000	49.4	50.6	38.1	18.5	13.4	5.9
2009	46.0	54.0	40.3	20.6	15.6	8.2

Source: Alvaredo et. al. (2018), online Appendix Table G1.

Table 4: Public expenditure on education, health, and pensions, for Britain and four other western nations from the early twentieth century to 2013 (% of GDP)

Education	1913	1930s	1960	1980	1993-4	2013
UK	1.1	4.0	4.3	5.6	5.4	5.2
France	1.5	1.3	2.4	5.0	5.8	4.7
Germany	2.7	n.a.	2.9	4.7	4.8	3.7
Sweden	n.a.	n.a.	5.1	9.0	8.4	5.2
USA	**1.5**	**3.1**	4.0	**5.3**	5.5	4.2
Health	c. 1910	1930s	1960	1980	1993-4	2013
UK	0.3	0.6	3.3	5.2	5.8	7.8
France	0.3	0.3	2.5	6.1	7.6	8.7
Germany	0.5	0.7	3.2	6.5	7.0	9.2
Sweden	0.3	0.9	3.4	8.8	6.4	9.2
USA	0.3	0.3	1.3	4.1	6.3	7.9
Pensions	1920	1930s	1960	1980	1993-4	2013
UK	2.2	1.0	4.0	5.9	7.3	6.1
France	1.6	n.a.	6.0	10.5	12.3	13.8
Germany	2.1	n.a.	9.7	12.8	12.4	10.1
Sweden	0.5	n.a.	4.4	9.9	12.8	7.7
USA	0.7	n.a.	4.1	7.0	7.5	7.0

Sources: Education, USA, 1913, 1930s, 2005 and 2017, US spending from 1900 dataset, (2019); education, 2013, OECD (2019a); health, 2013, OECD (2019d); pensions, 2013, OECD (2019b). All other data, (Tanzi and Schuknecht, 2000: 43-41).

