



Institute for Fiscal Studies

Country Studies: Inequalities in Europe and North America
A parallel study to the IFS Deaton Review

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Inequality in the UK: 1968-2021



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1. Executive summary

Employment, wages, hours and individual earnings

The UK has seen a sustained rise in employment rates among prime working-age (25–60-year-old) women over the last four decades, from 54% in 1968 to 78% in 2019. The employment rate for men, which fell over the 1970s and 1980s as the economy deindustrialised, has also been on the rise over the past decade, approaching 90% in 2019, but is still slightly below the levels seen in the early 1970s. Increases in the compulsory school leaving age and the expansion of higher education have led to a large rise in educational attainment for both men and women. In 2021, 39% of prime working-aged people had high levels of education (ISCED 6–8), and just 4% had low levels of education (ISCED 0–2).

Median real hourly wages for employees rose by around 2.3% a year on average between 1968 and 2007 but stagnated after the Great Recession. This stagnation is seen across all education groups, and cannot be explained by rising employment rates and selection into employment (Blundell et al. 2018). Median wages exceeded pre-2008 levels for the first time in 2020.

Inequality in hourly wages increased substantially in the 1980s. Since then, wage inequality across most of the distribution has stabilised, as measured by the 90:10 ratio (the Gini coefficient continued to rise due to rising wages at the top, albeit at a much slower rate than in the 1980s). The relative stability of overall wage inequality masks a sustained rise in male wage inequality up until the Great Recession: the 90:10 ratio of male wages rose from 2.8 in 1980 to 3.6 in 1994 and 3.8 in 2007. This was offset by women's wages catching up with men's wages on average, as well as some fall in wage inequality among women. Since the Great Recession, and in particular since 2016, wage inequality has fallen for both men and women in part as a result of large increases in the minimum wage. Average hours worked among employees have increased for women, and fallen gradually for men, since the mid-1990s. The increase in hours worked for women was seen across the wage distribution. For men, the fall in hours worked was concentrated among low-wage, low-educated men, up until the Great Recession.

Combining trends in hourly wages and hours worked, inequality in individual earnings has been relatively stable over the last 25 years. But inequality in male earnings rose between 1980 and the Great Recession, driven by rising wage inequality at the top and rising hours inequality at the bottom. This trend appears to have stopped in the last decade, as growth in the minimum wage outstripped wage growth further up the distribution, and hours worked stopped falling disproportionately for low-wage men. Further, the rise in employment rates means that earnings inequality across all prime working-aged people, including those out of work (with zero earnings), has fallen over the past decade.

Labour market institutions

There has been a dramatic decline in collective bargaining in the UK, with union density falling from its peak of 52% in 1980 to 24% in 2019. A minimum wage was introduced in 1999 and its bite has increased over time, especially since 2016. The minimum wage does not cover self-employed workers, and self-employment has become much more prevalent over the last four decades, especially among those on low hourly wages. The share of prime working-aged people who are self-employed rose from 6% in 1980 to 9% in 1990 and 10% in 2019. In recent years (when data are available), there has been a rise in 'solo self-employment' and a fall in the share of people who are self-employed with employees. The UK social security system is unusual by European standards in having virtually no contributory component. Instead, entitlement to most benefits is means-tested and depends on financial need (e.g., due to having a combination of low income, high housing costs, and a number of children) rather than previous earnings. As such, replacement rates vary widely depending on previous pay and circumstances, and there is no distinction between short-term and long-term replacement rates. There have been large

changes to the welfare system in the UK, including a large expansion of state benefits in the late 1990s and early 2000s and retrenchment in their generosity after 2011.

Household incomes

Two key factors affect the way in which inequality in individual earnings translates into inequality in household incomes: household structures and the tax and benefit system. There has been a rise in assortative matching in marriage and partnership in the UK over the past four decades. First, the relationship between individual earnings and the likelihood of being in a couple is now more strongly positive than before. The share of prime working-aged people who are single has increased much more in lower-educated groups. Second, high-earning individuals are now more likely to have a partner who works than before. In 1968, men around the 95th percentile of earnings were 10 percentage points less likely to have a working partner than those in the 15th percentile of earnings (though they were more likely to have a partner at all), while in 2019 they were 8 percentage points more likely. Third, for couples in which both partners are in paid work, the positive correlation between partners' earnings is now stronger than before. The rise in assortative matching means that the catch-up of women with men over the last four decades has largely reduced earnings inequality within, rather than across, households. Coupled with the rise in male earnings inequality, which remains the largest source of household earnings, the result is that inequality in earnings among working households rose up until the Great Recession, especially in the 1980s.

The tax and benefit system somewhat dampened the rise in household earnings inequality in the 1980s, but the effect was far from complete: between 1980 and 1994, disposable household incomes among working households rose by an average of 3.7% a year at the 95th percentile of household incomes, compared to just 0.9% at the 5th percentile (the corresponding figures for household earnings were -1.7% and 4.2%, respectively). Further, the fall in male employment rates over this period meant that more people lived in workless households, pushing up household earnings inequality across all households (including workless households). As result, inequality in disposable household incomes rose sharply in the 1980s: the Gini coefficient rose from 0.26 in 1980 to 0.33 in 1994, and the 90:10 ratio rose from 3.2 to 4.1. In contrast, the expansion of state benefits in the late 1990s and early 2000s entirely offset the rise in earnings inequality among working households in the decade before the Great Recession. State transfers propped up incomes at the bottom, so that the growth in disposable household incomes between 1994 and 2007 was similar across the income distribution (around 2.3% a year on average). Further, the rise in employment rates from the mid-1990s meant that more households had someone in work, reducing earnings inequality across all households. Taken together, inequality in disposable household incomes across all households was relatively stable between the mid-1990s and the Great Recession.

Inequality in disposable household incomes has also been stable since the Great Recession (since 2007), offsetting slightly increasing household earnings inequality, but the underlying drivers have been very different. Household earnings growth has been broadly progressive, especially since 2016, as wage inequality fell and trends in male hours also worked to reduce earnings inequality. However, a series of cuts to working-age benefits after 2011 meant that growth in disposable household incomes at the bottom of the distribution was lower than growth in household earnings. While the tax and benefit system offset rising earnings inequality in the decade leading up to the Great Recession, fiscal austerity pushed in the opposite direction in the last decade, offsetting declines in household earnings inequality.

Immigration has changed the composition of the UK population in recent decades. The fraction of the working-age population that was born abroad rose from 9% in 1993 to 15% in 2008 to 21% in 2021. Immigrants in 2008 were particularly clustered towards the bottom, and top, of the income distribution, but by 2019 this had changed and they were much more evenly spread across the population. On average, immigrants have very high education levels and similar labour market outcomes to UK born people, with the exception of lower levels of female employment.

2. Institutional background

The UK has a population of 67 million people, with a population and total GDP similar to France. Its economy is dominated by services, with comparative advantages in finance, business services, higher education, and pharmaceuticals among other industries. London and southern England are particularly prosperous in comparison to poorer parts of the country such as northern England, Wales and Northern Ireland. Institutionally, the UK is a highly centralised country, though to different degrees; Scotland, Wales and Northern Ireland have their own devolved assemblies/parliaments with powers over state education and health in particular.

The UK has a sizeable working-age benefits system providing support for those who are unemployed, those on low incomes, those with children, and those with sickness and disability. Until 2016, social security was organised by the UK central government for Great Britain (England, Scotland and Wales), with a separate system for Northern Ireland, though since then there has been devolution of some social security to Scotland. Spending on working-age benefits was equivalent to around 4.5% of national income just before COVID.² Most state benefits are not taxable (with exceptions including contribution-based benefits for the unemployed, and the state pension).

The UK has limited unemployment benefits compared to other OECD countries. Benefits for the unemployed are not based on previous earnings and are tied to undertaking job search. They are administered either through the means-tested benefits system, or through flat-rate contributions-based support for those who do not qualify for means-tested support, which is time-limited and requires claimants to have been working and paying National Insurance (a payroll tax) previously.

There is therefore significant variability in 'earnings replacement rates' upon becoming unemployed, depending on factors affecting eligibility for means-tested benefits, including housing (renters receive more), family size and health status. But a single childless worker on average earnings will have just 13% of their income replaced by benefits if they fall out of work.³ Real levels of unemployment benefits for families without children have been broadly unchanged for decades. By contrast, support for families with children has roughly doubled since 1975.

Households with people in paid work, but on low incomes, are also eligible for state financial support, which again varies considerably by factors such as those listed above. The benefits system has become more focused on in-work families in recent decades.⁴ Households with children receive greater state financial support than those without. One component of this, Child Benefit, is available to around three-quarters of families with children, and before 2013 was universally available.⁵ Benefits are also available to individuals who are disabled or long-term sick. The system is complicated, and includes means-tested support, flat-rate support for those who fail the means test but have previously worked and paid National Insurance contributions, and support for the costs incurred because of disability, which is available regardless of income or work status. Starting in the early 2010s, most – but not all – of the benefits paid to low-income families have been integrated into one single benefit called Universal Credit.

The UK has a state pension system which provides pension benefits from claiming until death. It is claimable from the state pension age, which was 60 for women until 2010 and 65 for men until 2018. Increases to this age for men and women mean it is now claimable from age 66, rising to 67 by 2028. The state pension system increasingly focuses on providing a flat-rate state pension for

² <https://ifs.org.uk/inequality/benefits-and-tax-credits/>

³ <https://ifs.org.uk/books/temporary-benefit-increases-beyond-2020-21>

⁴ <https://ifs.org.uk/inequality/benefits-and-tax-credits/>

⁵ <https://ifs.org.uk/publications/reforms-roll-outs-and-freezes-tax-and-benefit-system>

all people with 35 qualifying years. Qualifying years are years in which people either: earn above a low threshold (currently around £6,000); are out of work looking after young children; or are in receipt of certain state benefits).⁶ There is also a large system of private pensions which supplement state pensions for many. A full new state pension (available to someone with 35 or more qualifying years) for a newly retired person is worth 29% of median full-time earnings. Since 2012, most employees are automatically enrolled into private pensions schemes, generally defined benefit schemes in the public sector and generally defined contribution schemes in the private sector.

Healthcare in the UK is publicly provided by the National Health Service (NHS), run by central government and the national governments of Wales, Scotland and Northern Ireland. This is largely free at the point of use and funded by general taxation, with limited co-payments for dental care and prescription medicine. A private healthcare system and private health insurance are available alongside the NHS, but it is impossible to opt out of contributing to the public system through taxation.

Education for children is also largely provided and funded by the state, and is free for all children aged 4 to 18. Again, a private system funded by fees does exist which provides for a small minority of students, but it is not possible to opt out of paying for the state system. State-funded schools are controlled by a mixture of local government, not-for-profit trusts, and religious organisations. In most areas of the UK (except for Northern Ireland and some counties in England) there is no widespread academic selection for entry into secondary school (at age 11), but there is frequently academic selection into the final two years of secondary education. Increasingly state-funded schools are 'academies' which are not-for-profit trusts, outside the direct control of local government (though local government generally coordinates primary and secondary school applications).

University entrance at age 18 is very common, with a high number of prestigious universities in the UK as well as many less well-known institutions. Universities are not part of the public sector, but there are regulated (maximum) fees for undergraduates, along with an income-based student loan repayment system, which has seen a large number of changes in the last two decades. The UK has a less well-developed system of vocational education through 'further education colleges' and through apprenticeships, although reform to the latter has made it a more popular route for the most intensive ('degree-level') apprenticeships, growing fast from a very low base.

The main taxes on personal incomes are income tax (which taxes individual income from all sources, except capital gains and benefits), and National Insurance (payable by employees and their employers on their earnings, as well as by self-employed people). Scotland can, and does, set different income tax rates. Income taxes for high earners fell dramatically during the 1980s, though there have been rises in marginal and average tax rates for higher earners since 2010, with additional complications to the system. The main taxes on consumption are value-added tax (VAT), as well as various excise duties (such as fuel and alcohol duties). The other main personal tax is council tax, which is based on property value and is paid to local rather than national government. Income tax and National Insurance account for almost half of tax revenues, and together with VAT for around two-thirds. Local taxes constitute only a small proportion of overall tax revenue. The income tax system is progressive, while consumption taxes are broadly distributionally neutral. Local taxes (which are linked to property values) are regressive, but the personal tax system as a whole remains progressive.⁷

⁶ For more details, see <https://www.gov.uk/new-state-pension>

⁷ <https://ifs.org.uk/news/tax-system-reduces-inequality-benefits-do-most-heavy-lifting>

3. Notes on measurement and definitions

Unit of analysis and sample:

- The sample is individuals aged between 25 and 60 inclusive, except where otherwise indicated. For figures on wages and earnings, the sample is further restricted to individuals (or households where applicable) with strictly positive wages or earnings, respectively. There are no further restrictions for the household income figures.
- Individuals are the unit of analysis throughout. For example, for equivalised household income, each individual is allocated their respective equivalised household income, so that income is counted as many times as there are individuals aged 25–60 in the household.
- In the figure where we winsorise, we allocate all observations above the 99th percentile the amount equal to the 99th percentile. Otherwise, distributions are not trimmed.

Outcome definitions:

- **Employment rate:** the fraction of the population that is employed according to self-reported employment status.
- **Earnings:** gross annual real individual earnings (includes self-employed), among those who are employed and have strictly positive real earnings.
 - If an employee has multiple jobs, earnings from all jobs are summed together.
 - Most figures include employee taxes but *not* employer taxes, pension contributions or other contributions (e.g. health insurance). A few figures explicitly compare trends in gross earnings with and without employer taxes.
 - The period to which earnings data refer will vary across countries. In the UK, the data are obtained as follows:
 - Information on employee earnings is obtained by asking respondents the amount they were paid on the pay date closest to the interview. These (plus bonuses received over the last 12 months) are converted into nominal weekly amounts which we 'mechanically' annualise by multiplying by 365/52.
 - Self-employed respondents are asked questions on their most recent business accounts as submitted to HM Revenue and Customs (HMRC) – dates of the accounts, profit or loss figures, tax and National Insurance amounts. They are then asked if they draw money from their business accounts for non-business purposes, such as for payments to themselves, personal spending, paying domestic bills etc. and how much this is per month on average. They are also asked if they receive other income from their business for personal use (e.g., cash in hand), and how much this is per month on average.
 - Those who do not keep annual business accounts and do not draw money for non-business purposes are asked for their income after paying for materials, equipment, goods etc. and whether they make tax and National Insurance payments on this amount.
 - Our data (the Family Resource Survey (FRS)) do not fully capture information on all types of income in kind accurately – for example, benefits of vehicles, computers and mobile phones purchased by the business that are also for

personal use. And these benefits are likely to be more important for the self-employed than for employees. Therefore, the FRS earnings measures are likely to underestimate the true monetary and other benefits of self-employment. However, it is very difficult to quantify this.

- Nominal earnings are converted into real terms in calendar year 2019 or financial year 2019–20 prices, using the Consumer Prices Index (CPI).
- **Hours of work:** usual/ typical paid hours worked per week, among those who are employed and have strictly positive real earnings. Excludes self-employed workers.
- **Wages:** individual real gross hourly wages (weekly gross employee earnings divided by weekly hours worked as defined above). Excludes self-employed workers. We convert nominal wages into real terms in calendar year 2019 or financial year 2019–20 prices, using the CPI.
- **Disposable household income (household equivalised income after deducting taxes and adding benefits and tax credits):**
 - The main measure of household income used in this report is income after direct taxes and transfers have been deducted from or added to household income.
 - Income includes: usual net earnings from employment, profit or loss from self-employment, state support (all benefits and tax credits), income from occupational and private pensions, investment income, maintenance payments, income from educational grants and scholarships, cash value of forms of income in kind (such as free school meals).
 - Income is net of: income tax payment, National Insurance contributions, local (council) tax, contributions to occupational pensions schemes, all maintenance and child support payments, parental contributions to students living away from home, student loan repayments.
 - Incomes are equivalised using the modified OECD equivalence scale, normalised to a single individual.

Splits:

- **Sex:** female, male
- **Education:** We split education levels into three groups, based on age on leaving education, which approximately map onto International Standard Classification of Education (ISCED) groups as follows:

Age on leaving education	ISCED	Group
15 or younger	ISCED 0–2	Low
16–19 inclusive	ISECD 3–5	Medium
20 or older	ISCED 6–8	High

- **Household type:** Single without dependent children; single with dependent children; couples without dependent children; couples with dependent children; adult child; other. Parents of adult children go in the 'other' category. A dependent child is a child aged 0–17.

4. Individual employment and earnings

This section looks at trends in individual employment and earnings. With respect to earnings, we first look separately at hourly wages and hours worked, before bringing them together in a set of charts on earnings inequality. Due to a lack of reliable data on hours worked for the self-employed in the UK, we restrict the analysis of wages and hours to employees, but include both employees and the self-employed in the analysis on total earnings.

4.1 Trends in employment

Figure 1 shows that since 1968, the UK has seen a steady and sustained rise in the employment rate for prime working-age women (aged 25–60), with particularly fast growth over the 1970s and 1980s. By 2019, the female employment rate stood at 77%. There has also been fast growth in employment for older women (aged 61–74) since the mid-1990s, which in recent years in part reflects increases to the state pension age.

For prime working-age men, the employment rate has also been rising gradually over the last decade, following a period of stability in the 1990s and early 2000s, and decline during the deindustrialisation of the 1970s, 1980s and early 1990s. But at 88% in 2019, it was still below levels seen in the 1970s. For older men, the trend was similar, with an even more drastic decline in the 1970s and 1980s. Employment rates among young people (aged 16–24) have declined for both men and women since the 1968, due to increases in the school leaving age and an expansion of higher education. Since the pandemic, there have been falls in employment rates of most of the groups shown in Figure 1, particularly of younger adults who have remained in formal education in greater numbers, thereby delaying their entry to the labour market.

Figure 1. Employment rates by age and sex, over time

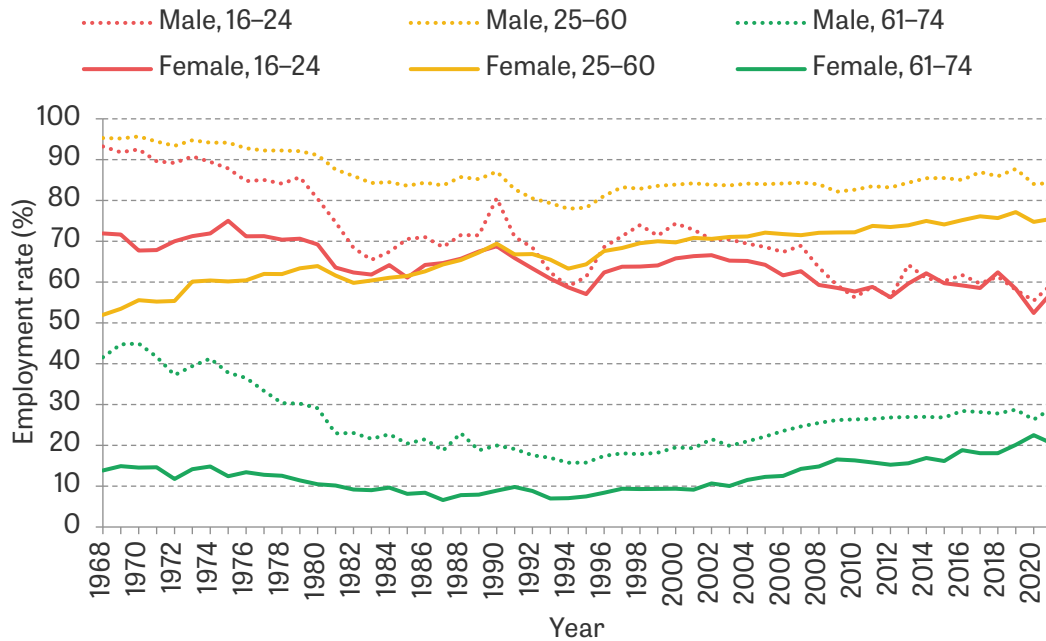
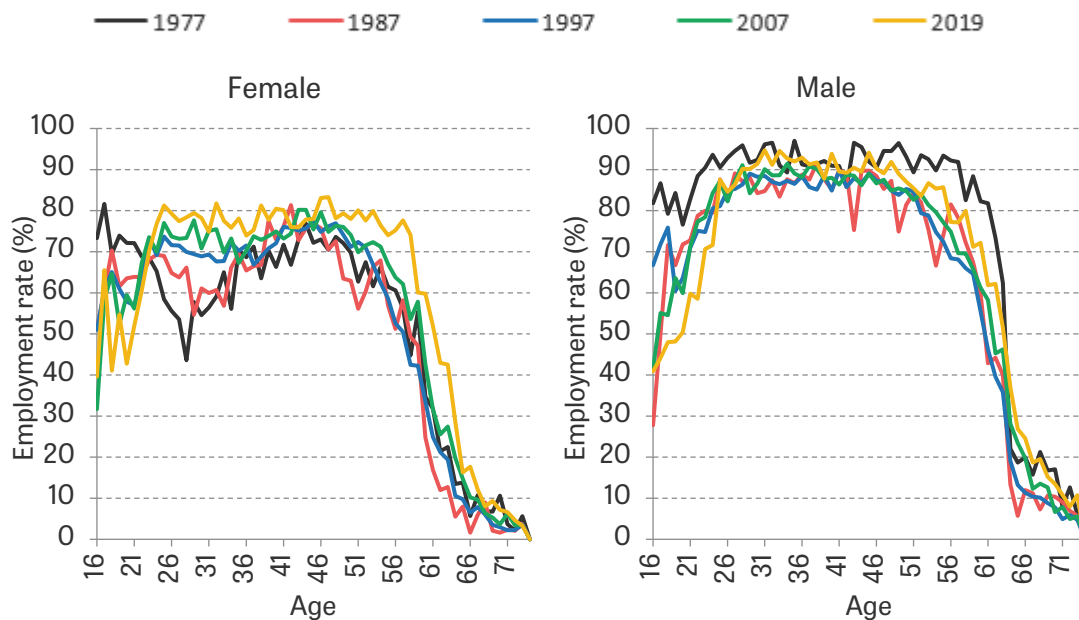


Figure 2 shows that the fall in male employment rates since the late 1970s was largest at young and older ages. By contrast, for men in their 30s and 40s employment rates in 2019 were fairly similar to 1977. Employment rates for women in their 20s and 30s (their prime childbearing years) rose steadily over the decades, so that in 2019 women were as likely to be employed at these ages as in their 40s. Between 2007 and 2019, female employment at older ages rose sharply as result of gradual increases to the female state pension age.

