Office for National Statistics

Article

Generational income: The effects of taxes and benefits

The effects of direct and indirect taxation and benefits received in cash or kind on household income, across the generations and by age.

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Release date:
21 August 2019

Next release:
To be announced

Table of contents

1 . Main points

- Up until those born in the 1970s, each generation tended to have higher median household income than people of the same age born a decade earlier.
- While households led by people born in the 1970s had higher median incomes than previous generations at younger ages, lower average annual income growth between the ages of 35 and 44 years meant that by their early 40s, they had a comparable income with those born in the 1960s.
- At each age, households with heads born in the 1980s have broadly comparable median incomes with those born in the previous decade, and have also seen slower growth in income between ages 25 to 34 years, compared with those born in the 1960s and 1970s.
- For those aged 25 years and above, almost every generation has paid more in taxes, including both direct and indirect, than those born in the previous decade did at the same age.
- Similarly, most generations have also received more in benefits, both cash and in-kind, at the same age than those born before them, reflecting increased spending in real terms on cash benefits, education and health services since the mid-1990s to the early 2010s.
- In recent decades incomes among those aged 55 to 64 years have grown, increasing the extent to which this age group now pays more in taxes than they receive in benefits; those aged 25 to 54 years are also net contributors, but to a lesser degree than in previous years.

2 . Introduction

There is increasing demand for statistics on equality of opportunity, and outcomes across generations. Most recently, the House of Lords Intergenerational Fairness and Provision Committee report on Tackling Intergenerational Unfairness (PDF, 1.23MB) discussed “the idea that each cohort should retain a fair expectation of social improvement and can have a fulfilling life without being unduly harmed by the actions of a previous or subsequent cohort”.

The report explicitly recommended that the Office for National Statistics (ONS) should begin by “introducing a generational breakdown of the Effects of Tax and Benefits on Household Income dataset and releasing a backdated time series of this data”. This article and accompanying datasets, in part, aims to fulfil that recommendation, providing analysis of average incomes, taxes (both direct and indirect), and benefits (cash and in-kind) for different generations at different ages, based on data from the Effects of taxes and benefits on UK household income.

3 . Information about this release

How is income measured?

This article uses disposable income as its main measure of income. Disposable income is the amount of money that households have available for spending and saving after direct taxes (such as Income Tax and Council Tax) have been accounted for. It includes earnings from employment, private pensions and investments, and cash benefits provided by the state. Disposable income is measured before accounting for the housing costs that households face.

This analysis also includes measures of indirect taxes and benefits-in-kind. Indirect taxes are taxes on final consumer goods and services, and include duties on alcoholic drinks, tobacco, petrol, oil, and betting. Benefits-in-kind are notional income allocated to households, that stem from the provision of goods and services provided by the government. The largest part of this is National Health Service (NHS) and state education spending.

Generations

There is no formally agreed definition of different generations, and terms such as “millennial” often mean different things to different people. To address these issues, this analysis uses decade of birth as its definition of generation. For example, people born between 1920 and 1929 are in the 1920s group.

Household reference person

The Office for National Statistics publication Families and households: 2018 showed that in recent years young people are increasingly likely to live at home. A possible consequence of this is that the average household income of younger people in more recent generations will be higher than previous ones, as it will increasingly include their parents’ incomes.

To ensure comparisons of generations are on a like-for-like basis, this analysis is presented on the age and decade of birth of the household reference person. The household reference person is the person with the main responsibility for the property, for example, the person who owns the property, or who is legally responsible for the rent. If this is joint, the household reference person is the person with the highest income. If the income is the same, then the eldest person is selected.

Using this unit of analysis ensures that the income of a 25-year-old living with their parents is not directly compared with the income of a 25-year-old living alone. However, a consequence is that it excludes direct comparisons of young people who live at home, for example. Users should be aware of this when interpreting these statistics.

Accounting for changes in prices and household composition over time

To allow household income to be compared across generations fairly, all data are deflated and presented in financial year ending (FYE) 2018 prices. Incomes are adjusted for inflation using the Consumer Prices Index including owner occupiers’ housing costs (CPIH) excluding Council Tax.

Incomes are equivalised, which means adjusting for the number of people living in the household. Equivalisation recognises that households with many people may need more income than those with fewer people, but that a two-person household does not require double the income to maintain the same standard of living as a single-person household.

This analysis uses the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale (PDF, 165KB).

Data

Effects of Taxes and Benefits (ETB) data is derived from the Office for National Statistics Living Costs and Food Survey (LCF). The LCF is a voluntary sample survey of around 5,000 private households in the UK per year.

LCF and ETB datasets are currently available for 1977 to financial year ending 2018. However, it has not been possible to produce this analysis for years 1977, 1979, 1981 and 1984. While this is unlikely to have a significant influence on the results, work is ongoing to resolve the issues for future analyses of generational income.