Figure 1: A graphical portrayal of the Gini coefficient

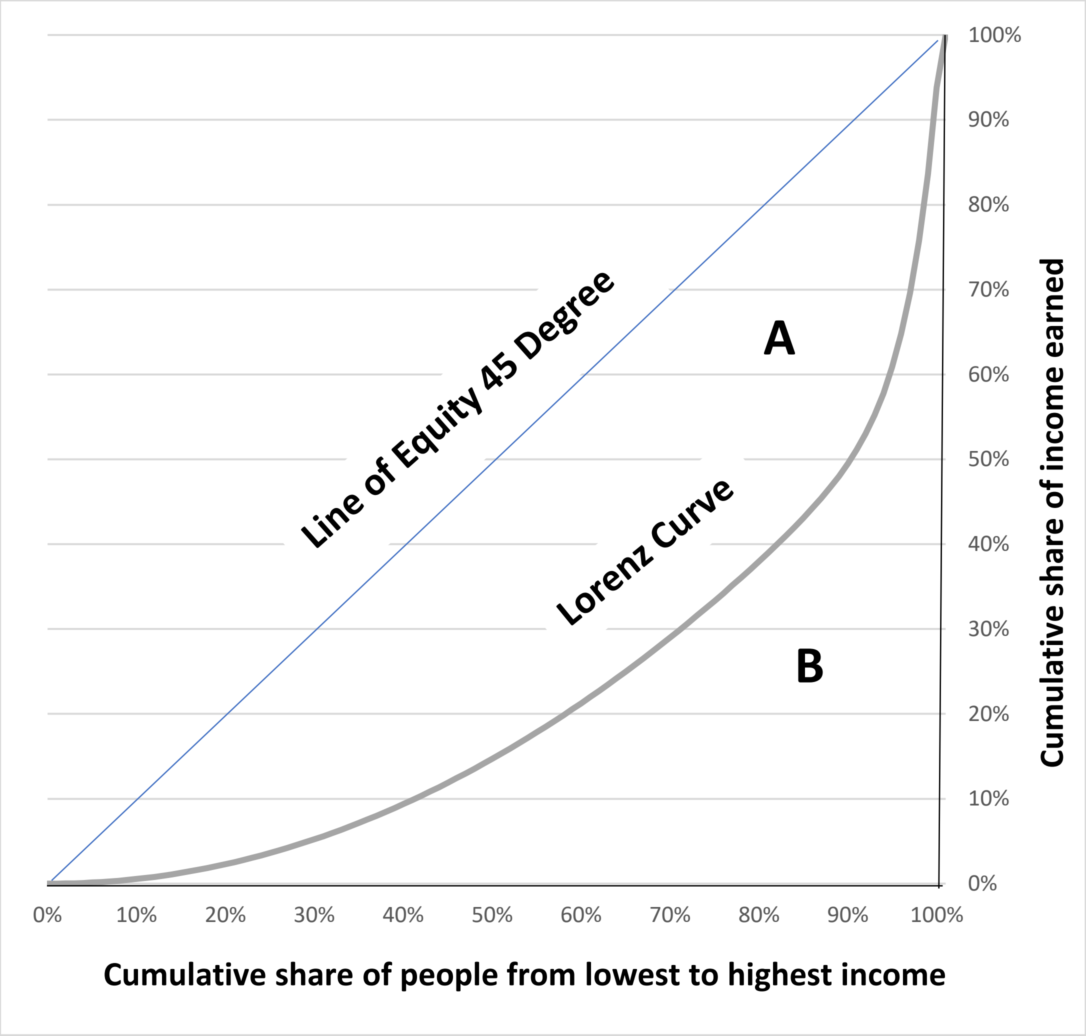
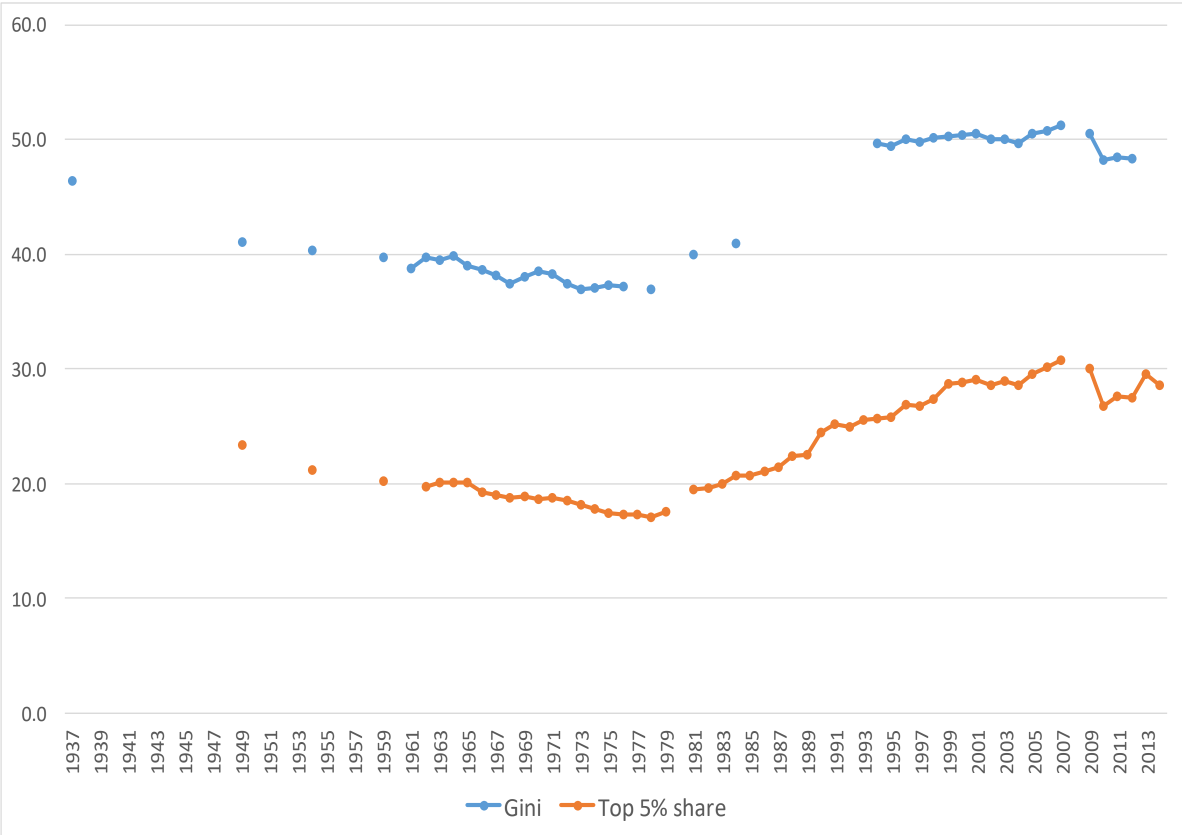