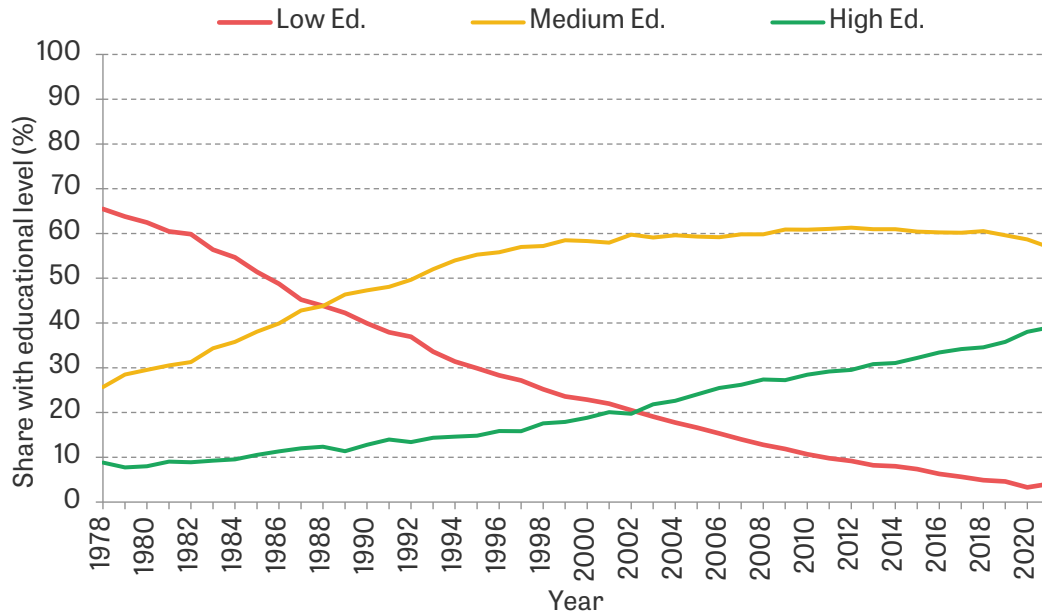
Figure 2. Employment rates over life cycle by sex, selected years



We now focus on individuals in their prime working years (aged 25 to 60). Since the 1970s, there has been a significant expansion of education in the UK. The school leaving age was raised to 16 in 1972, and children were required to remain in some form of education or training until 17 from 2013 and 18 from 2015. There has also been a significant expansion of higher education over a long period. As a consequence of this, educational attainment has increased significantly, as shown in Figure 3, with 36% of people having a degree or higher as of 2019 (ISCED 6–8), up from

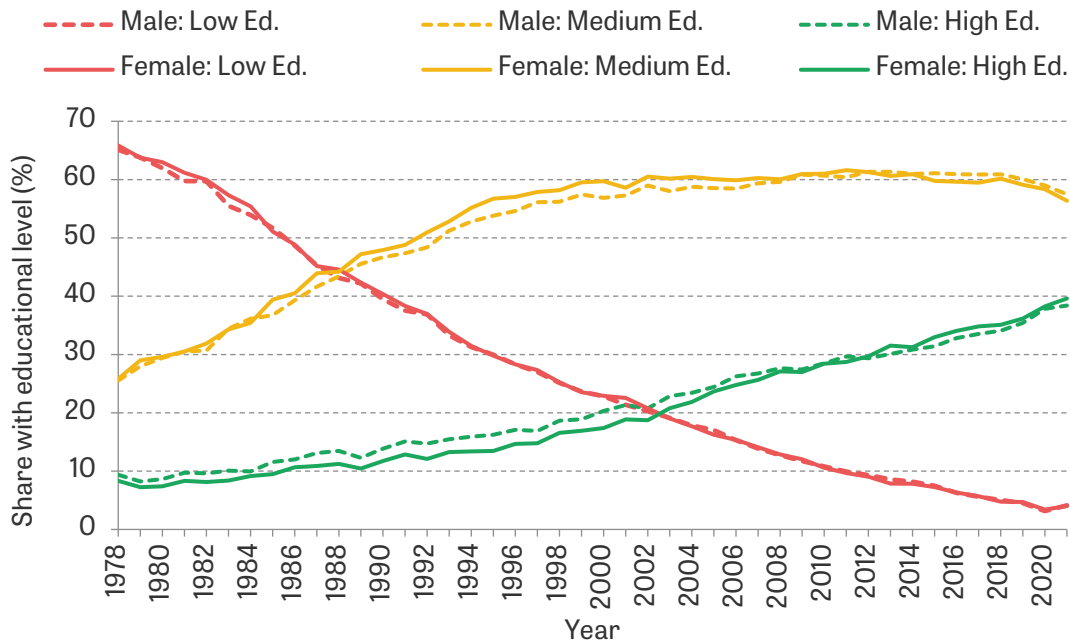
15% in 1994 and 9% in 1978. These trends have been very similar for both men and women (Figure 4), explaining the fall in employment rates for both sexes at younger ages seen above. The number with little or no education has declined drastically over the same period, and stood at only 5% in 2019.

Figure 3. Educational attainment over time



Note: Sample is individuals aged 25–60.

Figure 4. Educational attainment by sex, over time



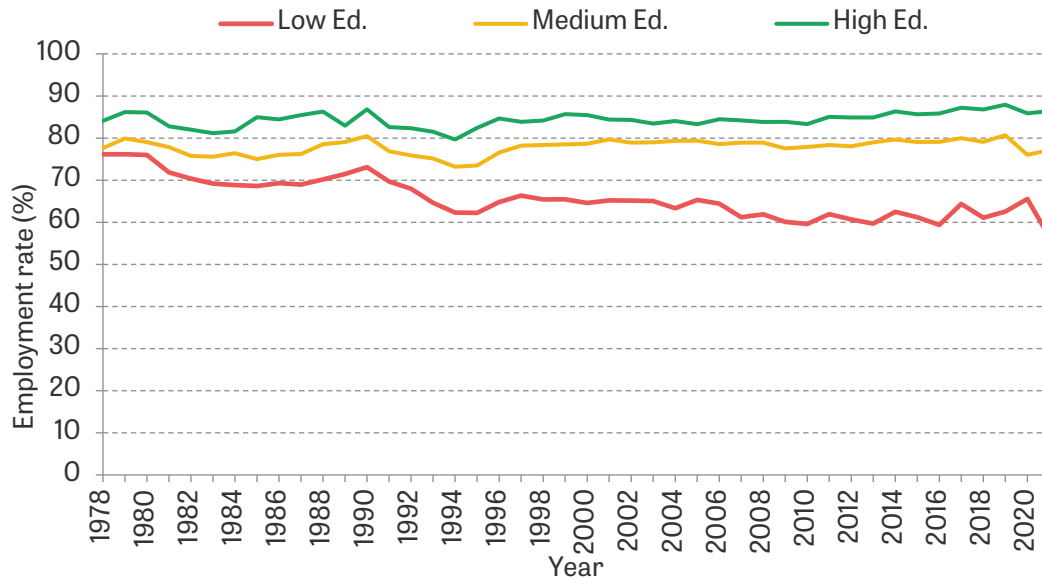
Note: Sample is individuals aged 25–60.

Figure 5 shows how trends in employment have differed by educational background. Employment has risen for those with mid-level education and degree qualifications since the mid-1990s, and was similar to its 1978 level in 2019, whereas it decreased for those with low-level or no qualifications (which is increasingly negatively selected). Falls in employment during the

pandemic were particularly concentrated among people with degree-level education (see Blundell et al. 2022 for more details).

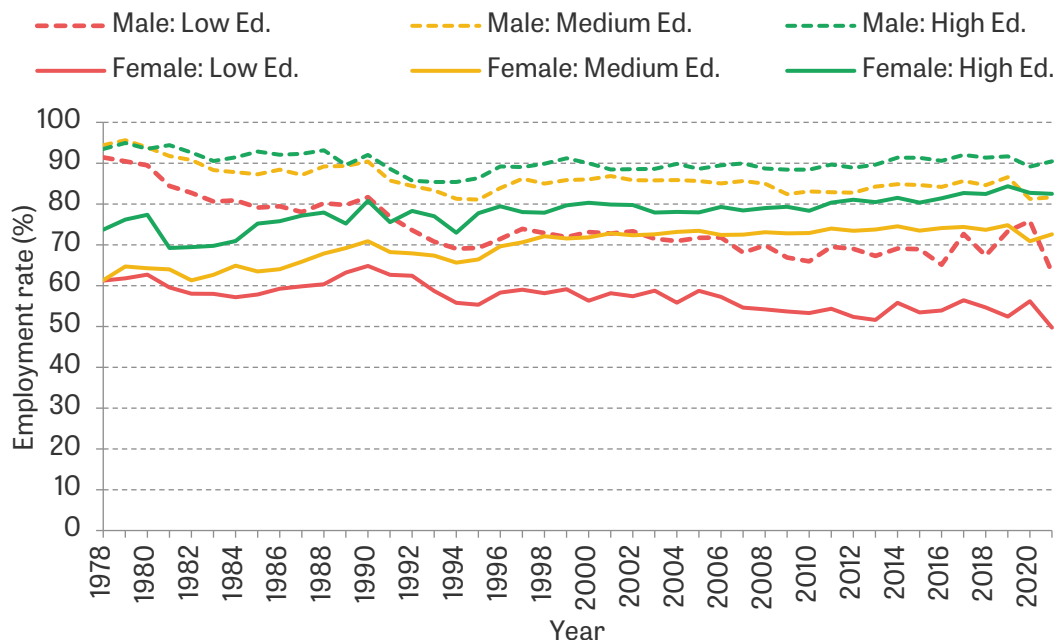
The trends differ somewhat by sex, as seen in Figure 6. Male employment rates have decreased for every education group since 1978, albeit from very high levels, and have been fairly flat since the mid-1990s, while female employment rates have risen gradually over time in all but the lowest education group.

Figure 5. Employment rates by education, over time



Note: Sample is individuals aged 25–60.

Figure 6. Employment rates by sex and education, over time

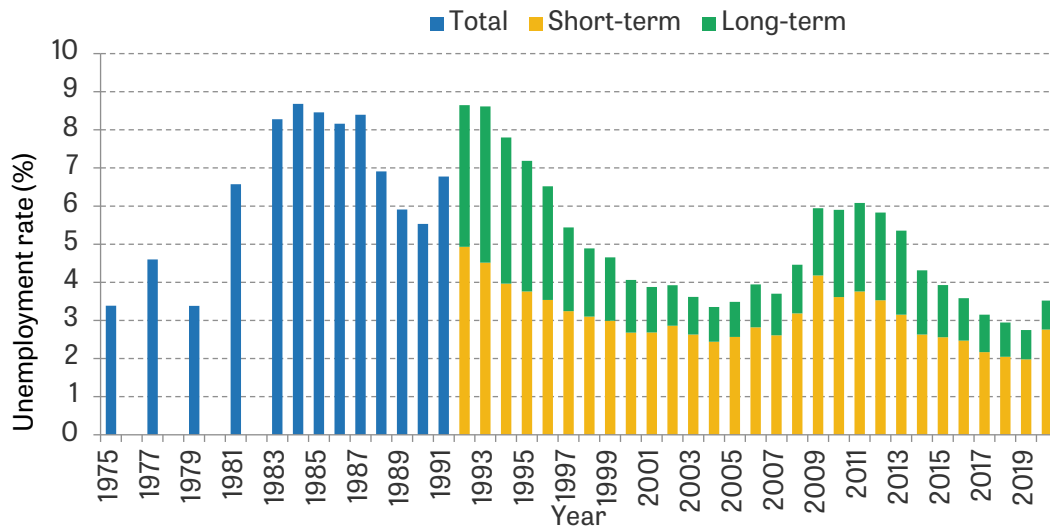


Note: Sample is individuals aged 25–60.

Figure 7 shows the large variation in the unemployment rate over time, since the early 1990s, split into whether it was long-term (over 12 months) or short-term (up to and including 12 months). The unemployment rate spiked in the deep 1980s recession, and during the milder (in terms of fall in GDP) early 1990s recession. It then fell considerably during the late 1990s and early 2000s,

before rising substantially in the Great Recession. As the UK recovered from the Great Recession, unemployment fell rapidly and at under 3% in 2019 was low by historical standards. The COVID-19 pandemic created a short spike in unemployment, but which was very low compared to the scale of economic disruption (see Cribb and Johnson 2023). Since 2000, roughly a third of unemployed workers were long-term unemployed, defined as having been unemployed for more than a year. This is down from around half of unemployed workers in the mid-1990s.

Figure 7. Unemployment rate by duration of unemployment over time



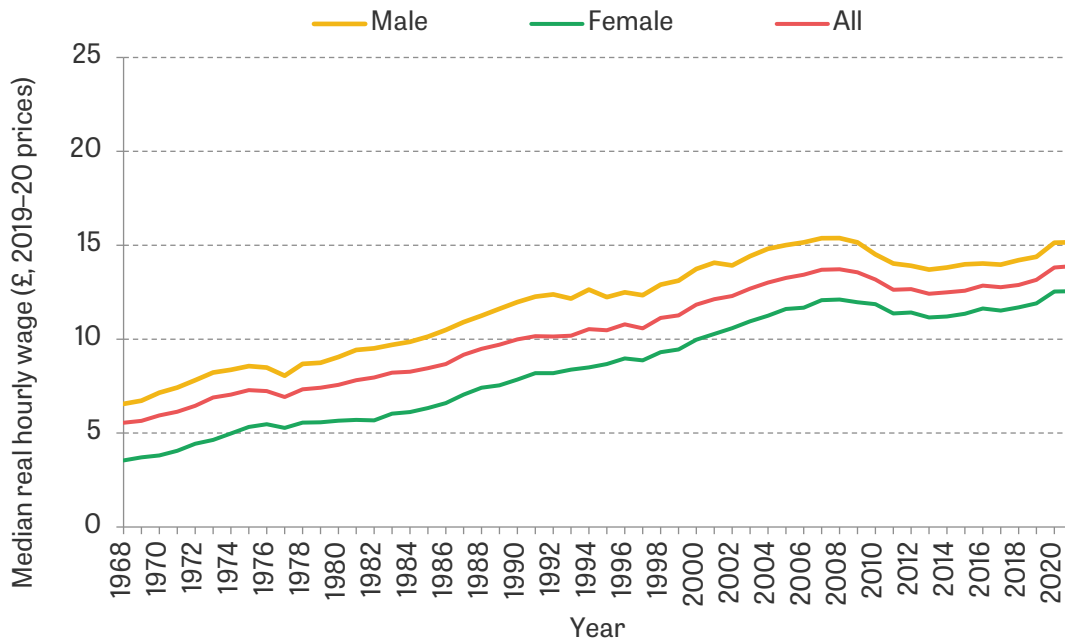
Note: Sample is individuals aged 25–60. Unemployment rate is calculated as the fraction of labour force aged 25–60, split between short-term (up to 1 year) and long-term (over 1 year) duration of unemployment.

Source: Authors' calculations using the Labour Force Survey, 1975 to 2020.

4.2 Trends in hourly wages (employees only)

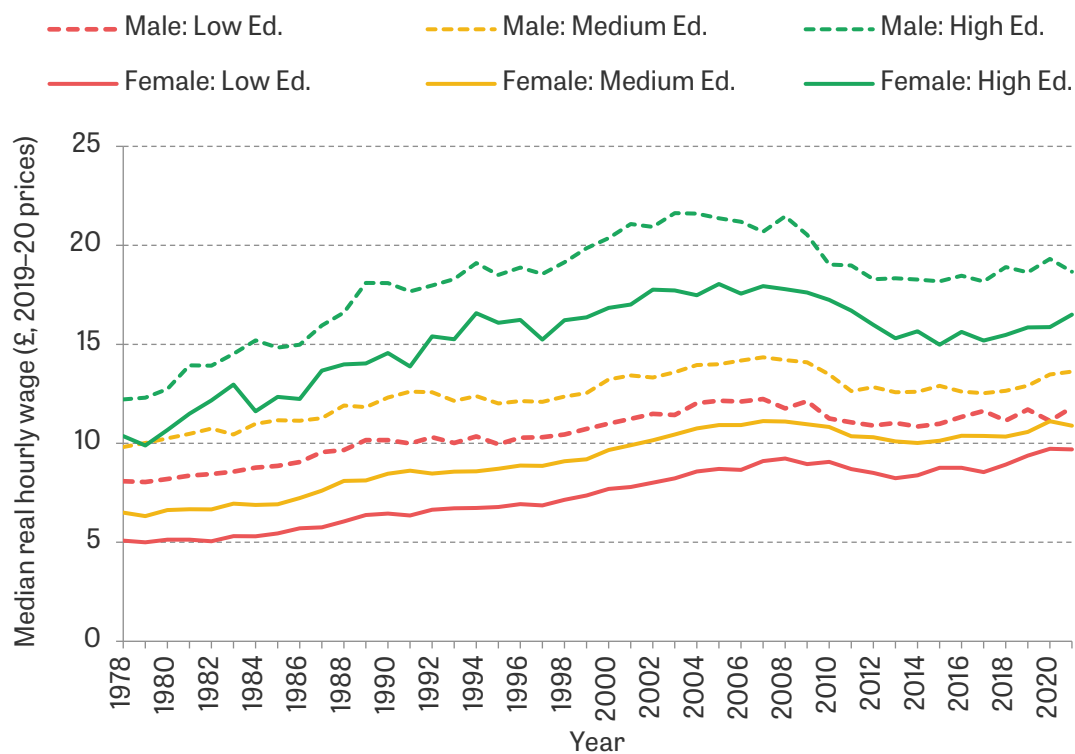
Real median hourly wages rose steadily between 1968 and 2007, by almost 2.5 times in total, equivalent to annualised real growth of 2.3% per year. However, the Great Recession caused a significant drop in real wages, which had not been fully reversed by 2019 despite some recovery in the years before the pandemic. By 2021 median wages had just surpassed 2007 levels. Figures 8 and 9 show that these trends have been similar for males and females, and across education groups, though the drop in wages for those with university qualifications was particularly pronounced, and hourly wages for this group were barely higher than in the mid-1990s by 2019.

Figure 8. Median real hourly wage among employees, overall and by sex, over time



Note: Sample is employees aged 25–60 with strictly positive wages. Wages are in 2019–20 prices.

Figure 9. Median real hourly wage among employees, by sex and education, over time

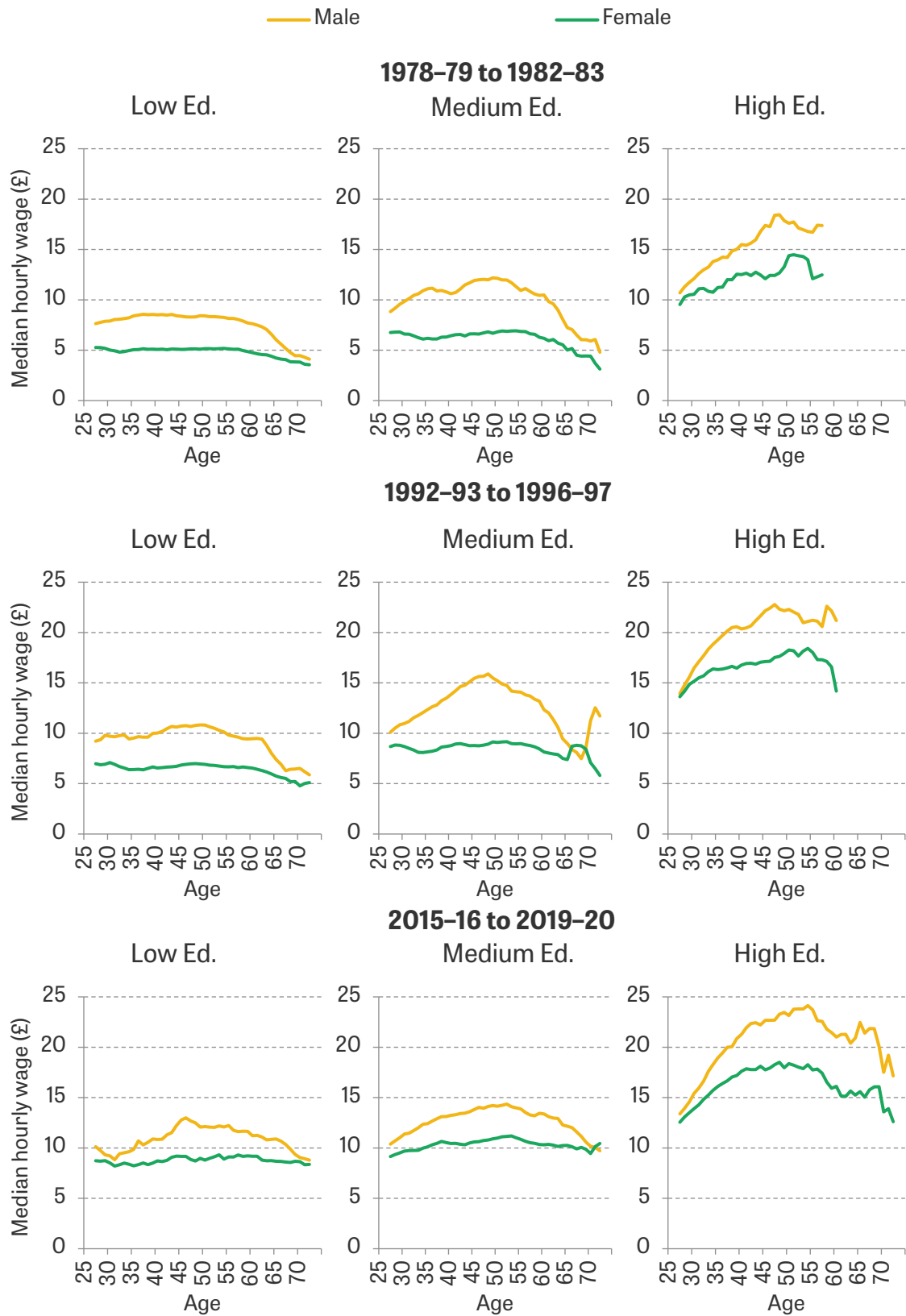


Note: Sample is employees aged 25–60 with strictly positive wages. Wages are in 2019–20 prices.

Figure 10 shows median wages over the life cycle by sex and education, for different time periods. Those with lower levels of education see a flatter wage profile over the life cycle, with men with little to no education (ISCED 0–2) and women with low to middle levels of education (ISCED 0–2

and 3–5) seeing virtually no wage growth over their working lives. For those with degrees (ISCED 6–8), men and women have the same median wage at age 25, but the gender wage gap gradually opens up between the ages of 25 and 35.

Figure 10. Median real hourly wage among employees over life cycle, by sex and education

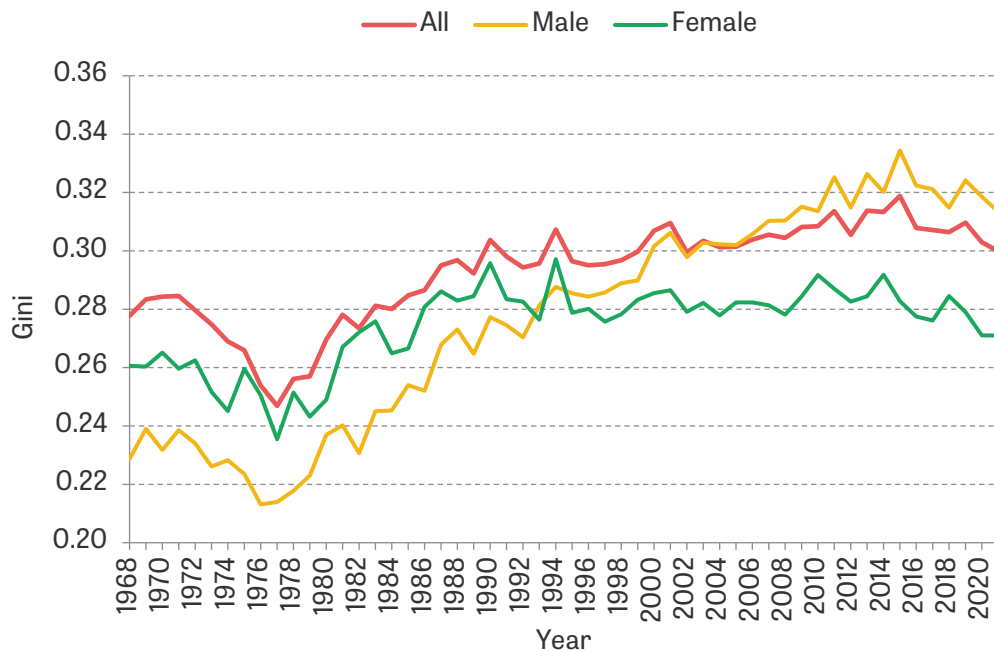


Note: Sample is individuals with strictly positive wages. Wages are shown in 2019 constant-wage terms. Five-year smoothing across ages has been applied. In earlier years, higher ages have been excluded for the ISCED 6–8 group due to small sample sizes.