Birth decade calculations

Decades of birth were calculated by taking the household reference person's year of birth and grouping into decades. Data on the year of birth was not available for all datasets in the timeseries. The year of birth was calculated by taking the household reference person's age from the survey year. This was done for all survey years, to be consistent.

4 . How does income change by age and generation?

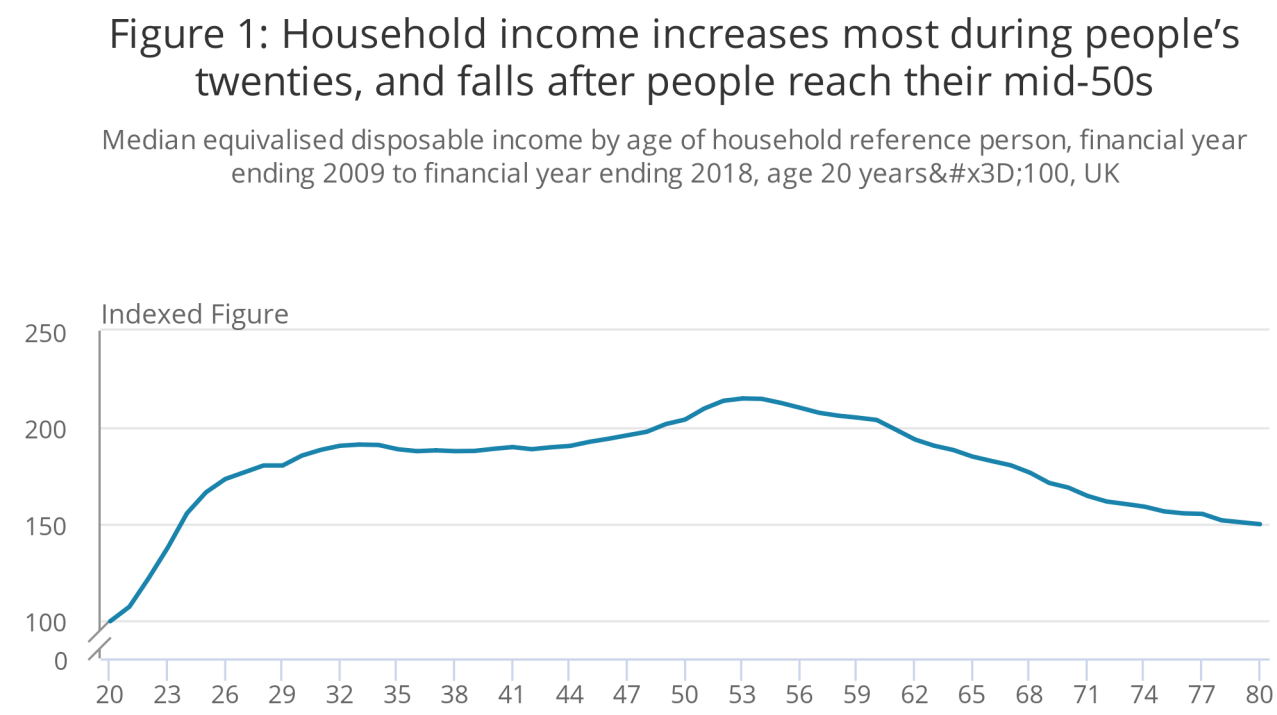
Figure 1 highlights that the evolution of household income over the life course can be split into three distinct periods. The first is during a person's early working life, where median household income increases most steeply; it is almost 1.9 times greater for households with heads at age 30 years compared with age 20 years. This is corroborated by analysis presented in Young people's earnings progression and geographic mobility, England and Wales: tax year ending 2012 to tax year ending 2016, which highlights that earnings progression is much faster in earlier years, particularly between ages 16 to 24 years.

Then, between age 30 to about 50 years, average household income is relatively flat, likely reflecting slower earnings growth over this period. In addition, with increasing age, households are more likely to contain children, which means household income is shared between more household members. The presence of children may also lower overall household income as one or both parents may change their working patterns to provide childcare.

Finally, after a small increase among people in their early 50s, average household income starts to decrease with age, as an increasing proportion of household members move from the workforce into retirement. The lower average incomes among older retired people also reflect cohort effects, with older generations less likely to have private pensions and those that do also receiving, on average, lower amounts.

Figure 1: Household income increases most during people's twenties, and falls after people reach their mid-50s

Median equivalised disposable income by age of household reference person, financial year ending 2009 to financial year ending 2018, age 20 years=100, UK



Source: Office for National Statistics

Notes:

1. Indexing methods have been used, which set age 20 at a baseline of 100 and show the relative increase in average income from this baseline, through the ages.

2. Data are taken from an average of 10 years of Living Costs and Food Survey datasets - financial years ending 2009-2018.

3. Incomes are adjusted for inflation using the Consumer Prices Index including owner occupiers' housing costs (CPIH) excluding Council Tax.