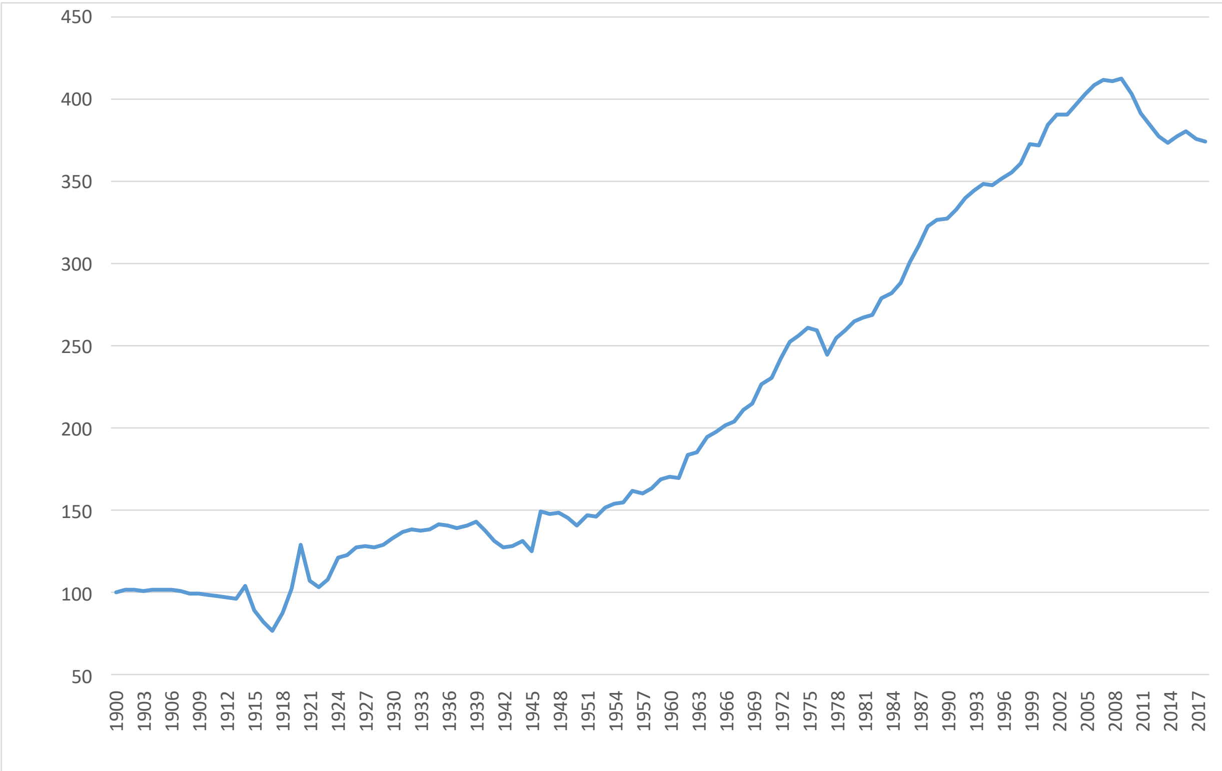
Figure 2: A linked series for the UK Gini coefficient for income, together with the income share of the top 5 percent



Source: Atkinson and Jenkins (2020: 263).

Notes: Atkinson and Jenkins' preferred series; for gross (pre-tax) incomes. For convenience the Gini is shown as a percentage, rather than a fraction of 1.