Figures 11 and 12 plot trends in wage inequality using the Gini coefficient, the 90:10 ratio and the 50:10 ratio. Wage inequality fell in the late 1960s to early 1970s and rose sharply from the late 1970s to the early 1990s. Since then, wage inequality has stabilised. Wage inequality across most of the distribution (as captured by the 90:10 ratio) has been falling over the last two decades, going back to its 1980 level by 2020, though inequality at the very top kept rising into the 2010s. The more recent fall in wage inequality, seen in 90:10 and 50:10 ratios in Figure 12 in particular, captures the rise in wages for low earners caused by substantial rises in the minimum wage.

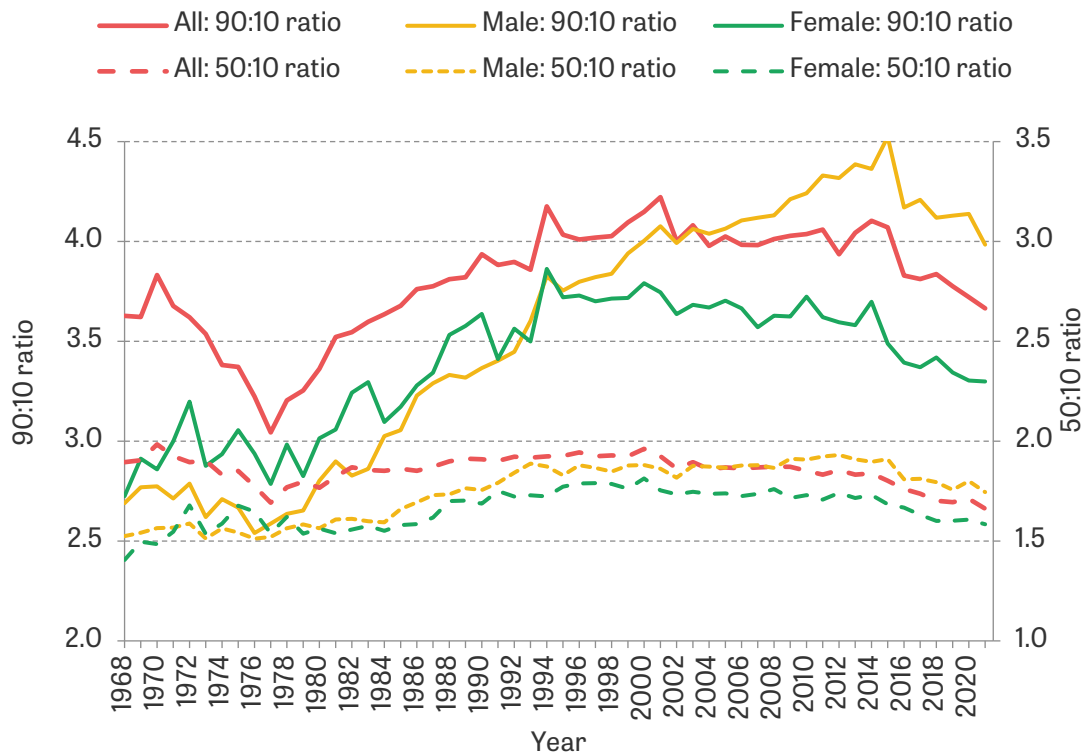
The stability of overall wage inequality since the 1990s masks a sharp rise in male wage inequality and a fall in women’s wage inequality, as well as women’s wages catching up with men’s wages. Between 1992 and 2020, the Gini in male wages rose from 0.28 to 0.31, while the Gini in female wages fell from 0.28 to 0.27.

Figure 11. Gini coefficient of hourly wages among employees, overall and by sex, over time



Note: Sample is employees aged 25–60 with strictly positive hourly wages. Trimmed at the top and bottom 1% of the gender-specific hourly wage distribution.

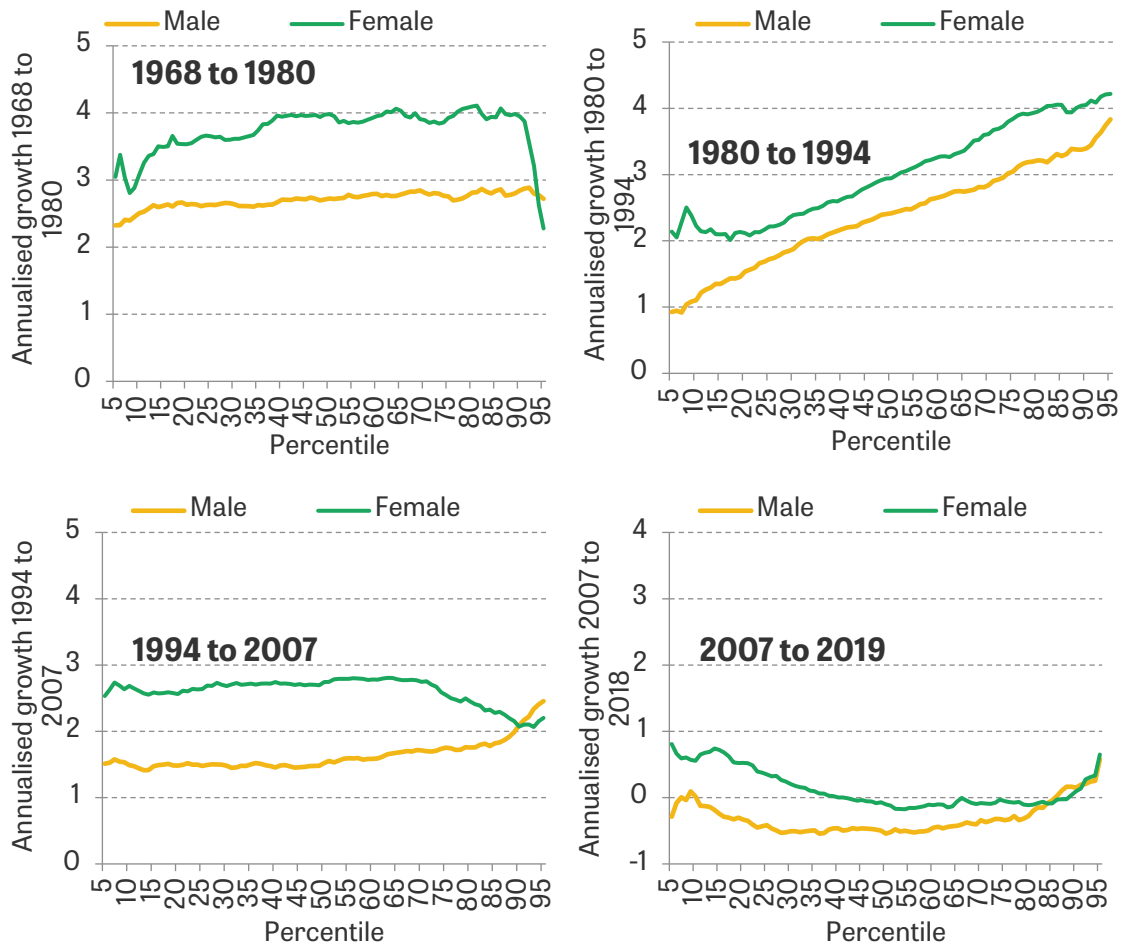
Figure 12. 90:10 and 50:10 ratios of hourly wages among employees, overall and by sex, over time



Note: Sample is employees aged 25–60 with strictly positive hourly wages.

Figure 13 looks in more detail at changes in hourly wages across the wage distribution. The period between 1968 and 1980 was one of high and relatively even wage growth, with wages growing by nearly 3% a year for men and 4% for women across most of the distribution. Wage inequality increased sharply between 1980 and 1994, with wages growing at around three times (men) or twice (women) as quickly at the top as at the bottom of the wage distribution. Between 1994 and 2007, wage inequality fell for women and increased for men, driven by the top of the wage distribution (above the 70th percentile). In the period since the Great Recession (2007–19), wages stagnated or fell across most of the distribution, with the bottom of the distribution doing better than the rest. This reflects a series of increases in the minimum wage, especially since 2016.

Figure 13. Annualised growth in hourly wages among employees by wage percentile, overall and by sex, selected periods

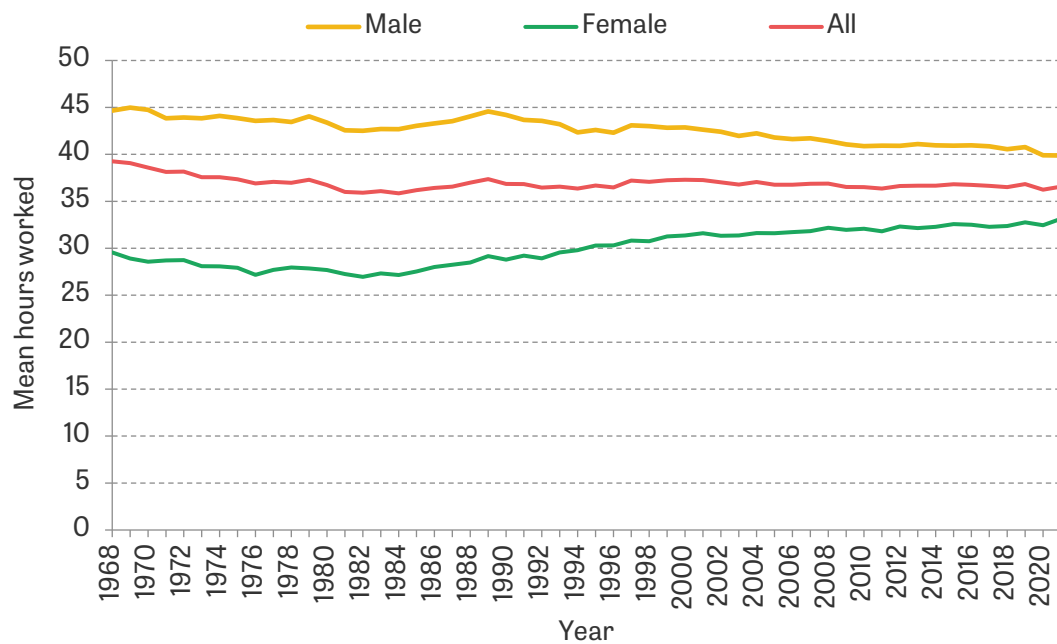


Note: Sample is employees aged 25–60 with strictly positive hourly wages.

4.3 Trends in hours worked (employees only)

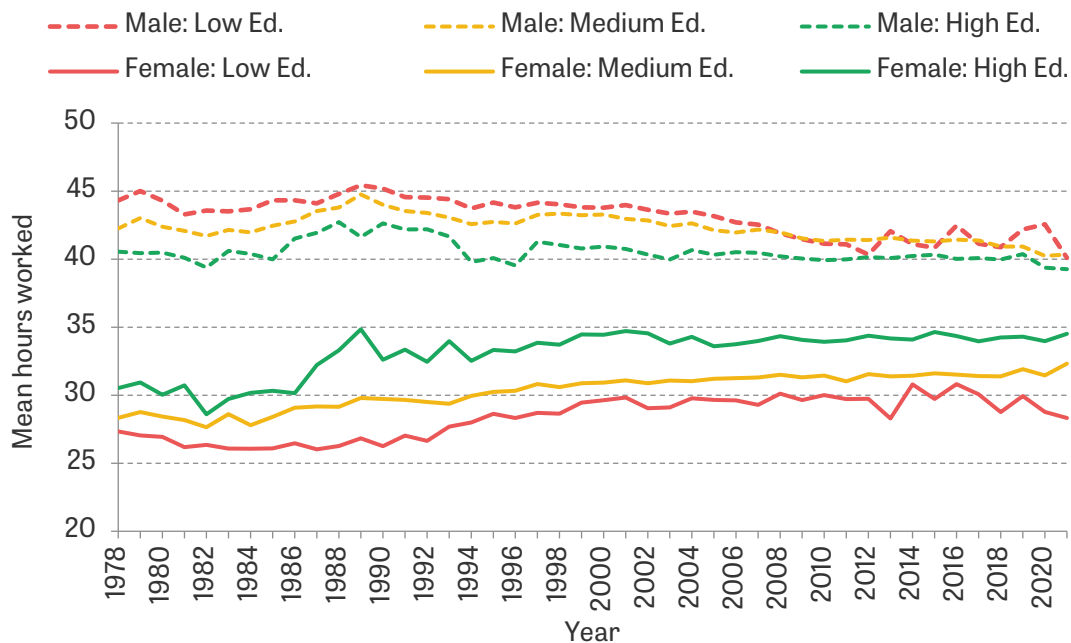
Figure 14 shows that average hours worked among employees have increased for women, and fallen for men, since the mid-1990s. For men, the fall in hours worked was concentrated among those with no or low levels of education (Figure 15), up until around 2010. Belfield et al. (2017) suggest that an important change for lower-educated and lower-paid men over this period was a larger proportion of them working part-time.

Figure 14. Mean hours worked among employees, overall and by sex, over time



Note: Sample is employees aged 25–60. Hours have been top-coded to 97 hours per week.

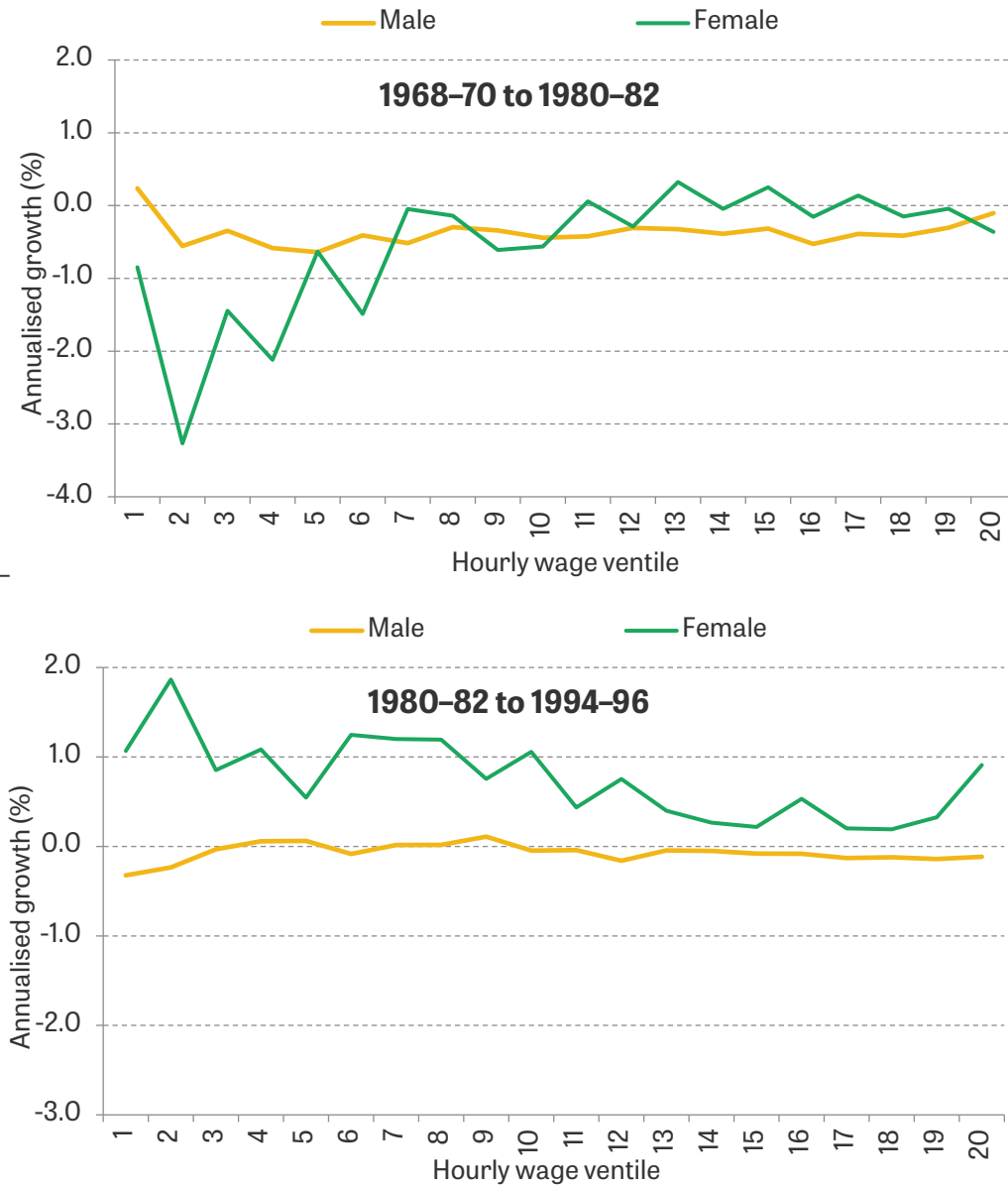
Figure 15. Mean hours worked among employees, by sex and education, over time

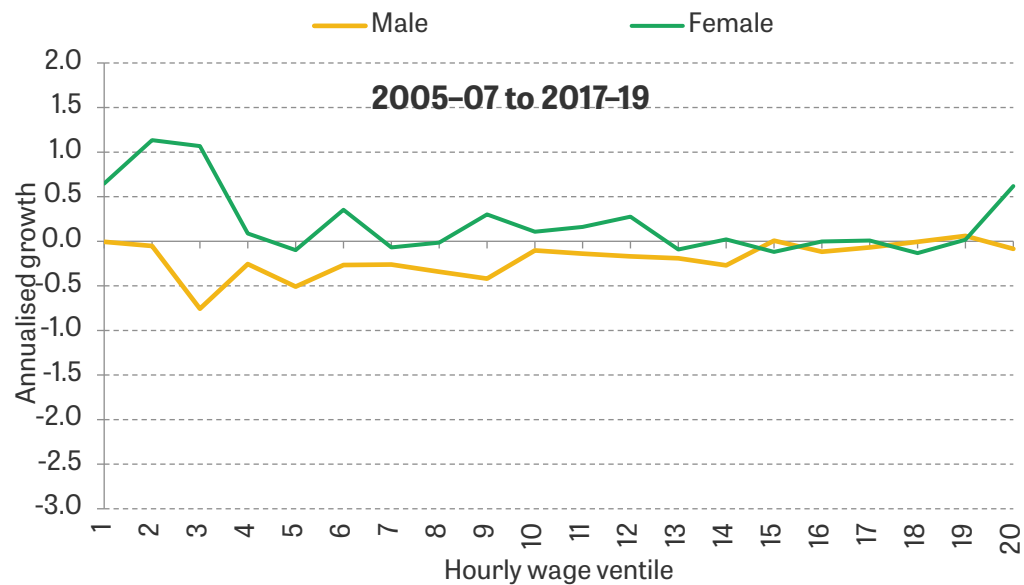
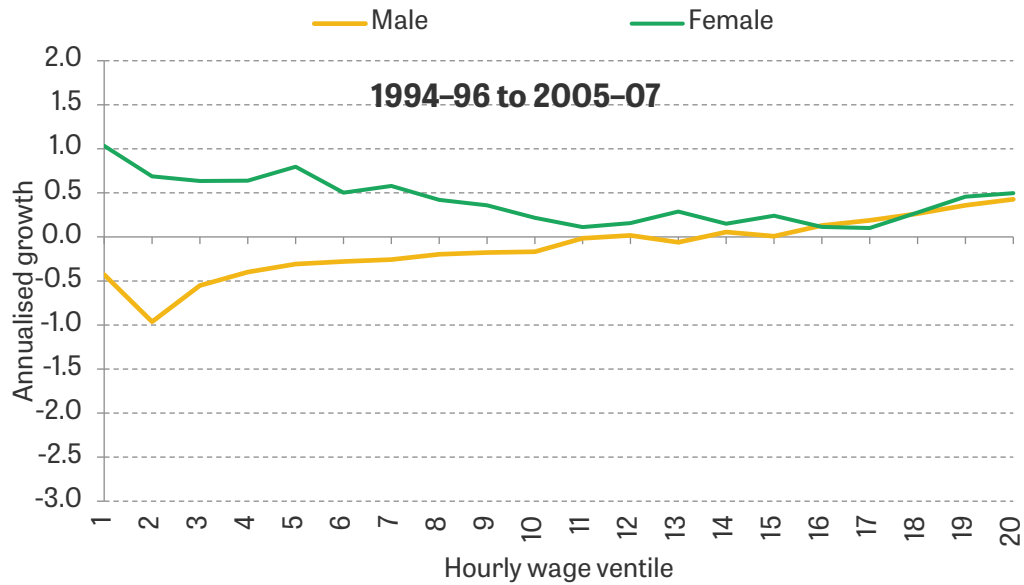


Note: Sample is employees aged 25–60. Hours have been top-coded to 97 hours per week.

Figure 16 shows that average hours worked for women increased across the wage distribution, with larger increases towards the bottom of the distribution. For men, the fall was concentrated among those on low wages: between the mid-1990s and the Great Recession, hours worked fell for low-waged men and increased for high-waged men. Since the Great Recession, male hours have fallen across most of the wage distribution, though still more strongly towards the bottom.

Figure 16. Annualised growth in mean hours worked among employees by hourly wage ventile, overall and by sex, selected years



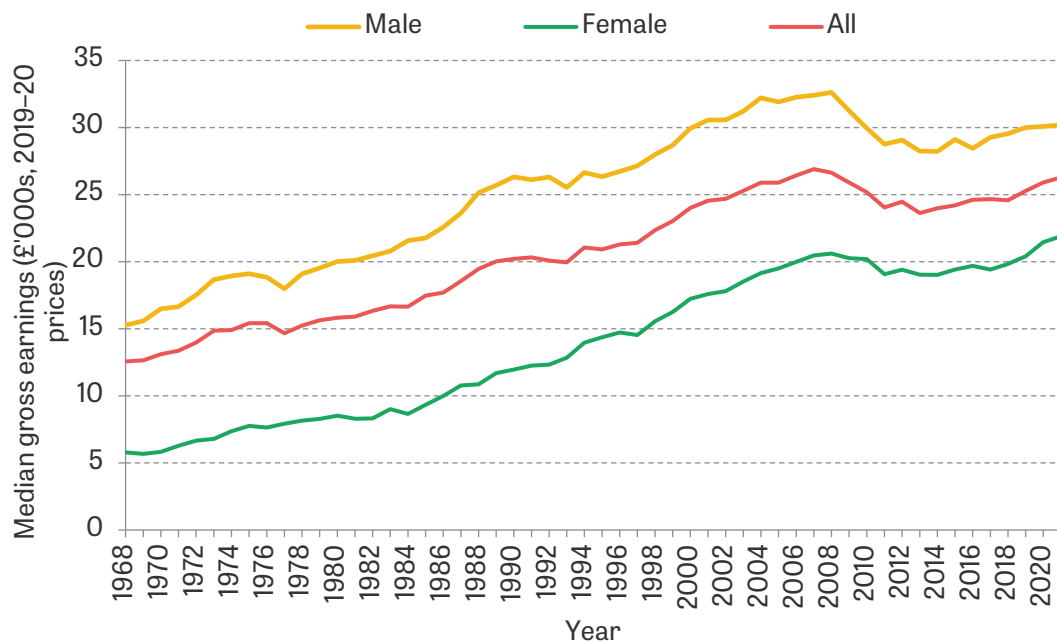


Note: Sample is employees aged 25-60. Hours have been top-coded to 97 hours per week.