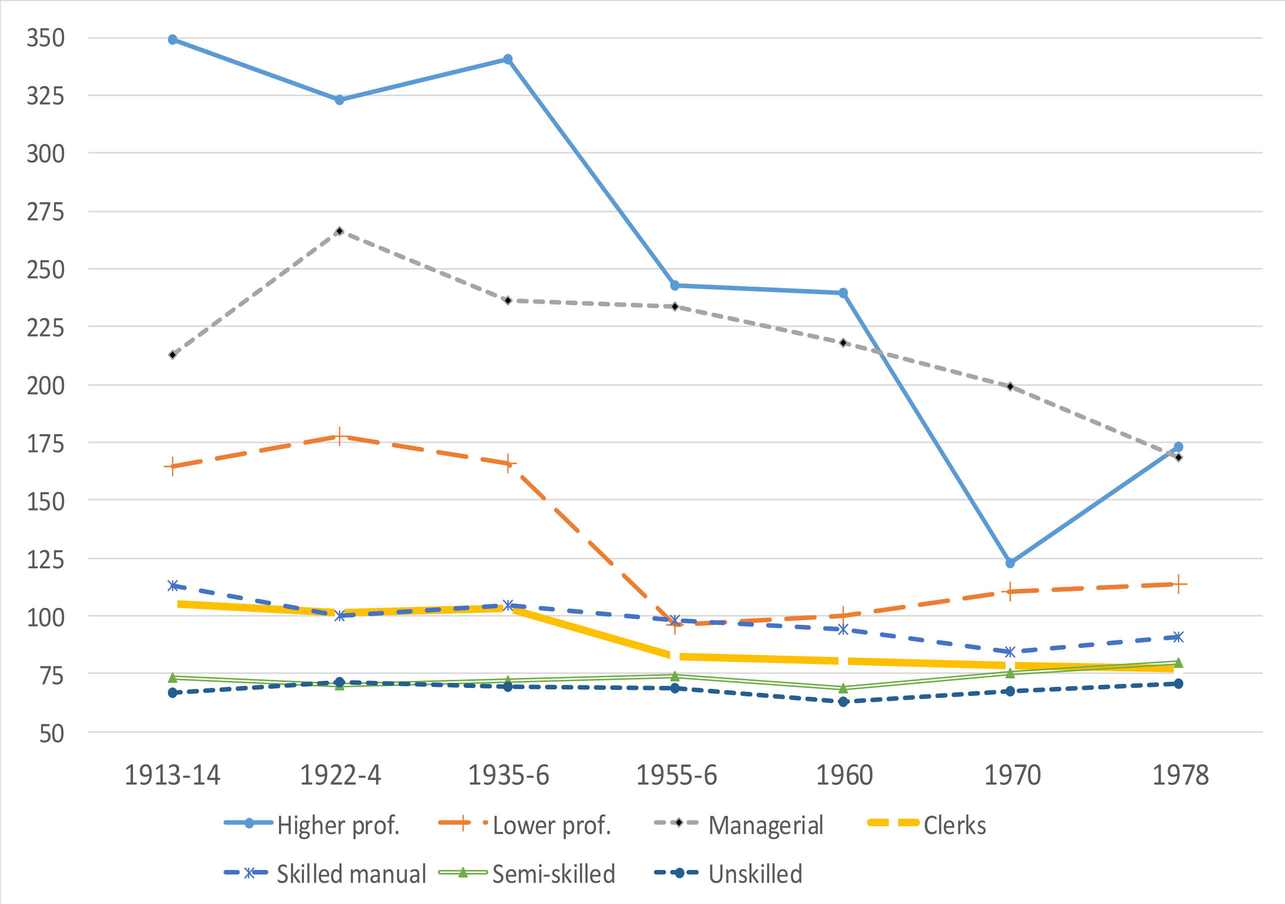
Figure 3: Average real pre-tax earnings in the UK (in 2010 £'s), 1900 – 2018



Source: (Clark, 2019).

Notes: Deflated by the Retail Price Index.

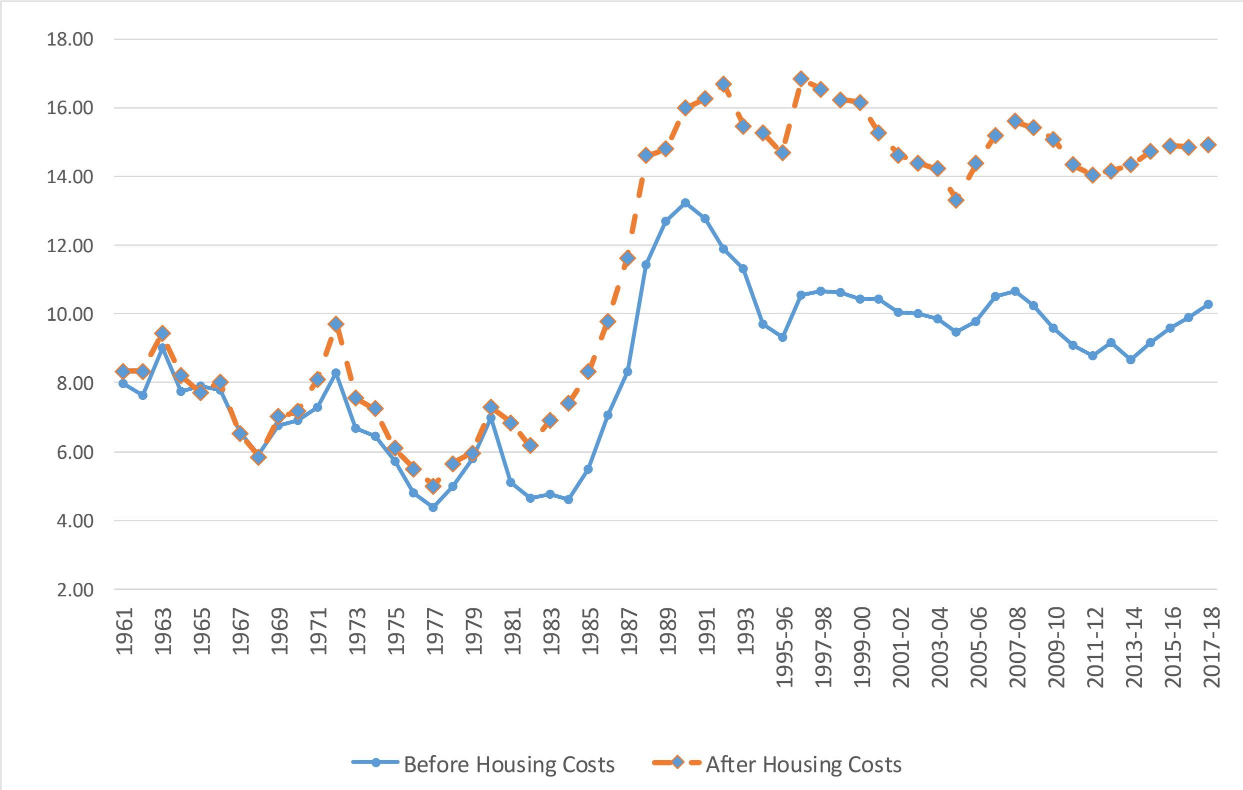
Figure 4: Earnings of adult male British higher professionals, lower professionals, managerial workers, clerks, and skilled, semi-skilled, and unskilled manual workers, relative to mean adult male earnings, 1913-14 to 1978



Source: (Routh, 1980: 120-121).

Notes: Mean income is the mean for seven occupational groups, including foreman (who are not shown in the graph) based on current weights for numbers of employees, for the nearest population census year.