4.4 Inequality in individual earnings among those in work (employees and self-employed)

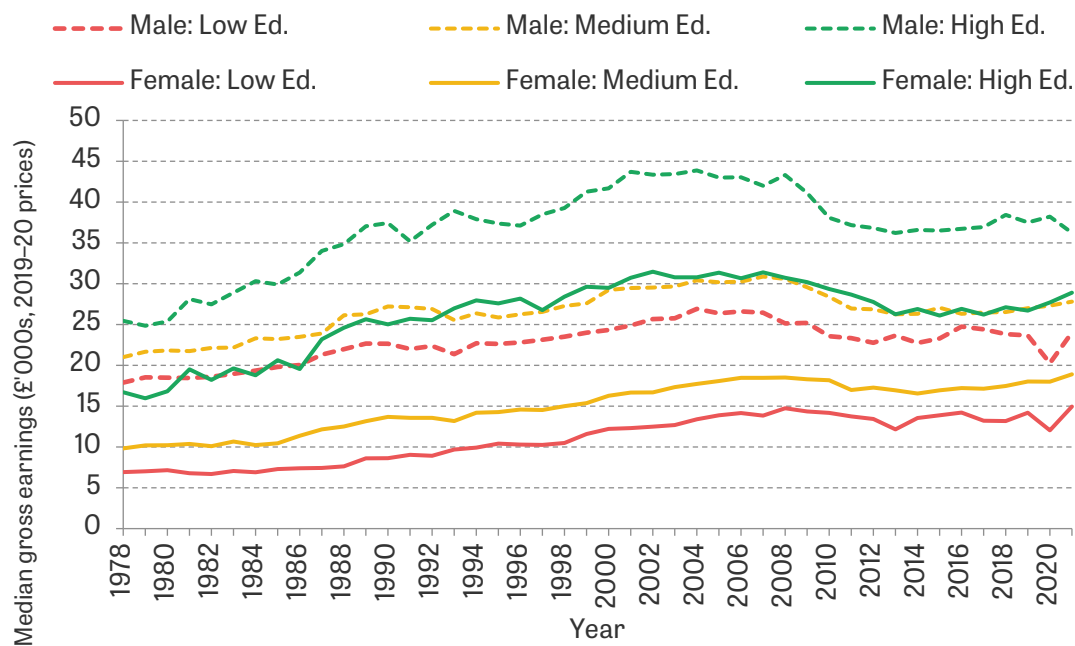
We now turn to trends in individual earnings, which reflect the combination of trends in hours worked and hourly wages. Before examining inequality statistics, Figure 17 shows trends in median earnings, which are mainly driven by median wage changes – median hours have been comparatively stable over time. The figure shows that median earnings increased for men and women from 1968 until the Great Recession, which led to a lasting fall from which men have still not recovered, and women have only just recovered. Figure 18 shows that the recovery in earnings from the Great Recession has been particularly weak for those low level qualifications (ISCED 0-2), and also weaker for those with university qualifications (ISCED 6-8), though trends by education could be affected by selection (given the increase in educational attainment over this period).

Figure 17. Median real gross individual earnings, overall and by sex, over time



Note: Sample is individuals in work aged 25–60 with strictly positive earnings. Gross earnings are in 2019–20 prices.

Figure 18. Median real gross individual earnings, by sex and education, over time

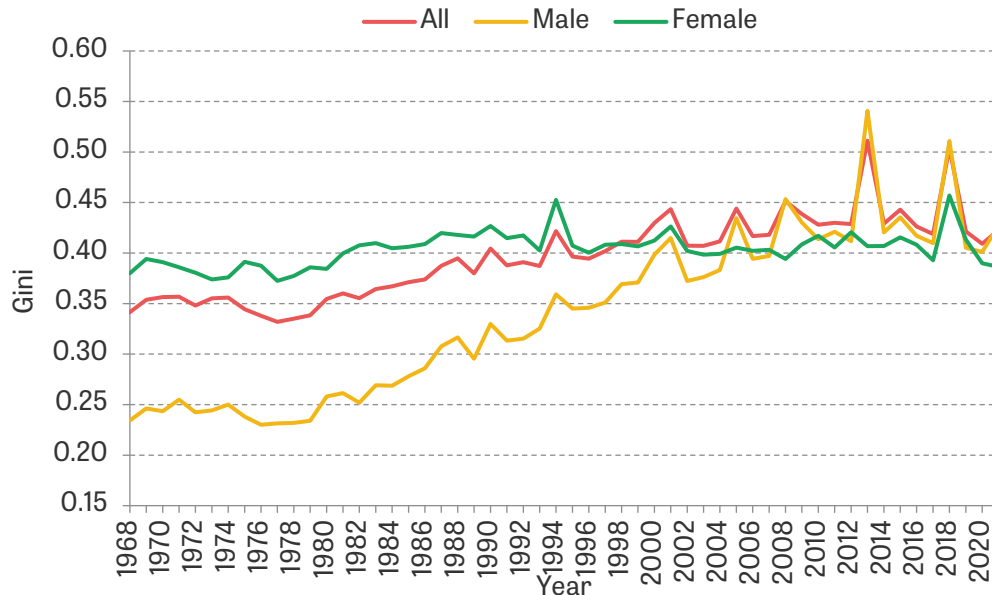


Note: Sample is individuals in work aged 25–60 with strictly positive earnings. Gross earnings are in 2019–20 prices.

Figure 19 shows that overall earnings inequality as measured by the Gini coefficient has been broadly stable over the last three of decades, having risen in the 1980s, and stood at 0.36 in 2019. This is driven by a moderate decline in female earnings inequality, and a reduction in inequality between males and female earnings, offsetting a rise in male earnings inequality which began in the late 1970s and lasted until the Great Recession. As shown above, this rise in male earnings inequality was driven by rising wage inequality at the top and rising hours inequality at the

bottom. It is also notable that since the mid-2000s, male earnings inequality has been greater than female earnings inequality. The particular spikes in the data are caused by some very high observations in the data which are not trimmed out, in order to be consistent with other countries' reports. A slowing of the decline in hours worked at the bottom of the wage distribution, combined with higher growth in hourly wages driven by the minimum wage, has meant that the rise in male earnings inequality has stopped in the last decade.

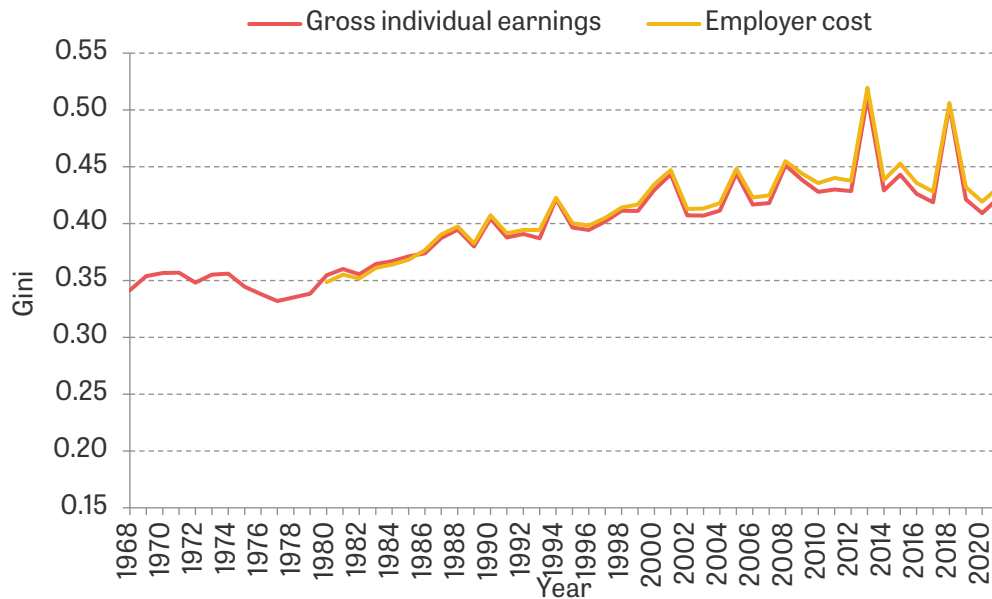
Figure 19. Gini coefficient of gross individual earnings, overall and by sex, over time



Note: Sample is individuals in work aged 25–60 with strictly positive earnings.

Figure 20 shows how the Gini coefficient for earnings differs when they are considered on an 'employer cost' basis, including employer National Insurance contributions, to better reflect the cost to employers of employing an individual. Trends have been very similar over time, with inequality in employer costs very slightly higher since the 1990s. This similarity between the two series suggests that, for the UK, were we to focus on earnings including employer taxes, the trends in inequality would be very similar.

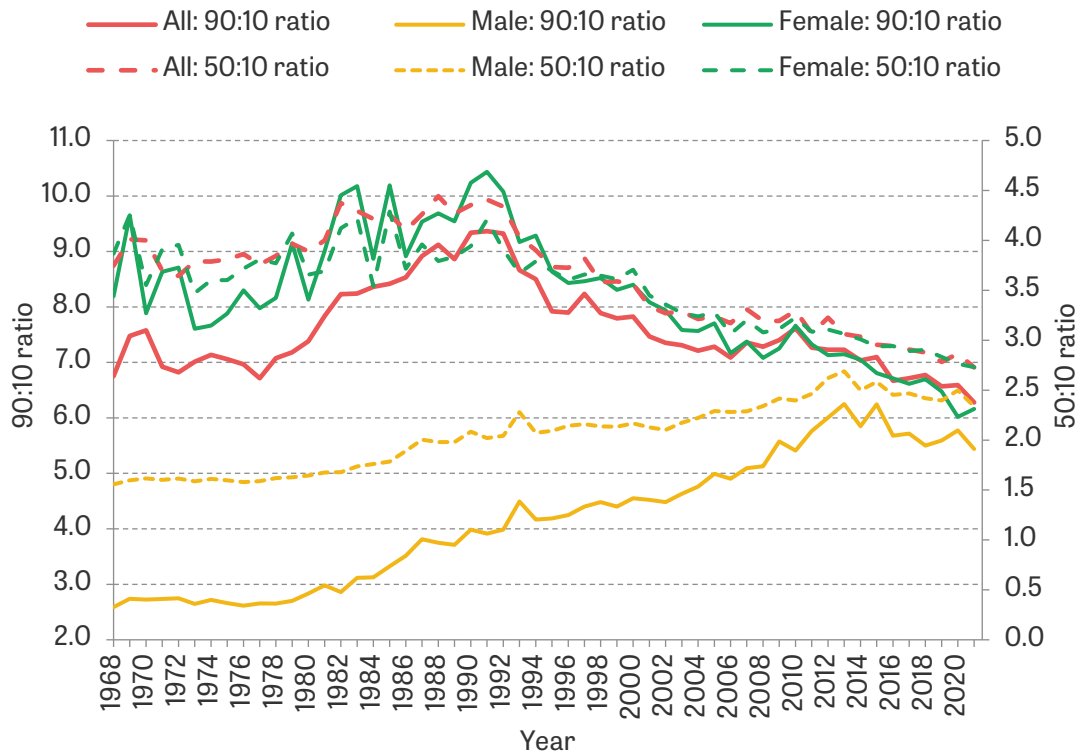
Figure 20. Gini coefficient of gross individual earnings and total employer cost, over time



Note: Sample is individuals in work aged 25–60 with strictly positive earnings. The 'employer cost' series includes employer National Insurance contributions.

Figure 21 shows that earnings inequality has fallen across most of the distribution since the early 1990s, as captured by both the 90:10 and 50:10 measures of earnings inequality. Again, we see rising male earnings inequality offset by falling female inequality and inequality between men and women. The difference between the fall in the 90:10 and stagnation in the Gini coefficient reflects rising top earnings inequality, which continued to increase over this period.

Figure 21. 90:10 and 50:10 ratios of gross individual earnings, overall and by sex, over time

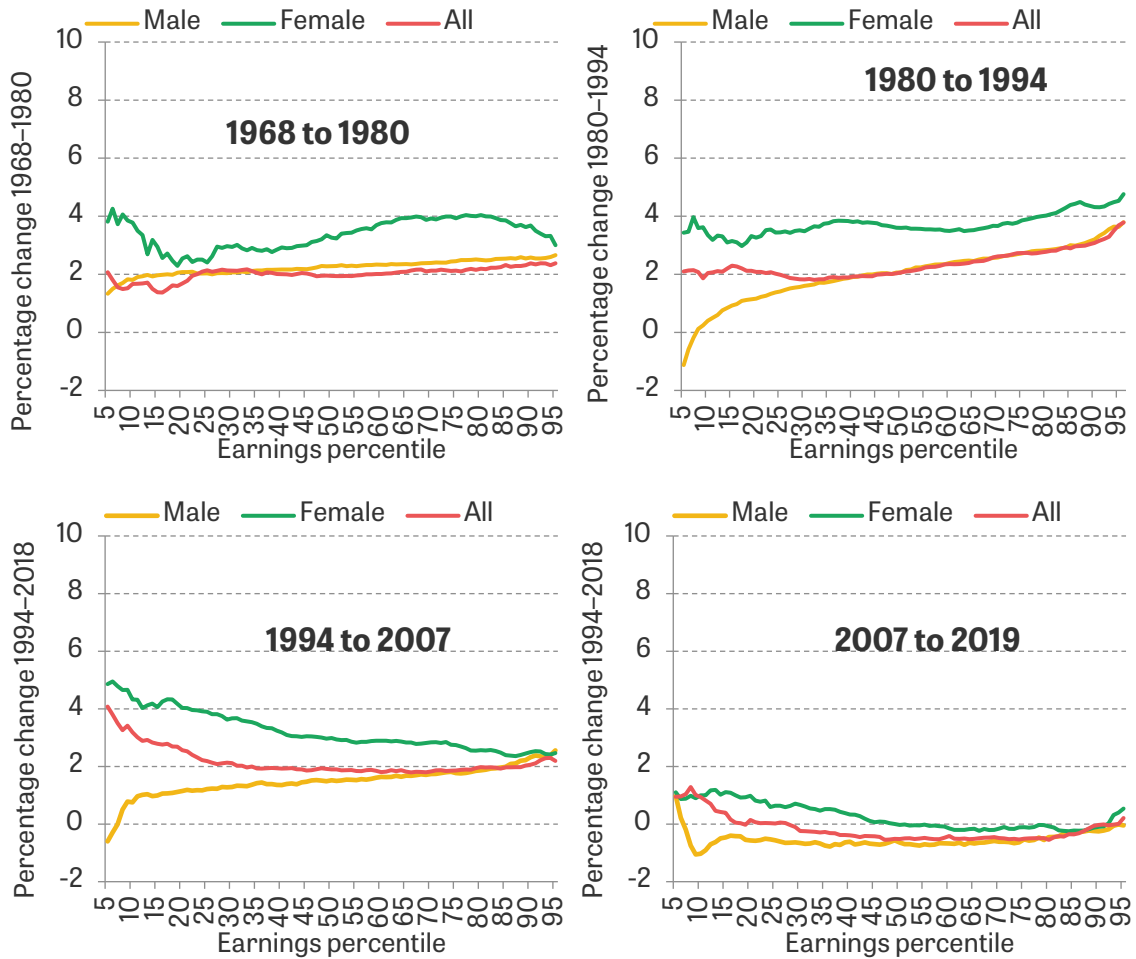


Note: Sample is individuals in work aged 25–60 with strictly positive earnings.

Figure 22 shows the growth in earnings across the distribution. It shows similar trends to Figure 13, which plots the change in wages over the same periods. However, the rise in male earnings

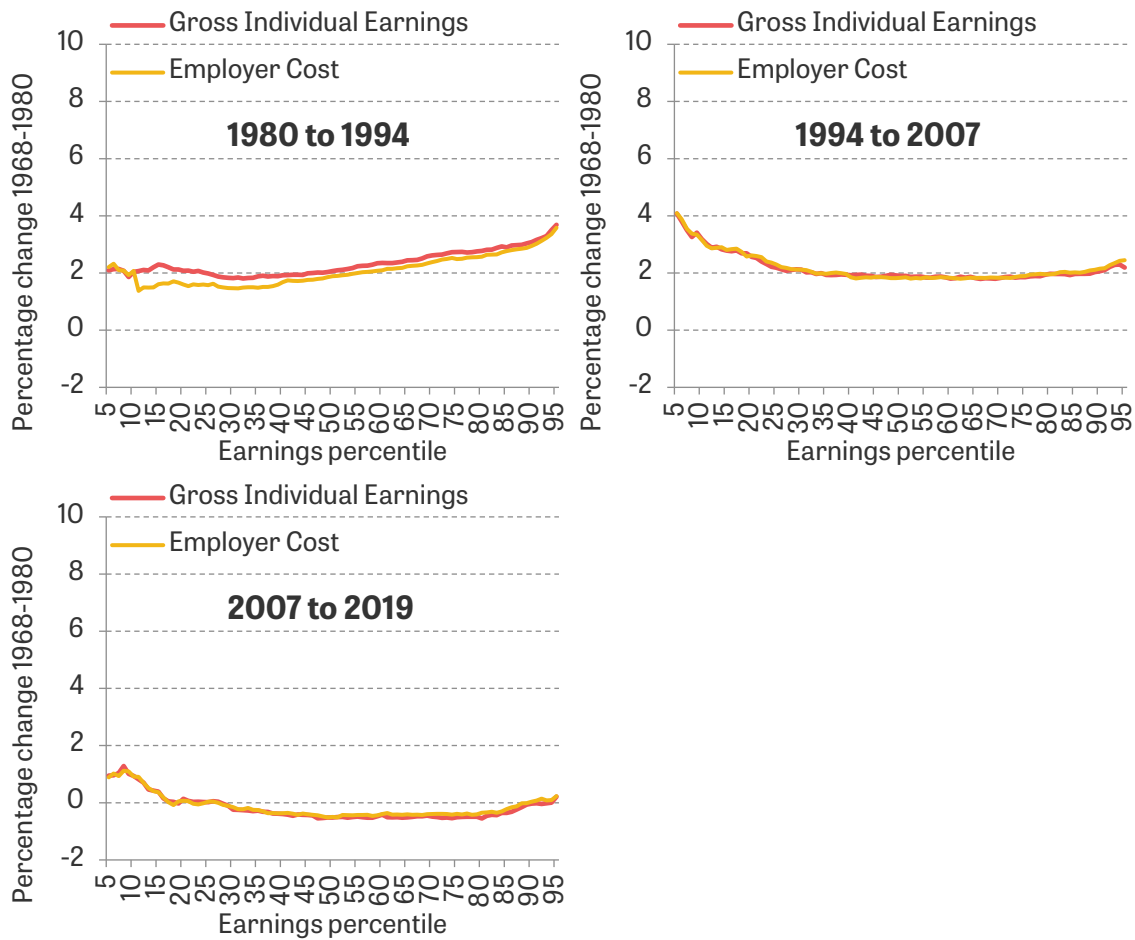
inequality between 1980 and the Great Recession was steeper than the rise in male wage inequality, reflecting the fall in hours worked among low-wage men. For women, earnings inequality rose by less than wage inequality between 1980 and 1994 and fell by more between 1994 and 2007, as hours worked increased most for low-wage women. Figure 23 shows that including employer taxes once again makes little difference to the trends.

Figure 22. Annualised growth in gross earnings by earnings percentile, overall and sex, selected periods



Note: Sample is individuals in work aged 25–60 with strictly positive earnings.

Figure 23. Annualised growth in gross earnings and employer cost by earnings percentile, selected periods

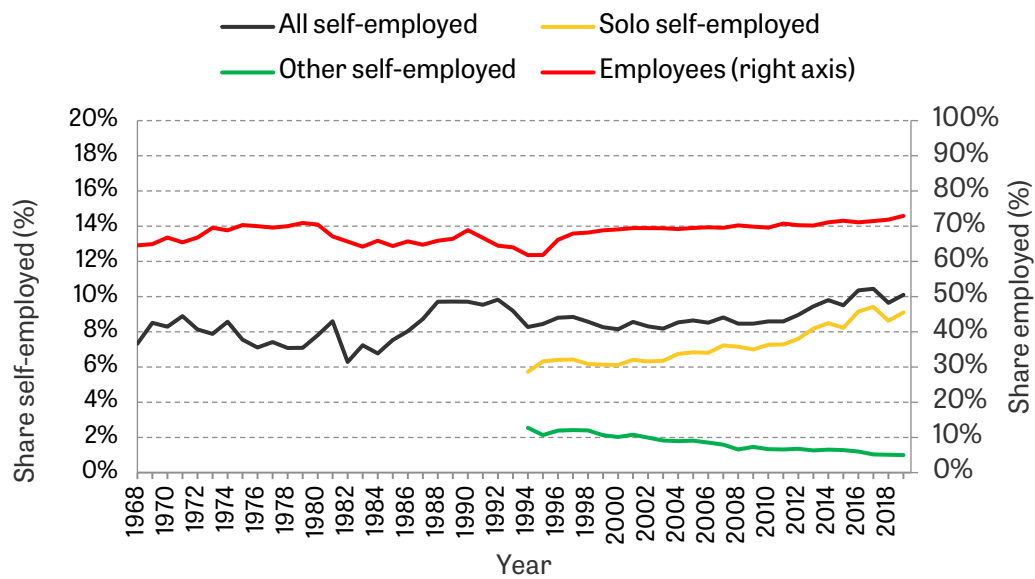


Note: Sample is individuals in work aged 25–60 with strictly positive earnings.

4.5 Self-employment

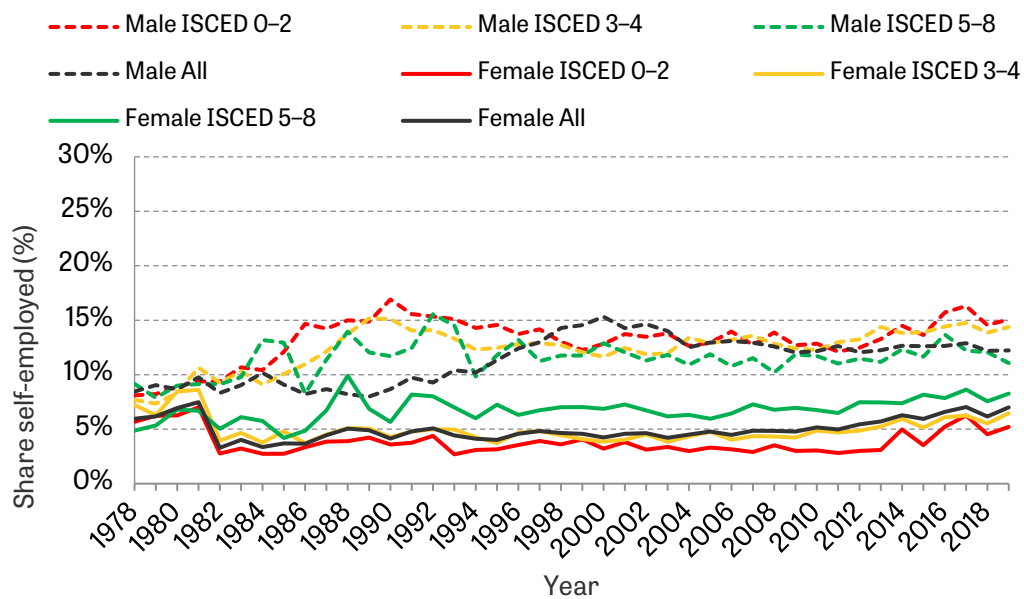
There has been a steady rise in self-employment in the UK since around 2000, after a decline in the previous decade (Figure 24). This is entirely driven by a rise in solo self-employment; the share of workers who are self-employed with employees fell over this period. The rise was concentrated among women and those with less education (Figure 25), and the former reflects not only rising female employment but also an increasing share of the self-employed among workers. Rates of self-employment increased most among those with low earnings, with the increase in self-employment since the Great Recession almost entirely concentrated in the bottom 20% of the earnings distribution (Figure 26). We do not include the pandemic for these charts on self-employment as there were a number of difficulties correctly capturing changes in self-employment in the pandemic, particularly because some people realised that they were not actually self-employed as they had access to pandemic-related financial support restricted to employees.

Figure 24. Share of employees and self-employed workers, over time



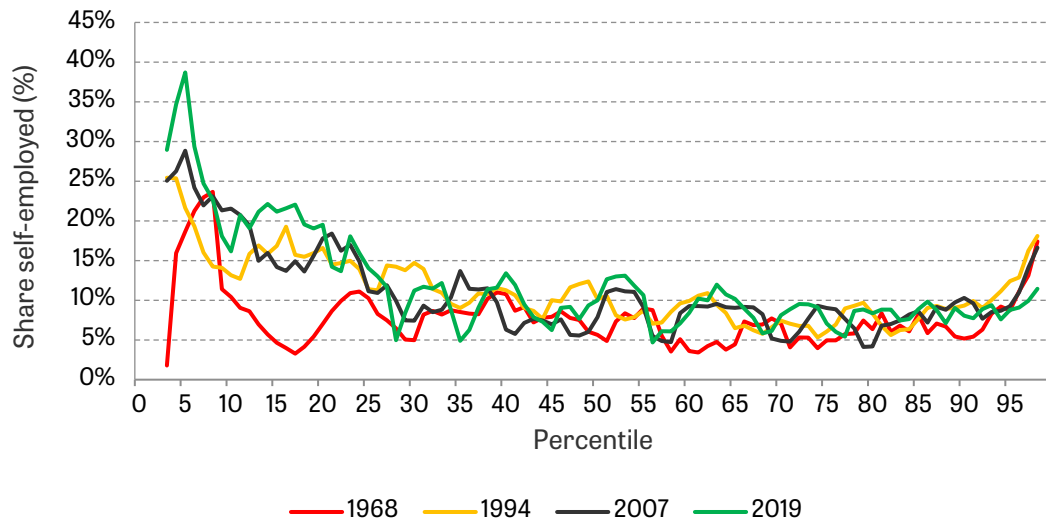
Note: Individuals age 25–60 years of age. ‘Solo self-employed’ are self-employed without employees, ‘Other self-employed’ include self-employed with employees and family workers. Data from 2020–21 have been excluded because self-employment data in this year are less reliable. Workers are defined as self-employed if they receive more income from self-employment than they do from employment.

Figure 25. Share self-employed by sex and education, over time



Note: Sample is individuals aged 25–60. ‘Solo self-employed’ are self-employed without employees, ‘Other self-employed’ includes self-employed with employees and family workers. Data from 2020–21 have been excluded because self-employment data in this year are less reliable. Workers are defined as self-employed if they receive more income from self-employment than they do from employment.

Figure 26. Share self-employed by percentile of individual earnings, selected



Note: Sample is individuals aged 25–60. Five-year smoothing has been applied. Workers are defined as self-employed if they receive more income from self-employment than they do from employment.

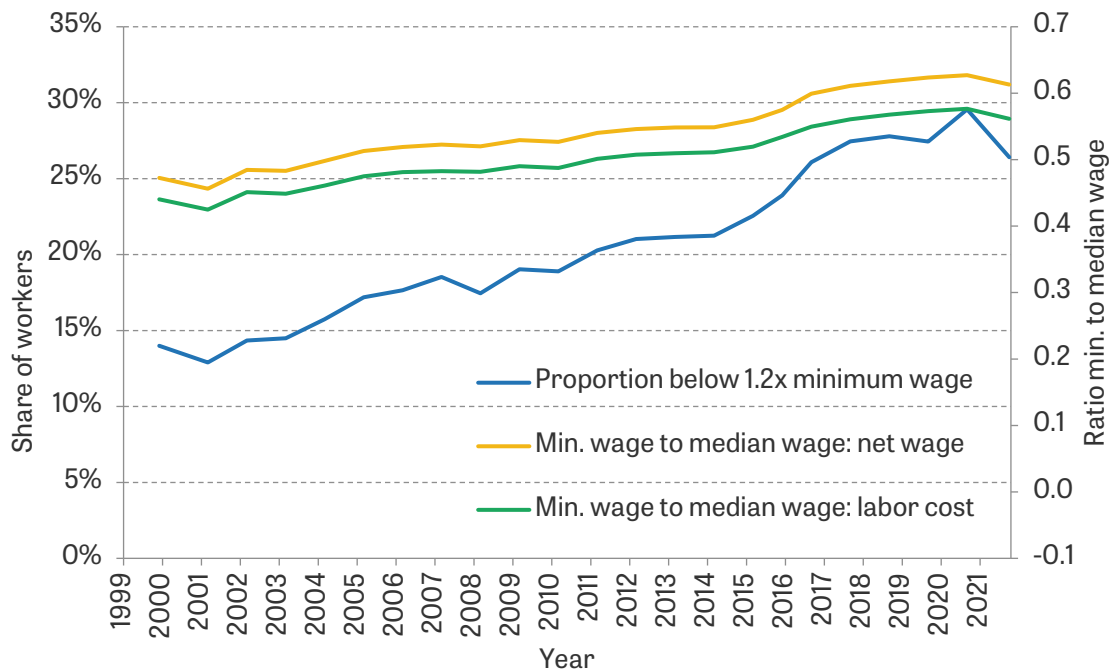
5. Labour market institutions

This section looks at labour market institutions that affect earnings and incomes: minimum wages and collective bargaining, and self-employment. As in most of this report, all analysis is restricted to workers aged 25–60.

5.1 Minimum wage and unions

The bite of the minimum wage has increased steadily since its introduction in 1999, as shown in Figure 27, with a particularly large increase in 2016. As a share of median net wages, it rose from 47% in 1999 to 60% in 2016 and 62% in 2019. It is set to reach 66% by 2024. The share of workers earning below 120% of the minimum wage rose from 13% after its introduction to 27% in 2019.

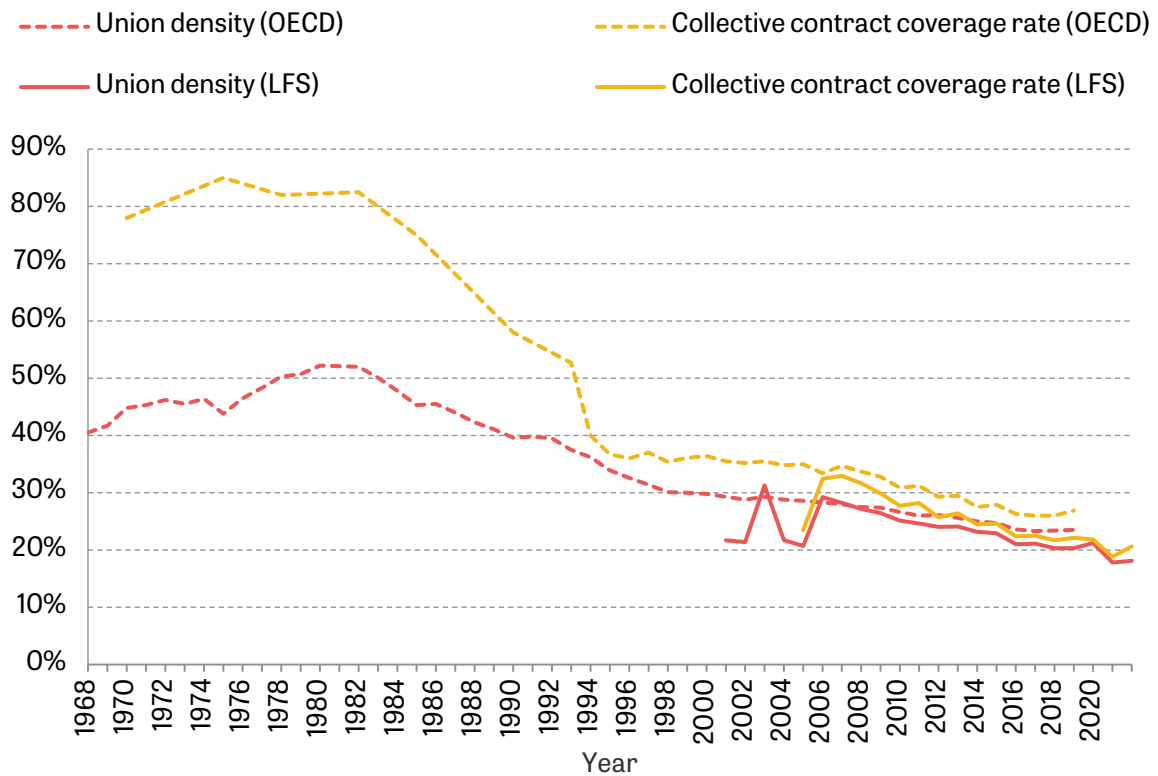
Figure 27. Bite of the minimum wage, over time



Note: Sample is individuals aged 25–60. The minimum wage used is the minimum wage for over 25s. The blue line shows the share of workers with a wage inferior to 1.2 times the minimum wage (left-hand side). The yellow and green lines are the ratio of the minimum wage to the median wage for the net wage and the labor cost (right-hand side). Periods in which the minimum wage was at a given value do not exactly correspond to financial years, so in this figure '1999' on the horizontal axis corresponds to '1 January 1999', and each datapoint is plotted at the midpoint of the period to which it corresponds.

Figure 28 shows union density for all employees in the UK since 1968, and the proportion of workers for whom trade union negotiations affect pay and conditions. It also shows the same rates for 25–60-year-olds for more recent years. After various reforms in the 1980s weakening the power of trade unions, union coverage declined from a peak of 52% in 1980 to 36% in 1994 and 24% in 2019. The proportion of employees whose contracts are impacted by collective bargaining has declined even more drastically, from a high of 85% in 1975 to 27% in 2019. This suggests that the spillover influence of trade unions on non-members has declined drastically over time.

Figure 28. Union density and fraction of workers covered by collective bargaining agreements, over time



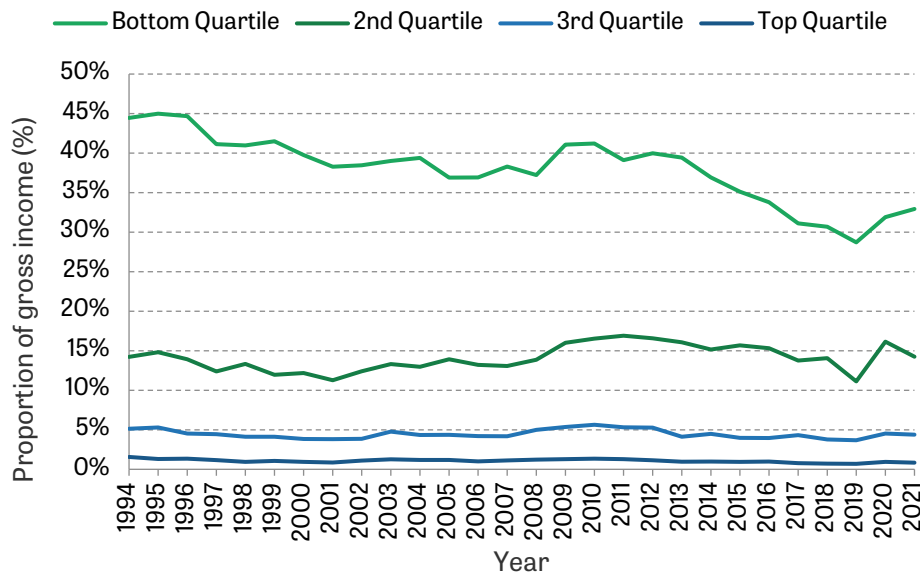
Note: The sample for the OECD series is all employees, and the sample for the LFS series is those aged 25–60. In both cases the denominator is the number of employees.

Source: OECD, Authors' calculations using data from the Labour Force Survey, 2001–22.

5.2 The effects of taxes and state benefits across the income distribution

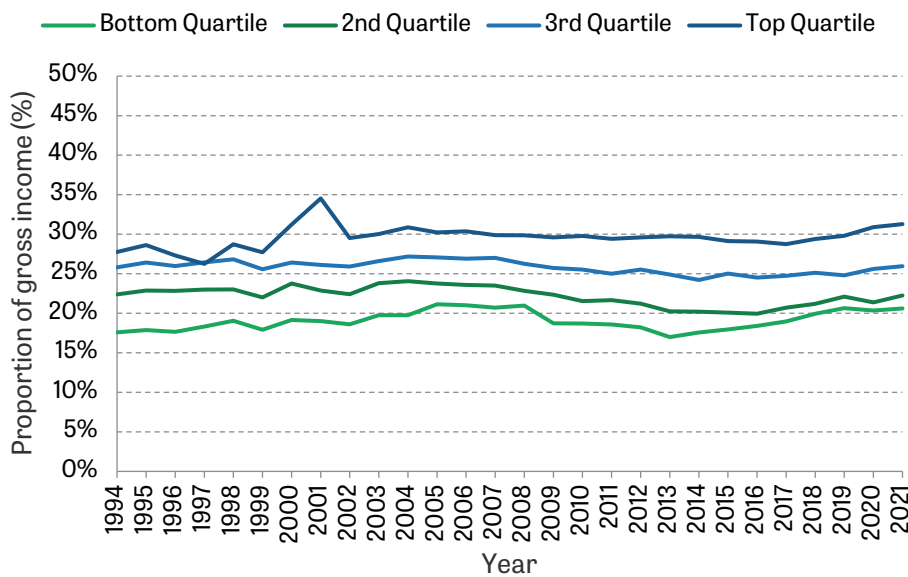
Figures 29–32 together show the importance of state benefits and direct taxes in redistributing incomes from richer to poorer households, and how that has changed. Figure 29 shows that in 2019, just before the pandemic, 29% of gross income for the poorest 25% of households was made up of state benefits, compared to 11% for the second quartile and essentially nothing for the top quartile. The reliance on state benefits for low-income families fell in the late 1990s as unemployment fell, and stayed flat in the early 2000s as there was higher employment but also increases in in-work benefits – the importance of benefits rose in the second quartile too. Following rises in the Great Recession, the importance of benefits fell again as there was an economic recovery and reductions in benefit generosity, before ticking up during the pandemic due to an increase in support in the welfare system. Figure 30 shows there is much less difference both across the distribution and over time in terms of the importance of direct taxes.

Figure 29. Benefits as a proportion of gross income, by net household income quartile



Note: Sample is individuals aged 25–60. All incomes have been equivalised using the modified OECD equivalence scale.

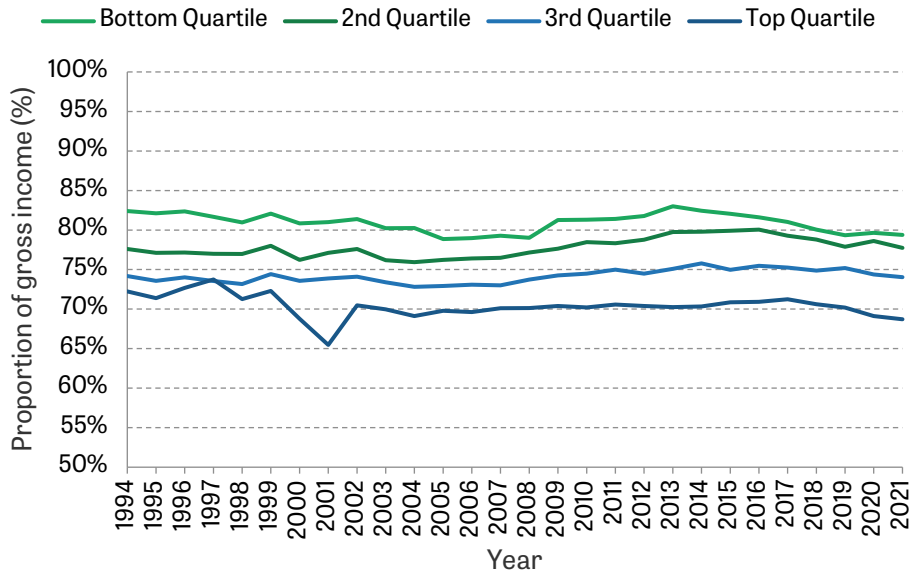
Figure 30. Direct taxes as a proportion of gross income, by net household income quartile



Note: Sample is individuals aged 25–60. All incomes have been equivalised using the modified OECD equivalence scale.

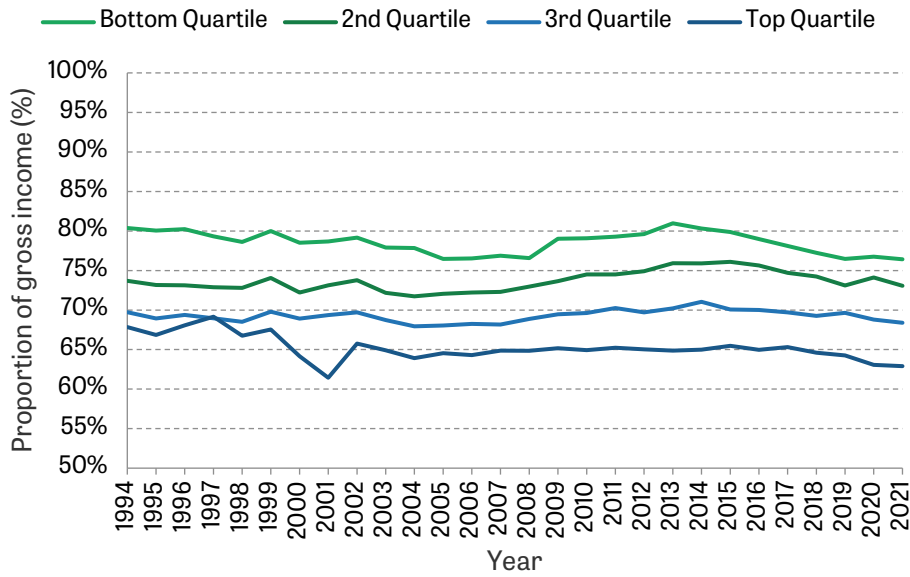
Figure 31 brings this together and shows disposable income as a fraction of gross income; the most obvious interesting trend here is the rising importance of benefits for the second quartile and the falling importance for the first quartile, and a greater similarity in terms of direct taxes between those two quartiles. Figure 32 also incorporates employer National Insurance contributions, but this does not make an important difference.

Figure 31. Disposable income as a proportion of gross income, by net household income quartile



Note: Sample is individuals aged 25–60. All incomes have been equivalised using the modified OECD equivalence scale.

Figure 32. Disposable income as a proportion of gross income and employer social security contributions, by net household income quartile



Note: Sample is individuals aged 25–60. All incomes have been equivalised using the modified OECD equivalence scale.

6. Household incomes

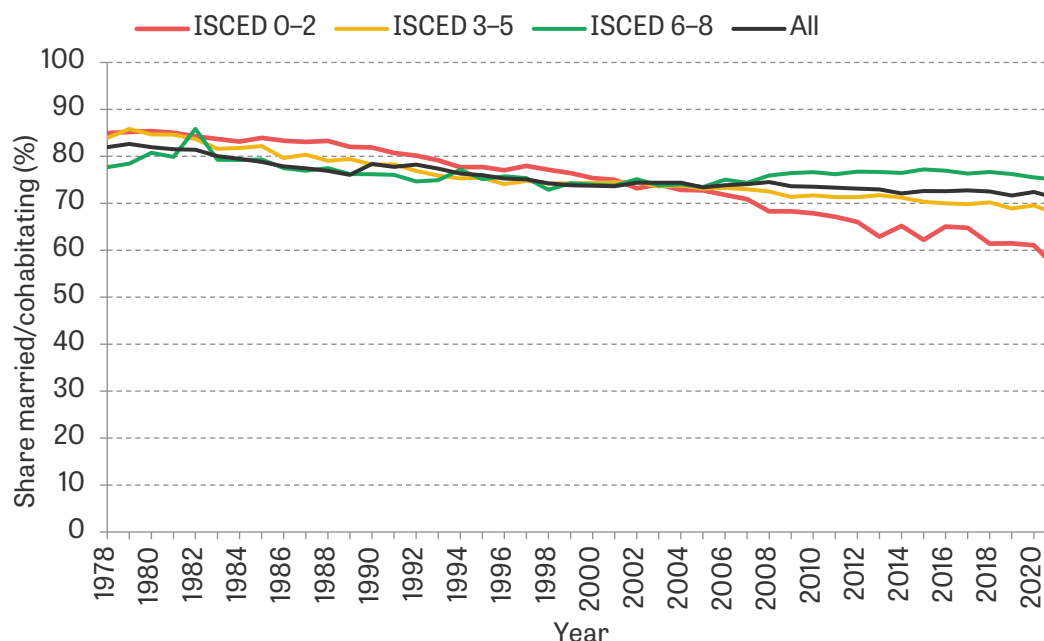
This section looks at trends in household incomes. We start by looking at trends in household composition and the degree of assortative matching, which partly determine household earnings. We then compare trends in household earnings and household disposable income for working households, drawing out the role of the tax and transfer system over time. Finally, we show a set of charts on trends in household income inequality across all households (including those where no one is in work).

Trends in household income inequality are driven by earnings inequality, patterns of assortative matching and other trends in family composition, and the tax and benefit system. This section will first consider patterns in household composition, and how individual earnings inequality translates into household earnings inequality. It then looks at household disposable income, taking account of taxes and benefits, and looking at individuals from all households rather than just workers or working households.

6.1 Trends in household composition

There has been a rise in assortative matching in the UK over the past four decades. First, rates of marriage and cohabitation have fallen most among low-educated individuals. Figure 33 shows that in 1978, graduates (ISCED 6–8) were less likely to be married or cohabiting than those with lower levels of education. This had reversed by 2020: while the share of graduates (ISCED 6–8) who were married or cohabiting in 2020 was similar to the share in 1978, the share of those with medium levels of education (ISCED 3–5) had fallen from 84% to 69%, and the share of those with little or no education (ISCED 0–2) had fallen from 85% to 61%.