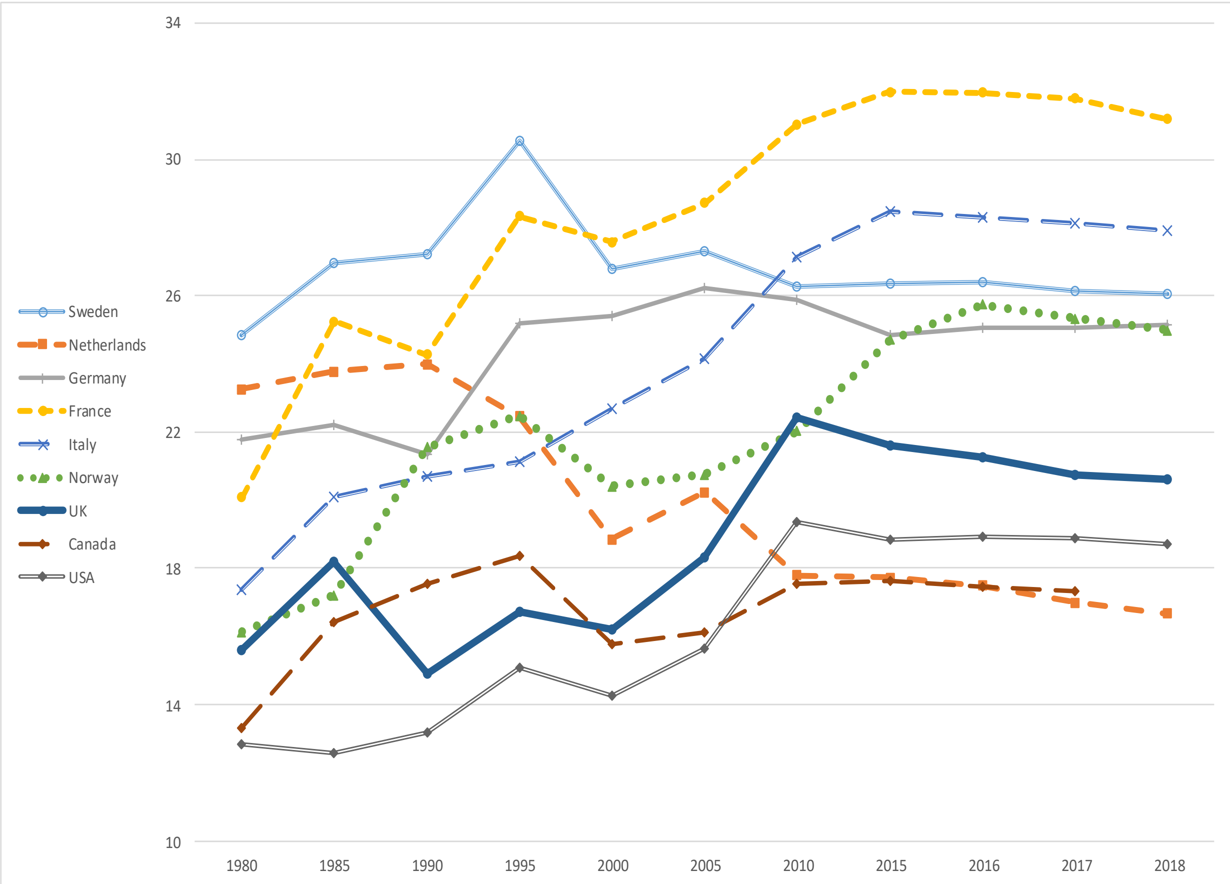
Figure 5: Relative poverty rates before and after housing costs, 1961 – 2017/18



Source: (Institute for Fiscal Studies, 2019).

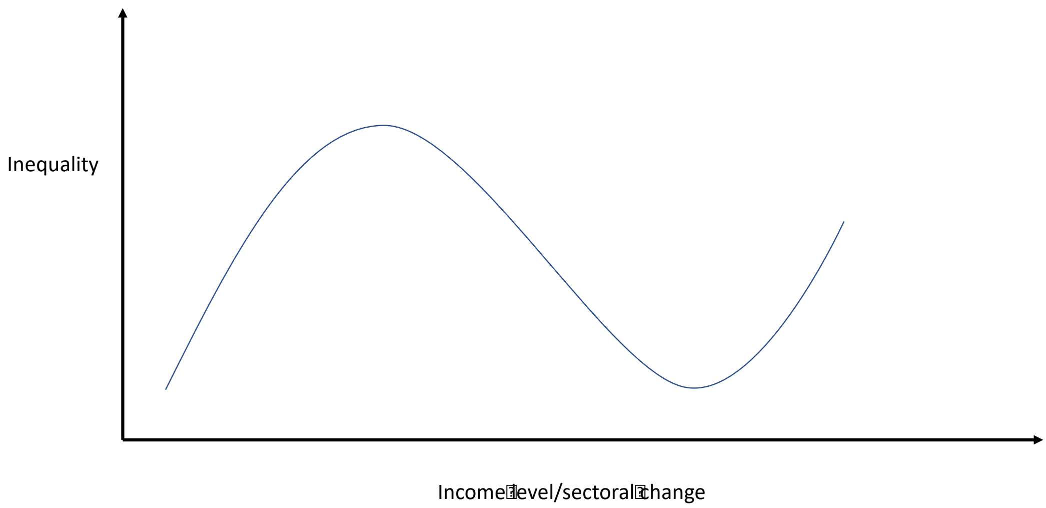
Notes: Based on 50 percent of the contemporary medium income. Data from 1961 to 2001-02 are for Great Britain and subsequent data are for the UK.

Figure 6: Public social expenditure as a percent of GDP, UK and eight other western nations



Source: (OECD, 2019).

Figure 7: The augmented Kuznets curve, showing the first wave and the start of the second



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