Figure 33. Share married/cohabiting, overall and by education, over time

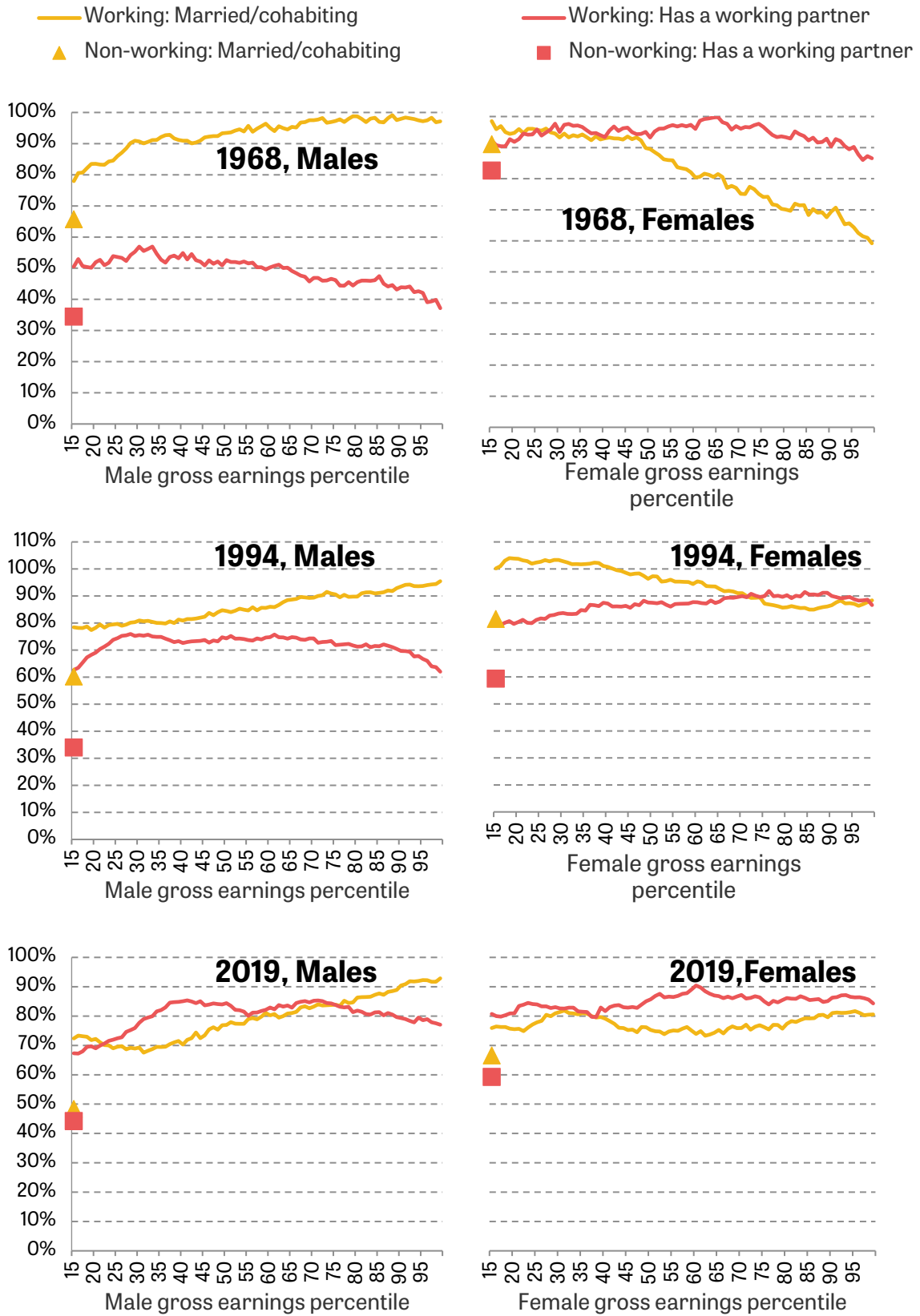


Note: Sample is individuals aged 25–60.

Figure 34 shows a similar pattern when looking at individual earnings, rather than education. For men, the positive correlation between individual earnings and the likelihood of being in a couple has become stronger over time. For women, this relationship was negative in 1968 (high-earning women were less likely to be a couple), whereas in 2019 there was a positive correlation. Further, high-earning individuals are now more likely to have a partner *who works* than before. In 1968, men in the 95th percentile of earnings were 9 percentage points less likely to have a working partner than those in the 15th percentile of earnings (though they were more likely to have a

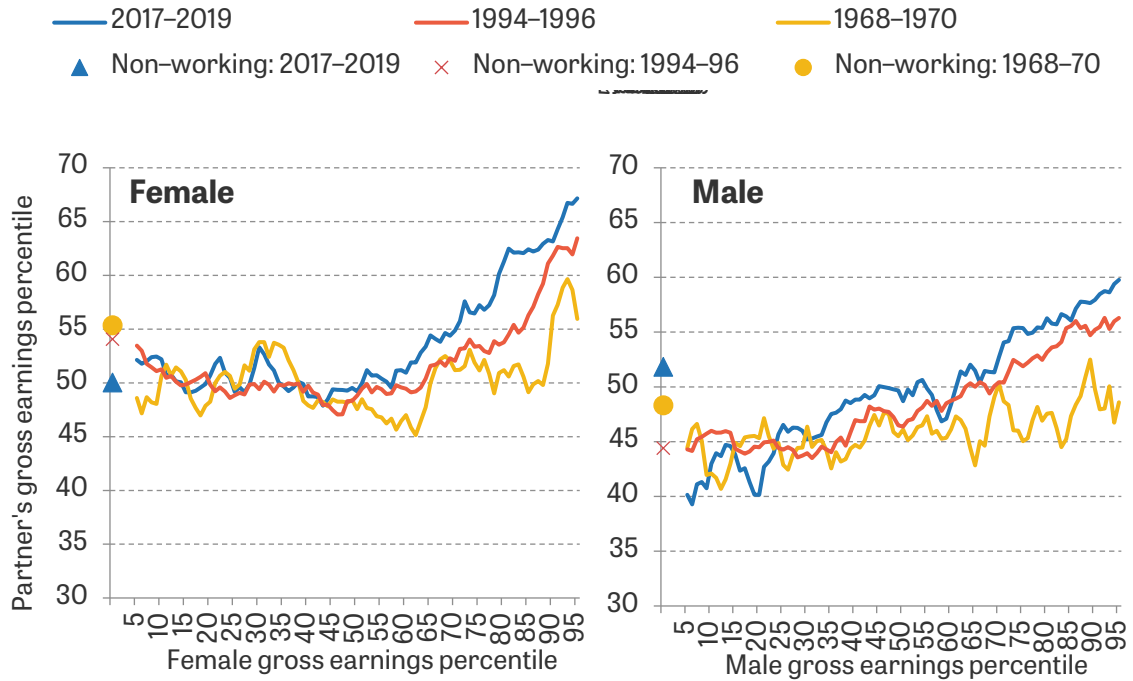
partner at all), while in 2019 they were 6 percentage points *more* likely. Finally, for couples in which both partners work, the positive correlation between partners' earnings is now stronger than before, as shown in Figure 35. The combined impact of these changes is to push up inequality in household earnings.

Figure 34. Share married/cohabiting and share with working partner, by sex and individual gross earnings percentile, selected years



Note: Sample is individuals aged 25–60. Married/cohabitating also includes civil partnerships. The proportion with a working partner is conditional on being married or cohabiting.

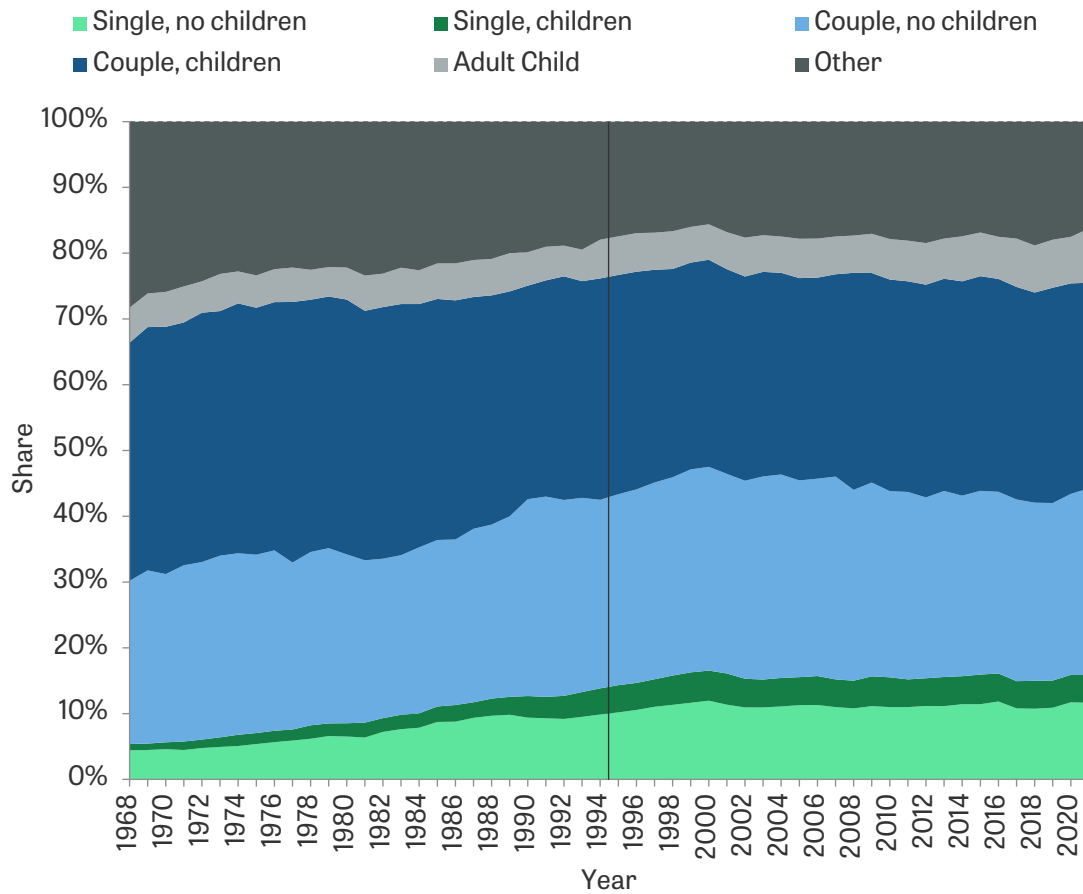
Figure 35. Mean gross earnings percentile of partner/spouse by individual's gross earnings percentile, selected years



Note: Sample is individuals aged 25–60 (with strictly positive earnings for defining earnings percentiles). Married/cohabitating also includes civil partnerships. Mean earnings of partners are plotted as five-point moving averages across the earnings distribution.

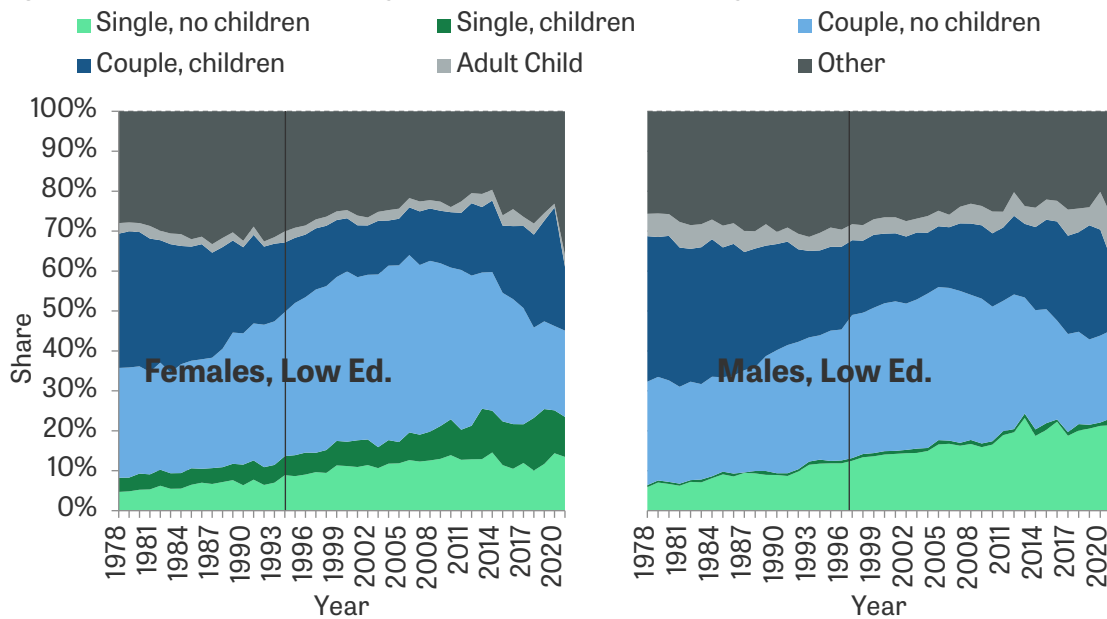
Looking at family structure more broadly, the share of prime working-aged adults who are single without children has increased from 4% in 1968 to 12% in 2021 (Figure 36). The share of single parents has also increased, from less than 1% in 1968 to 2% in 1980 and 4% in 2021 (it has been broadly stable since 1994). Figure 37 shows that the increase in the share of single people without children was concentrated among those with little or no education for women (ISCED 0–2) and among those without university degrees for men (ISCED 0–2 and 3–5). For both men and women, graduates (ISCED 6–8) are now more likely to be in a couple with children than in the early 2000s. The rise in the share of single parents has been almost entirely concentrated among women, especially women with lower levels of education, though there has been a rise among women with degree-level qualifications too.

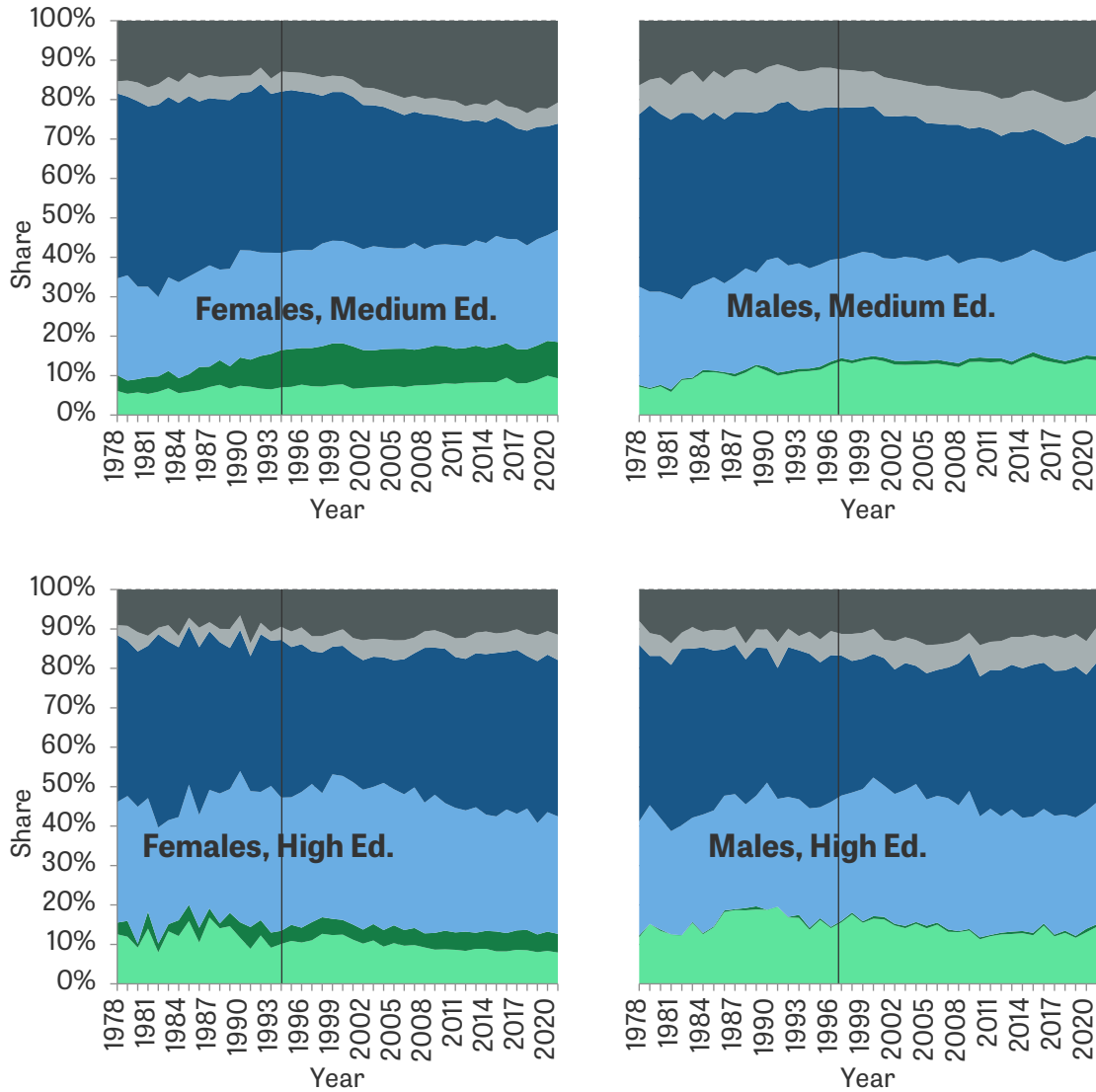
Figure 36. Share of individuals by position in the household, over time



Note: Sample is individuals aged 25–60. 'Single, children' and 'Couple, children' refer to children aged 0–18. Parents of adult children are categorized as 'other'. Pre-1994 'adult child' refers only to adults living in a household whose head is their parent due to data limitations.

Figure 37. Share of individuals by position in the household, by sex and education, over time



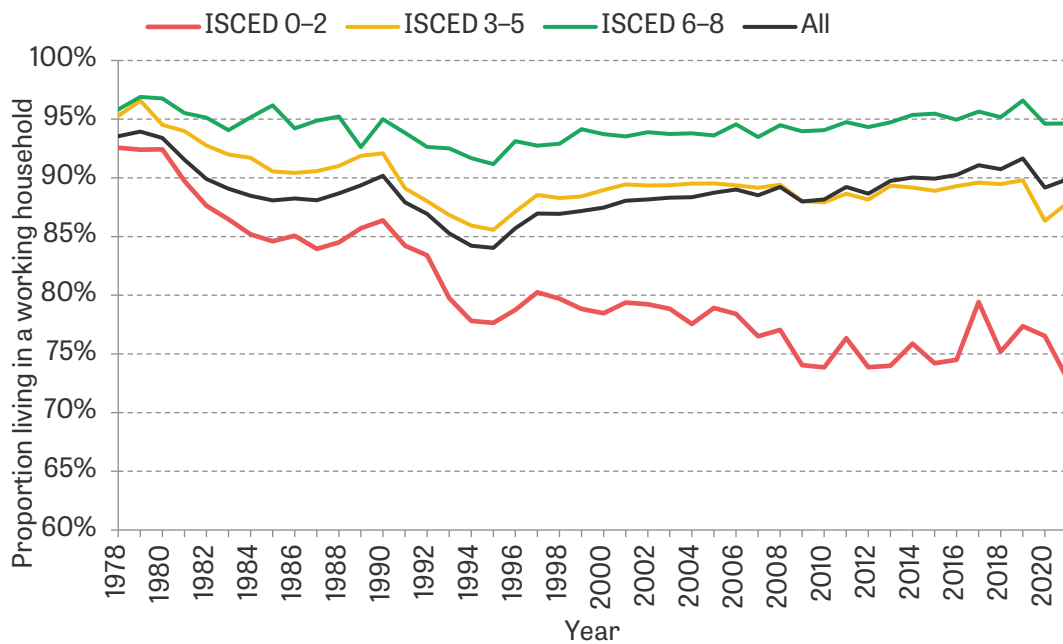


Note: Sample is individuals aged 25–60. 'Single, children' and 'couple, children' refer to children aged 0–18. Parents of adult children are categorized as 'other'. Pre-1994 'adult child' refers only to adults living in a household whose head is their parent due to data limitations.

6.2 Earnings and incomes among working households

Rising levels of employment since the mid-1990s mean that the share of individuals a working household has risen over the last few decades, as illustrated by Figure 38. In particular, the share of graduates in a working household increased from 92% in 1995 to 97% in 2019 (before the pandemic hit). Since the late 1990s, there has been a decline in the share of those with no or low-level qualifications in a working household, though part of this is likely to reflect the fact that this group is increasingly negatively selected.

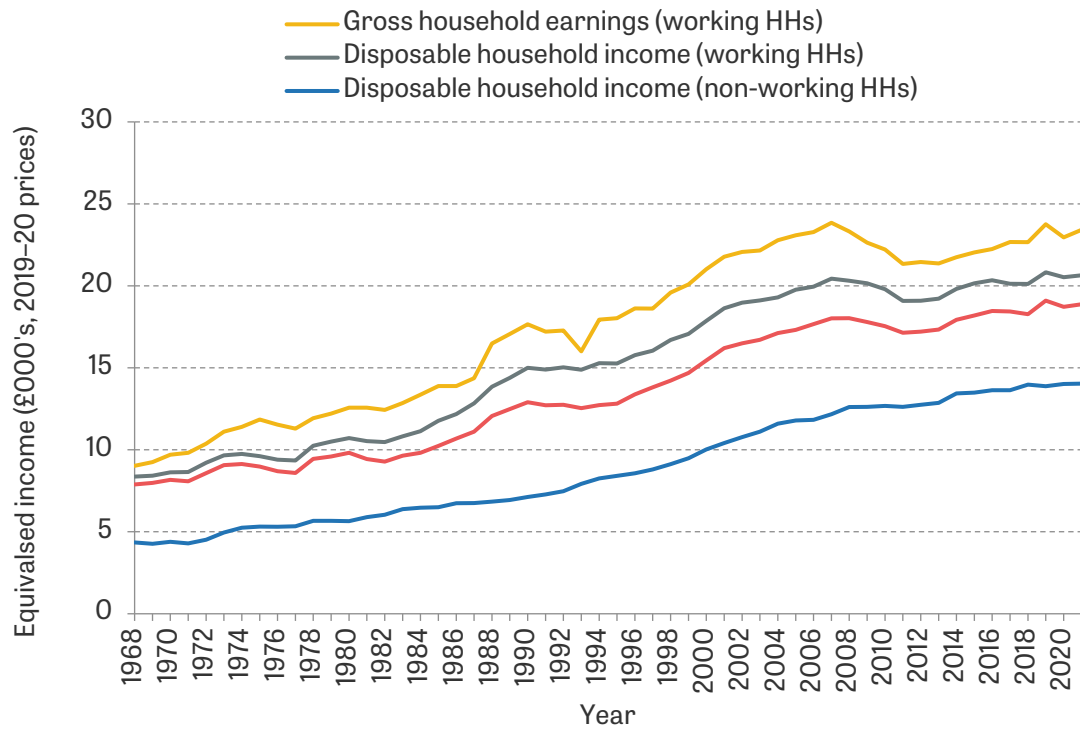
Figure 38. Share of individuals in a working household, overall and by education, over time



Note: Sample is individuals aged 25–60. A working household is defined as a household in which at least one adult is in work.

We now consider how all the trends above combine to explain trends in household earnings, and how interactions with the tax and benefit system generate trends in disposable household income. Figure 39 shows gross household earnings and disposable household income over time for working households. The trend in disposable household income is similar to earnings, but smoother, as tax and benefit changes have smoothed out economic shocks over the years. The trend in disposable household incomes for non-working households, and therefore overall, is smoother still, as labour market shocks have less of an effect on the incomes of this group. Furthermore, compared to many countries in this set of reports, increases in state benefits have in general allowed the incomes of workless households to grow alongside growth in working households over the long run.

Figure 39. Median real gross household earnings and disposable household (HH) income among working households, over time

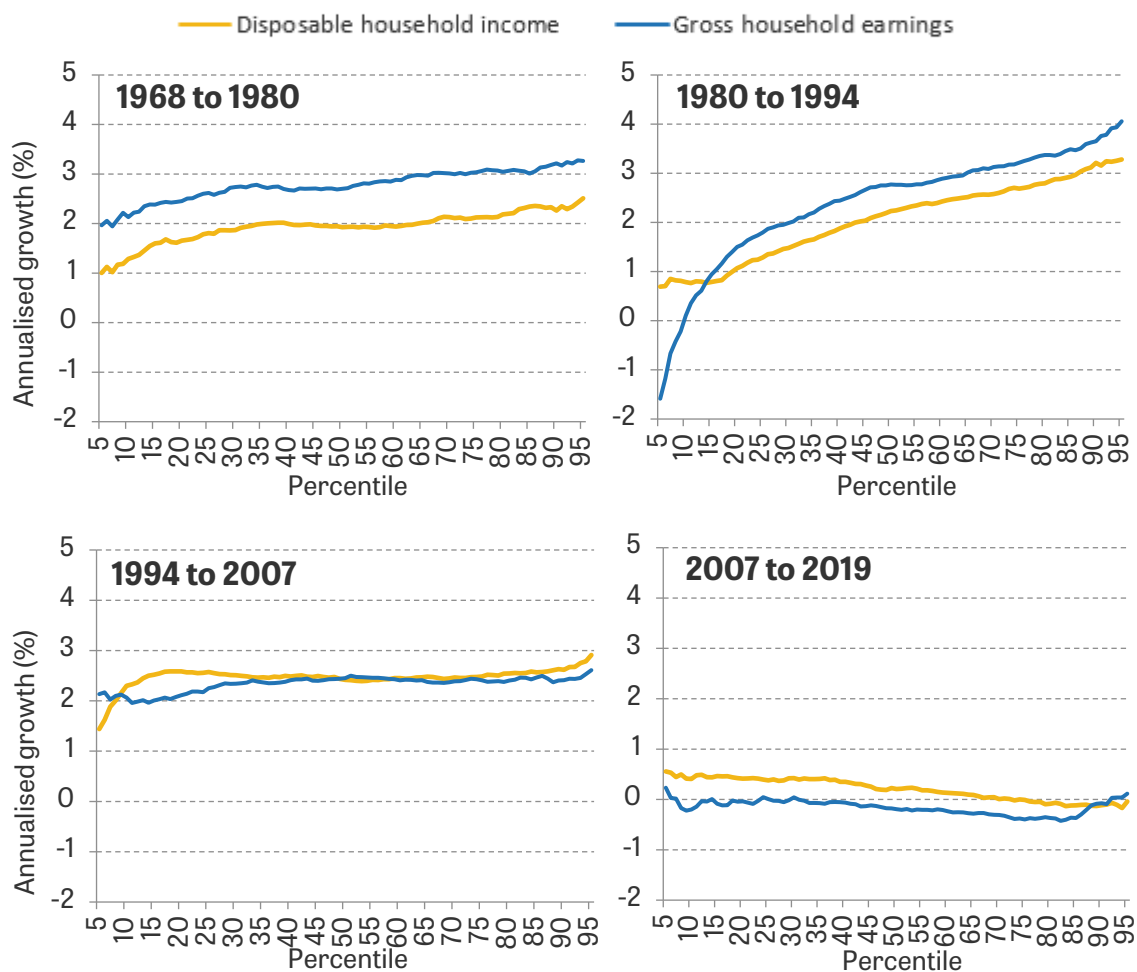


Note: Sample is individuals aged 25–60. A working household is defined as a household in which at least one adult is in work. For median gross household earnings we have restricted the sample to those with strictly positive household earnings. All incomes have been equivalised using the modified OECD equivalence scale.

Figure 40 shows that for most of the last five decades, taxes and benefits dampened the impact of rising earnings inequality on disposable income inequality among working households. In the periods between 1968 and 1980 and between 1994 and 2007, disposable household incomes grew by the same amount across the distribution, despite stronger growth in household earnings towards the top of the distribution. The tax and benefit system also dampened the rise in household earnings inequality in the 1980s, though the effect was far from complete. Between 1980 and 1994, disposable household incomes among working households rose by an average of 3.7% a year at the 95th percentile of household incomes, compared to 0.9% at the 5th percentile; the corresponding figures for household earnings were -1.7% and 4.2%, respectively.

Since 2007, household earnings have either been stagnant or fallen slightly across the distribution. The tax and benefit system has supported incomes particularly for low-earning working households. But this distributional pattern is driven by the Great Recession, and Cribb et al. (2023) show that since 2011, when the acute crisis was over, the pattern reversed. More progressive hourly wage growth for males and females, in part driven by the minimum wage, as well as an end to the downward trend in low-wage males' hours, resulted in reduced inequalities in household earnings in the bottom 85% of the distribution. For example, earnings grew by 1.9% per year for at the 10th percentile and just 1% at the 90th. However, large cuts to working-age benefits meant that inequality actually increased in disposable household income, which grew by 0.6% for the 10th percentile, and 0.8% for the 90th, among working households. The most recent decade therefore stands in contrast to those before, with tax and benefit changes offsetting decreasing earnings inequality, rather than the other way around.

Figure 40. Annualised growth in real gross household earnings and household disposable income for working households, by percentile, selected years

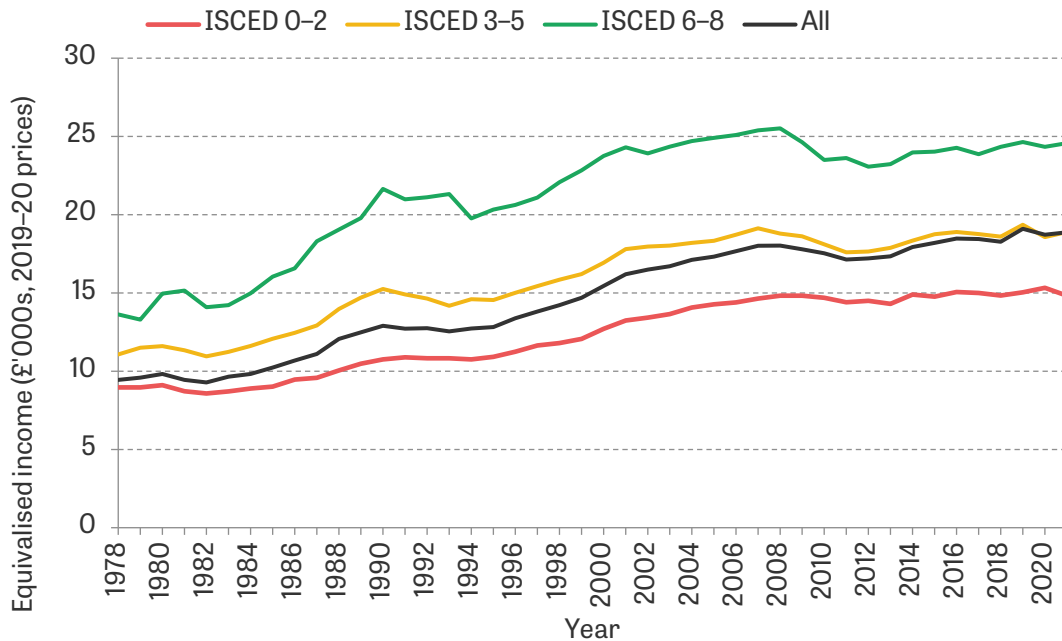


Note: Sample is individuals aged 25–60 in working households. A working household is defined as a household in which at least one adult is in work. For the household earnings series we have restricted the sample to those with strictly positive earnings. All incomes have been equalised using the modified OECD equivalence scale.

6.3 Inequality in incomes among all households

This section brings together the trends shown above to look at inequality in disposable household incomes across all households. Figure 41 shows that median real disposable household incomes stagnated for lower-educated groups and fell for those with degree-level qualifications (ISCED 6–8), who saw a fall in wages during the Great Recession and were less eligible for support made available during the crisis. There was only a very muted response to average disposable incomes during 2020 and 2021 despite the economic disruption caused by the pandemic.

Figure 41. Median real disposable household income for all households, overall and by education, over time

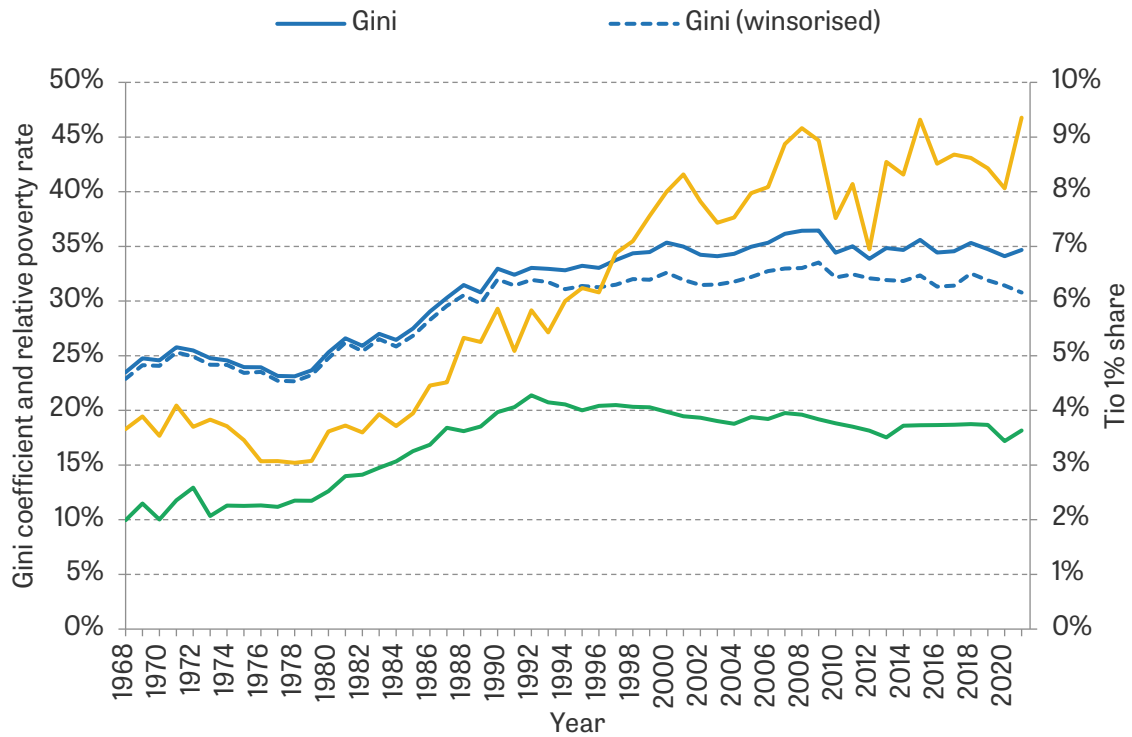


Note: Sample is individuals aged 25–60. Incomes are in 2019–20 prices. All incomes have been equivalised using the modified OECD equivalence scale.

Figures 42 and 43 show that measures of inequality in disposable household incomes – including the Gini coefficient, the top 1% share, the relative poverty rate and the 90:10 ratio – were relatively stable in the 1960s and 1970s before rising sharply in the 1980s. Inequality across most of the distribution (the 90:10 ratio) and at the bottom of the distribution (the relative poverty rate) fell between 1990 and the Great Recession, as the tax and benefit system offset rising earnings inequality for working households, and rising employment rates reduced earnings inequality across all households. However, rising inequality at the top (the 1% share) meant that the Gini coefficient remained stable over this period.

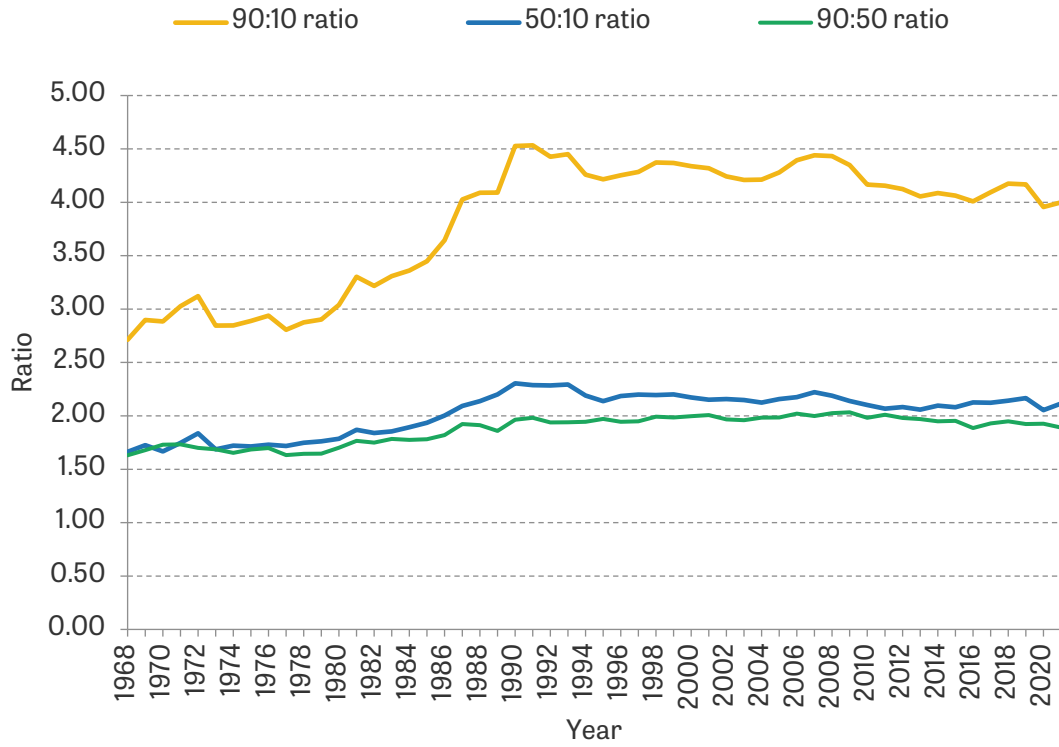
The Great Recession saw reductions in the Gini coefficient and the 90:10 ratio, likely driven by support delivered through the welfare system during the acute crisis as the labour market struggled, while the share of income of the top 1% fell. From the recovery from the recession up to 2019, however, there was an uptick in the 90:10 ratio, driven by increasing inequality in the lower half of the distribution, because of reductions to working-age benefits as discussed above. Relative poverty has therefore also increased as growth in bottom incomes lagged behind the median. Meanwhile, share of the top 1%, while volatile in part due to measurement difficulties, has increased since the post-recession fall.

Figure 42. Gini, relative poverty and top 1% share of net household income for all households, over time



Note: Sample is individuals aged 25–60. The inequality measures are based on incomes measured net of taxes and benefits but before housing costs have been deducted. The relative poverty rate is defined as the proportion of people living in households with less than 60% of contemporaneous median income before the deduction of housing costs. All incomes have been equivalised using the modified OECD equivalence scale. Incomes below 0 are winsorised to 0 due to data limitations. The winsorised Gini series is also winsorised at the 99th percentile.

Figure 43. Percentile ratios of disposable household incomes for all households, over time



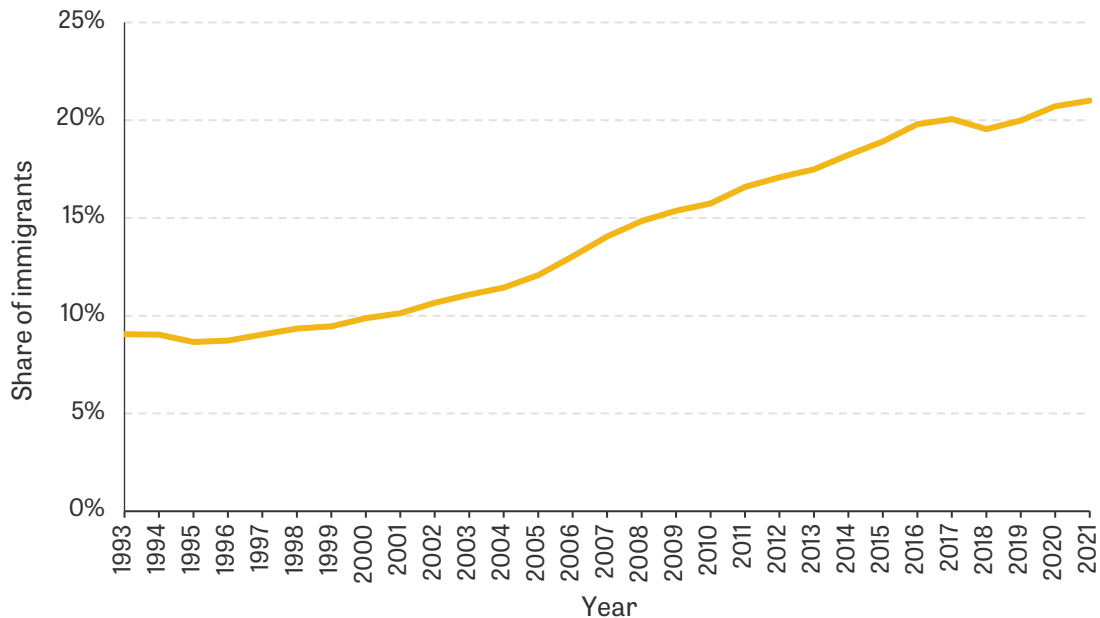
Note: Sample is individuals aged 25–60. The inequality measures are based on incomes measured net of taxes and benefits but before housing costs have been deducted. All incomes have been equivalised using the modified OECD equivalence scale.

7. Immigration

This final section examines changes in the population that are driven by changes in immigration. In this section we take the definition of an immigrant as a person who was born abroad, noting that this will include both British citizens born to British parents abroad, and people who arrived in the UK after birth to non-British parents but who have spent essentially all their life in the UK.

Figure 44 shows that the fraction of the working-age (25–60) population who were born abroad was broadly flat through the mid 1990s, rising in the late 1990s, and accelerated after 2004 when the European Union expanded and the UK allowed citizens of new member states to come to the UK. This chart uses data from the Labour Force Survey (LFS), rather than the Family Resources Survey (FRS), as the FRS only contains this information since 2008, though it shows similar patterns since then. The Figure shows that the fraction of the working-age population that was born abroad rose from 9% in 1993 to 15% in 2008 to 21% in 2021.

Figure 44. Share of immigrants in the population 25–60 years of age, 1993–2021

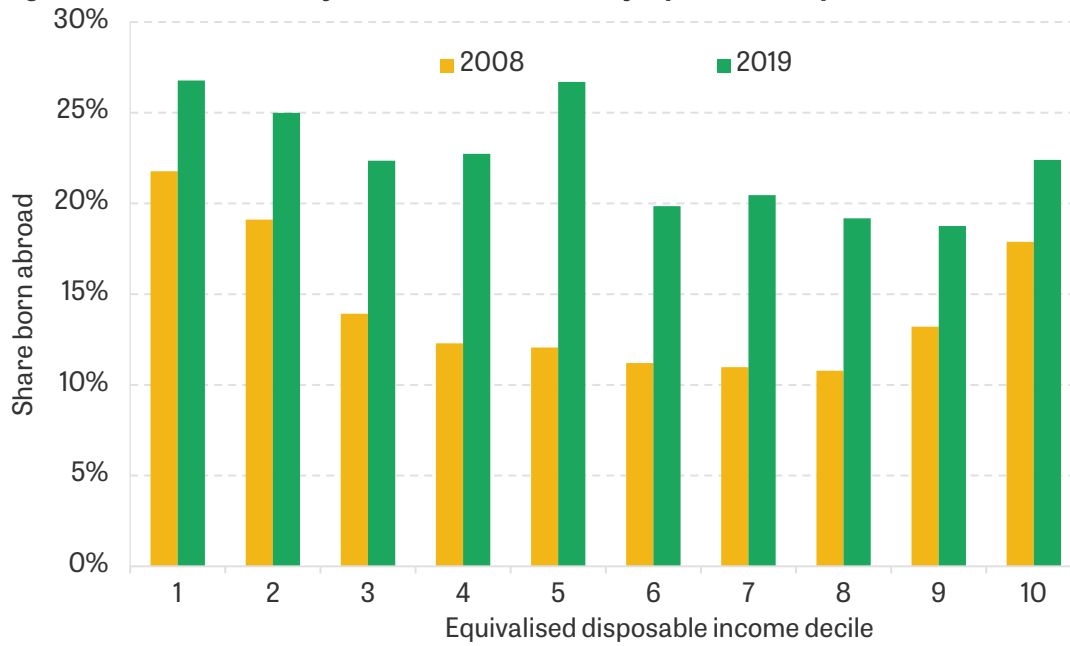


Note: Sample is individuals aged 25–60. A migrant is defined as someone who was born outside the UK.

Source: Labour Force Survey.

Figure 45 shows the position of immigrants in the income distribution, and how that has changed. Immigrants in 2008 were particularly clustered towards the bottom, and top, of the income distribution, but by 2019 this had changed and they were much more evenly spread across the population, with the biggest growth in the middle of the distribution over the 11 years. Figure 46 shows that on average, immigrants have very high education levels and similar labour market outcomes to UK born people, with the exception of lower levels of female employment. On average, median disposable income is 7% lower than for the British-born population.

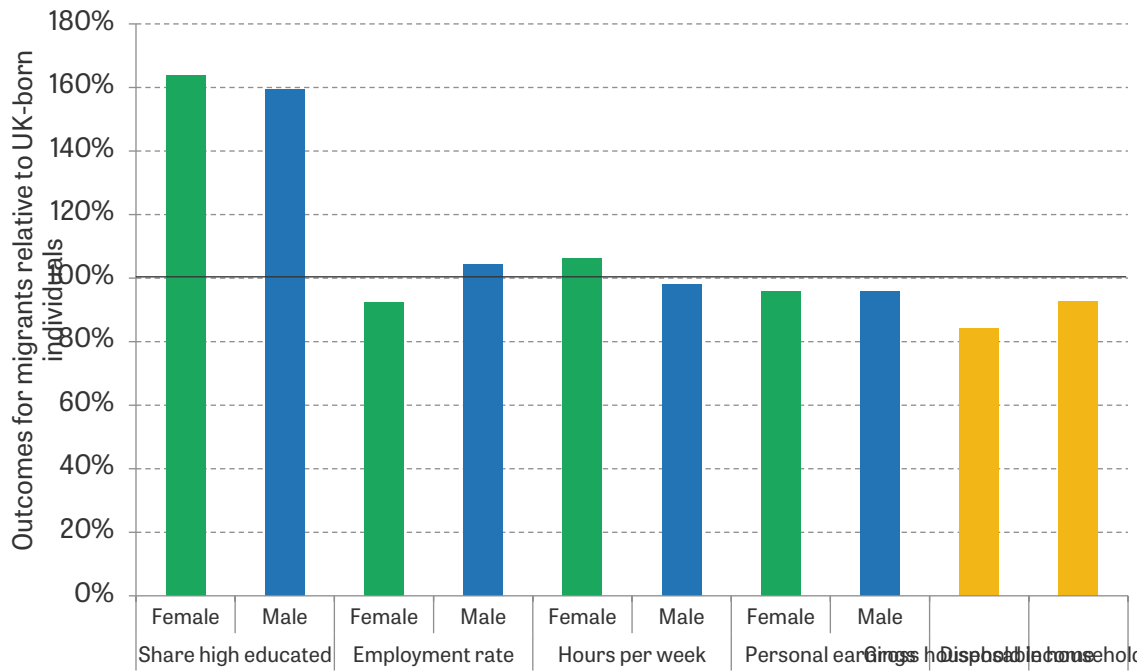
Figure 45. Share of 25–60-year-olds born abroad, by equivalised disposable income decile,



Note: We only observe immigration status in the FRS from 2008 onwards. Sample is individuals aged 25–60. A migrant is defined as someone who was born outside the UK. The relative poverty rate is defined as the proportion of people living in households with less than 60% of contemporaneous median income before the deduction of housing costs.

Source: Family Resources Survey.

Figure 46. Outcomes for migrants relative to UK-born individuals aged 25–60, 2019–20



Note: Sample is individuals aged 25–60. A migrant is defined as someone who was born outside the UK. Household incomes have been equalised using the modified OECD equivalence scale.

8. References

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Data

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9. Data appendix

Surveys used:

- We use cross-sectional data from the Family Resources Survey (FRS) for the years 1994–2021, the Family Expenditure Survey (FES) for the years 1968–93, and the Labour Force Survey (LFS) since 1975.
- The FRS is a cross-sectional survey of usually 20,000–30,000 households per year. It collects detailed data on earnings, hours of work, and incomes from a variety of sources, as well as other characteristics of the households and their members. It is the basis for official statistics on income poverty and income inequality in the UK as calculated by the UK's Department for Work and Pensions. Years are UK financial years running from April of the stated year until the following March.
- The FES is a cross-sectional survey of around 7,000 households per year. Its primary purpose is to collect information on household expenditure on goods and services, but it also collects information on earnings and income from other sources, as well as other characteristics of the households and their members. We use the FES for years before 1994 when FRS data were unavailable.
- The LFS is a long running cross-sectional survey of around 100,000 people per quarter since 1992. It has been a quarterly survey since 1992 and was annual (or less frequent) between 1975 and 1991. It mainly collects information on individuals' background characteristics and labour market statistics. We only use these data for looking at unemployment rates and the immigration chart.

Measurement of hours, earnings, income

- Earnings from employment are measured by asking respondents who were employed at the time they were surveyed the amount they were paid on the pay date closest to the interview. These earnings (plus bonuses received over the last 12 months) are converted into nominal annual amounts.
 - In the FRS, where respondents report that their last pay was unusual for particular reasons (absence, irregular overtime, tax rebates), we take their self-reported 'usual pay' rather than their last pay.
- Earnings from self-employment are measured by taking the previous year's accounts of those self-employed at the time of survey, as submitted to HMRC, and measuring the profit or loss. We then uprate this amount to current year's earnings. In some circumstances, such as when accounts are unavailable, we use alternative data on the amount of money they usually draw from their business, or if they have no business, information on their income after paying for materials, equipment etc.
- Benefits in kind are not recorded fully either for employees or for the self-employed (for whom they are likely to be particularly important). Benefits in kind include vehicles, computers and mobile phones purchased by the business that are also for personal use. The value of these can be difficult to quantify. Therefore, the overall value of the monetary benefits other than income from self-employment in particular is likely to be underestimated.
- Information is also collected on benefits households are claiming at the time of survey, and the value of the most recent payments. In some cases, where an amount received is reported as unusual, we use the self-reported 'usual' amount received. The benefit payments are then converted into an annual amount based on the payment period covered.

-
- For those at the top of the income distribution, we make an adjustment when looking at total disposable household income, drawing from data from HMRC's Survey of Personal Incomes (SPI). This adjustment assigns those with income above a very high threshold an income amount derived from the SPI, which is an estimated average income for those above that threshold in the population. The purpose of the adjustment is to deal with low response rates from individuals with very high incomes, and volatility in reports of their incomes.

Weighting

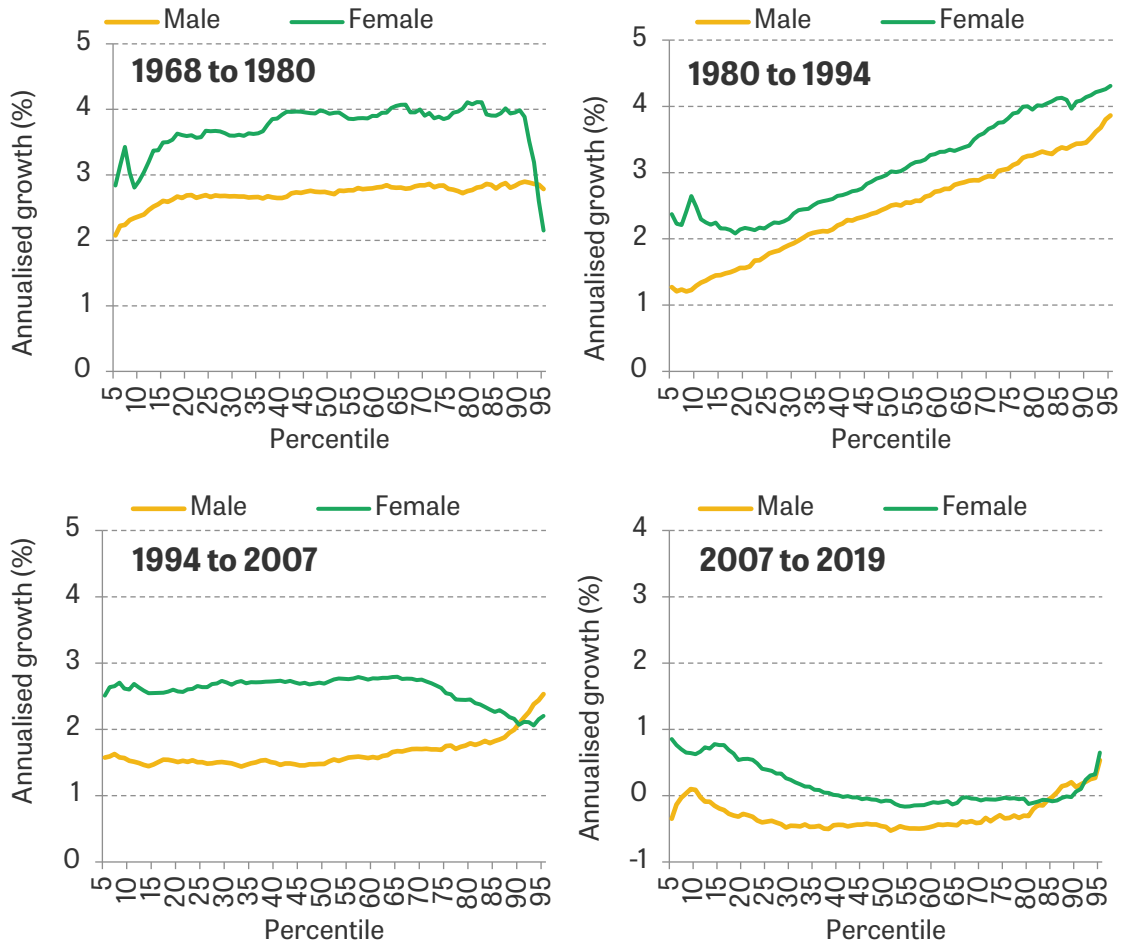
- In all surveys responses are weighted up to population totals to make the data representative along a variety of characteristics, including (depending on the year) age, sex, region, tenure and family type.

Data collected during the pandemic

- During 2020–21, the FRS continued to be collected, but fieldwork was disrupted, with face-to-face interviewing replaced with telephone interviewing for the whole of 2020–21. Sample size was also reduced to around half the size of recent years. Response rates were affected, for example those from lower-educated groups responded less than in previous years, and there was an imbalance in the size of the sample throughout the year.
- In order to mitigate the impact on response rates in particular, the weighting methodology was changed to ensure representativeness of different education groups, and to ensure that statistics were a representative year average.
- Questions on earnings, hours, incomes etc. were the same, but it cannot be ruled out that differences in the sample and question methodology affected statistics based on these, so increased caution should be exercised when interpreting results from 2020–21 and to a lesser extent 2021–22.

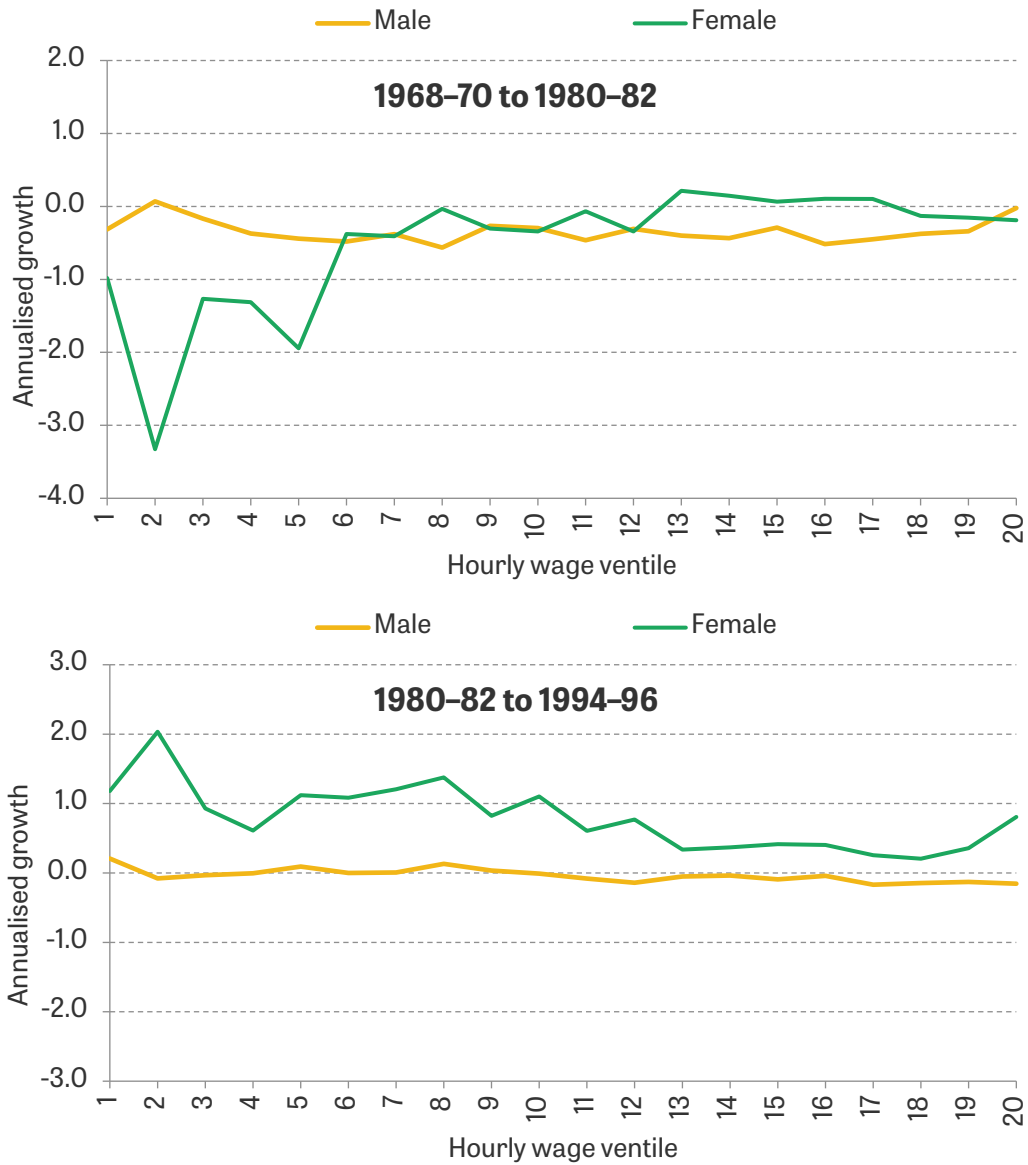
10. Appendix: additional charts

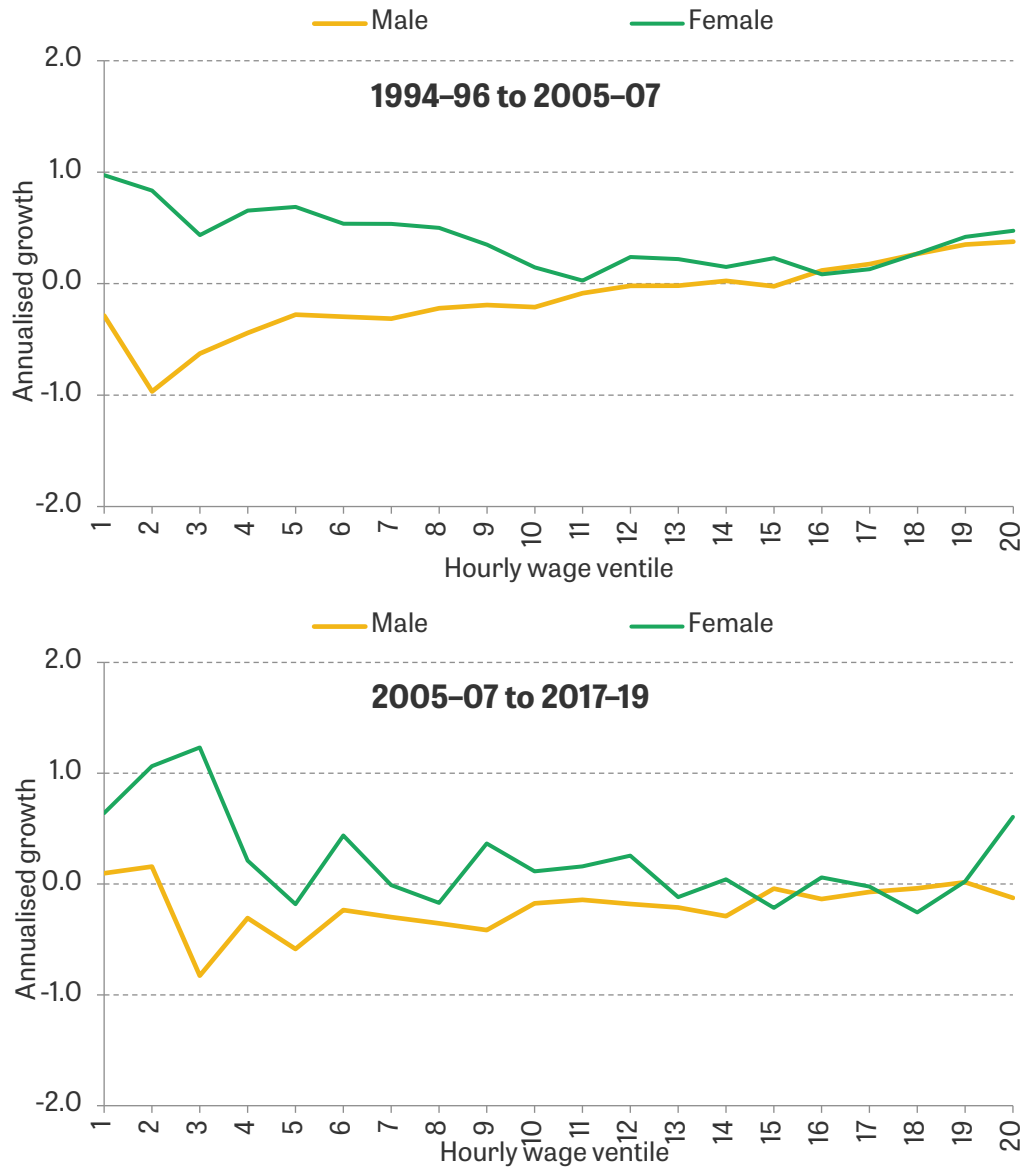
Figure 47. Annualised growth in hourly wages among employees by wage percentile, overall and by sex, selected periods



Note: Sample is employees aged 25–74 with strictly positive hourly wages.

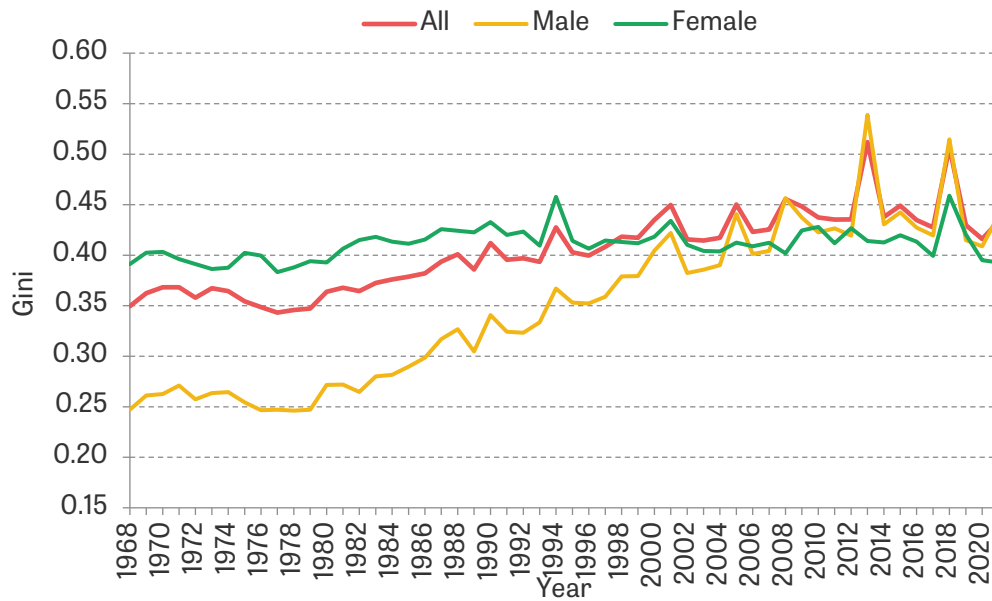
Figure 48. Annualised growth in mean hours worked among employees by hourly wage ventile, overall and by sex, selected years





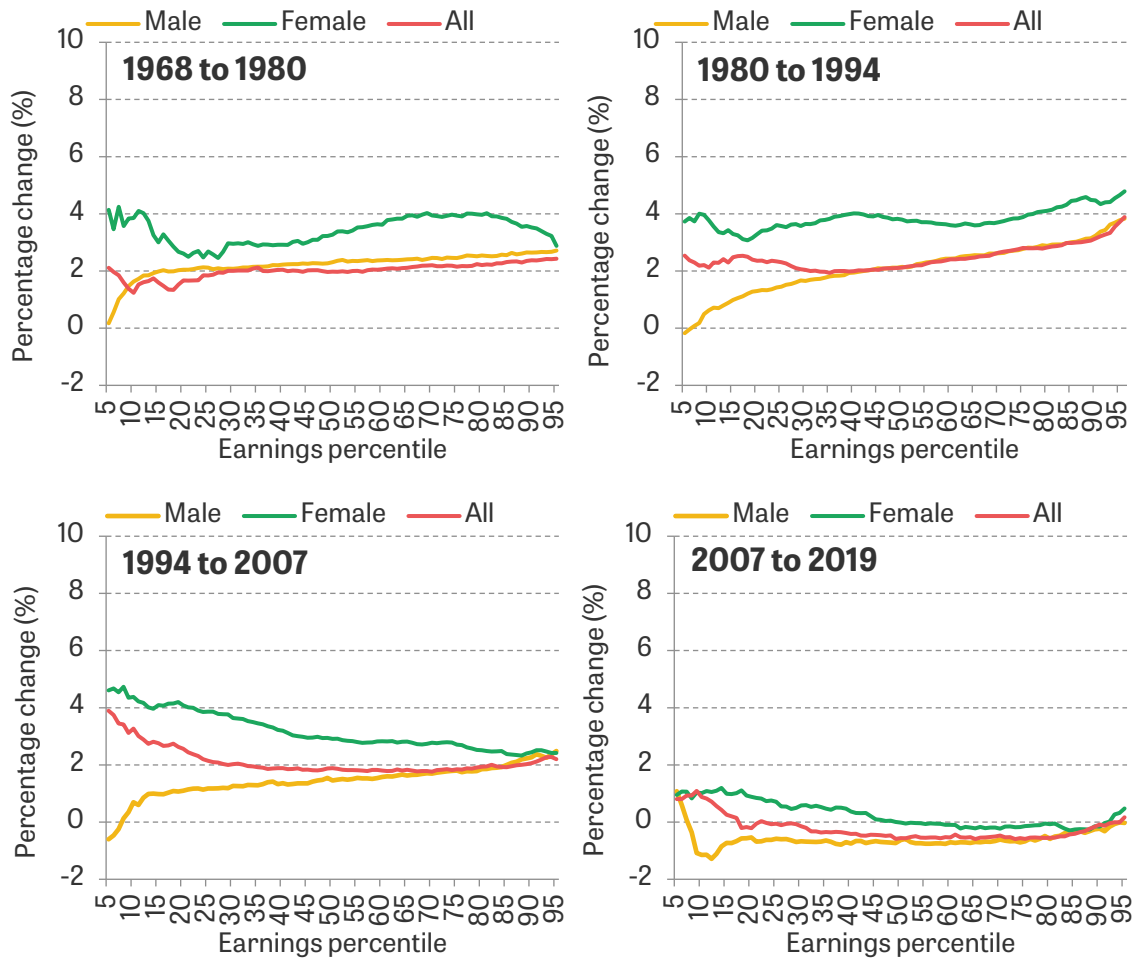
Note: Sample is employees aged 25-74 with strictly positive hourly wages. We pool data from across the three years to obtain the hourly wage for each 3-year period.

Figure 49. Gini coefficient of gross individual earnings, overall and by sex, over time



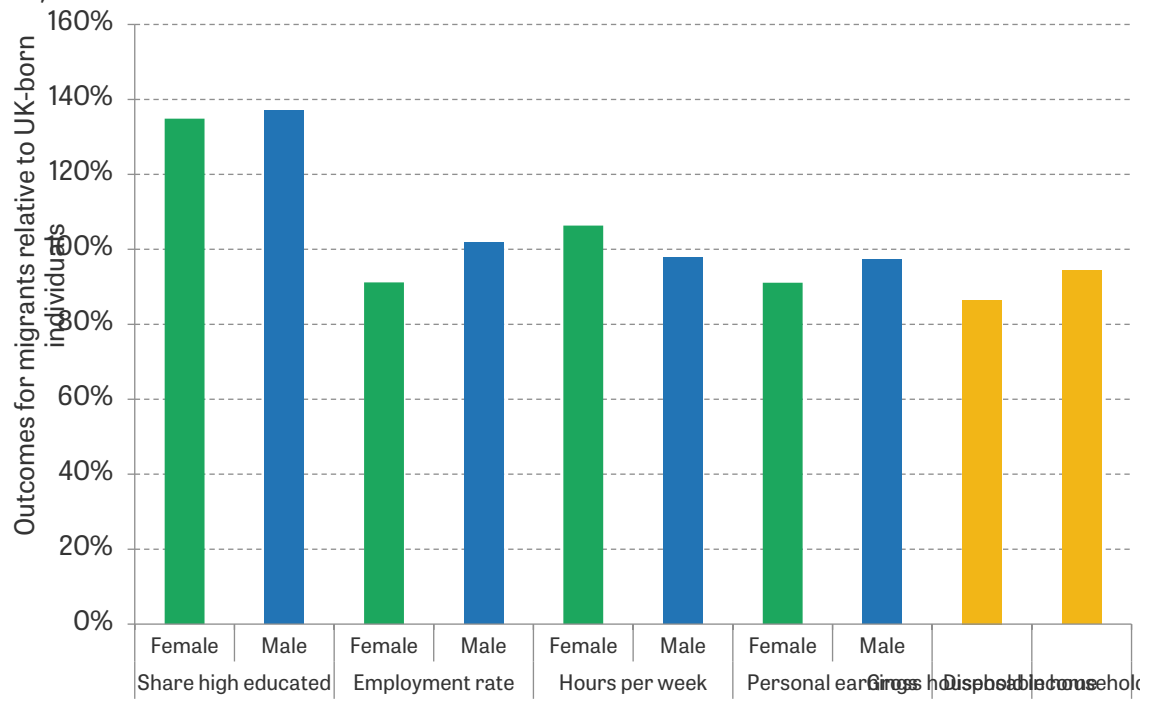
Note: Sample is individuals in work aged 25–74 with strictly positive earnings. We exclude the bottom and top 1% of the gender-specific gross earnings distribution.

Figure 50. Annualised growth in gross earnings by earnings percentile, overall and sex, selected periods



Note: Sample is individuals in work aged 25–74 with strictly positive earnings.

Figure 51. Outcomes for migrants relative to UK-born individuals, and their children, aged 25–45, 2019



Note: Sample is individuals aged 25–45. A migrant is defined as someone who was born outside the UK. Household incomes and earnings have been equalised using the modified OECD equivalence scale.