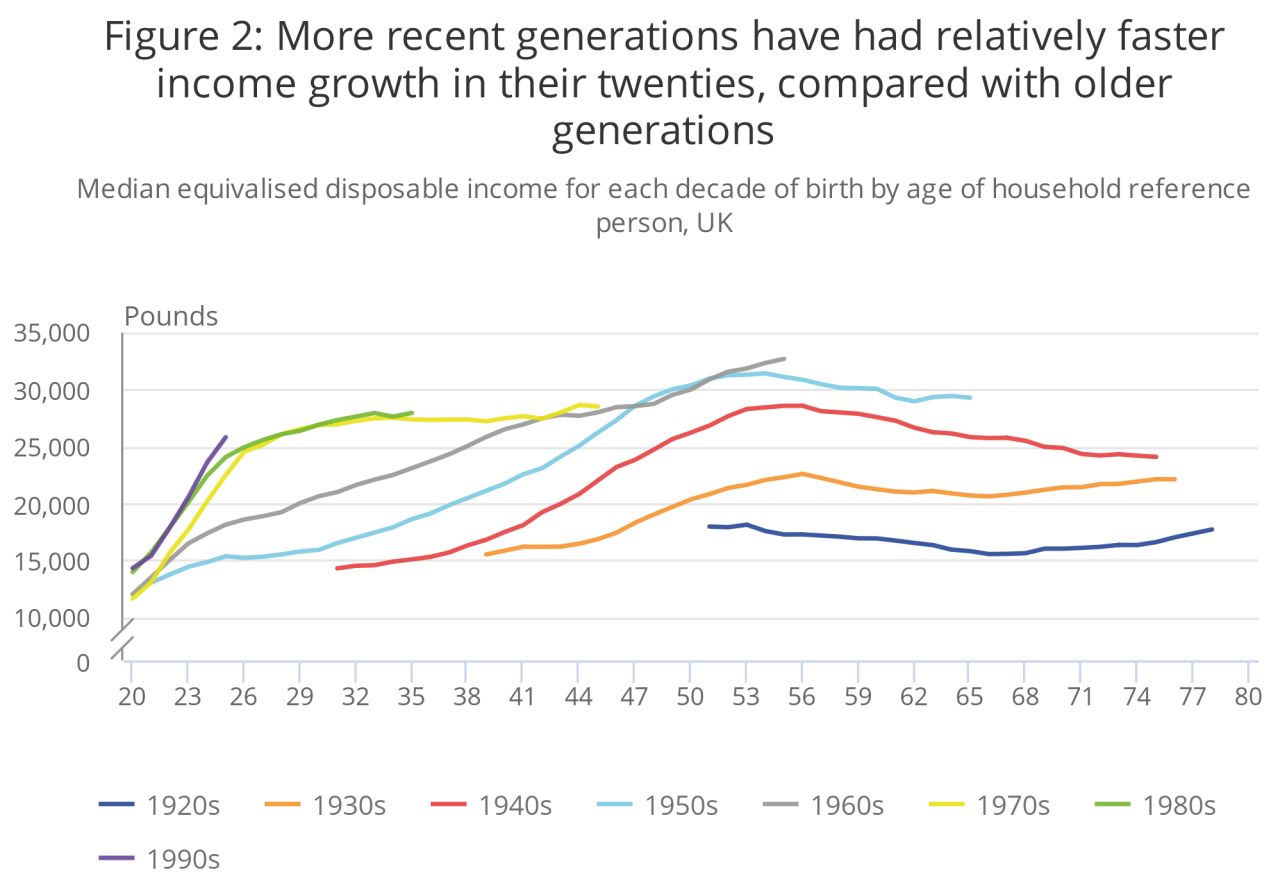
4. Incomes are equivalised using the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale.

5. Incomes data are smoothed using a 5-year rolling average over the ages.

Figure 2 examines changes in household income over the life course in more detail, highlighting differences across generations. It shows that people born in the 1930s, 1940s or 1950s had higher average incomes than the generation preceding them at similar stages in their lives. For those aged 50 years, the average income of those born in the 1930s, 1940s, 1950s was £19,000, £26,200, and £30,400 respectively.

Figure 2: More recent generations have had relatively faster income growth in their twenties, compared with older generations

Median equivalised disposable income for each decade of birth by age of household reference person, UK



Source: Office for National Statistics

Notes:

1. Each line on the chart represents a decade of birth. For example, 1920s means someone born 1st January 1920 to 31st December 1929.

2. Data are from the Living Costs and Food Survey 1978 to financial year ending March 2018, except 1979, 1981 and 1984.

3. Incomes are adjusted for inflation using the Consumer Prices Index including owner occupiers' housing costs (CPIH) excluding Council Tax.

4. Incomes are equivalised using the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale.

5. Incomes data are smoothed using a 5-year rolling average over the ages.

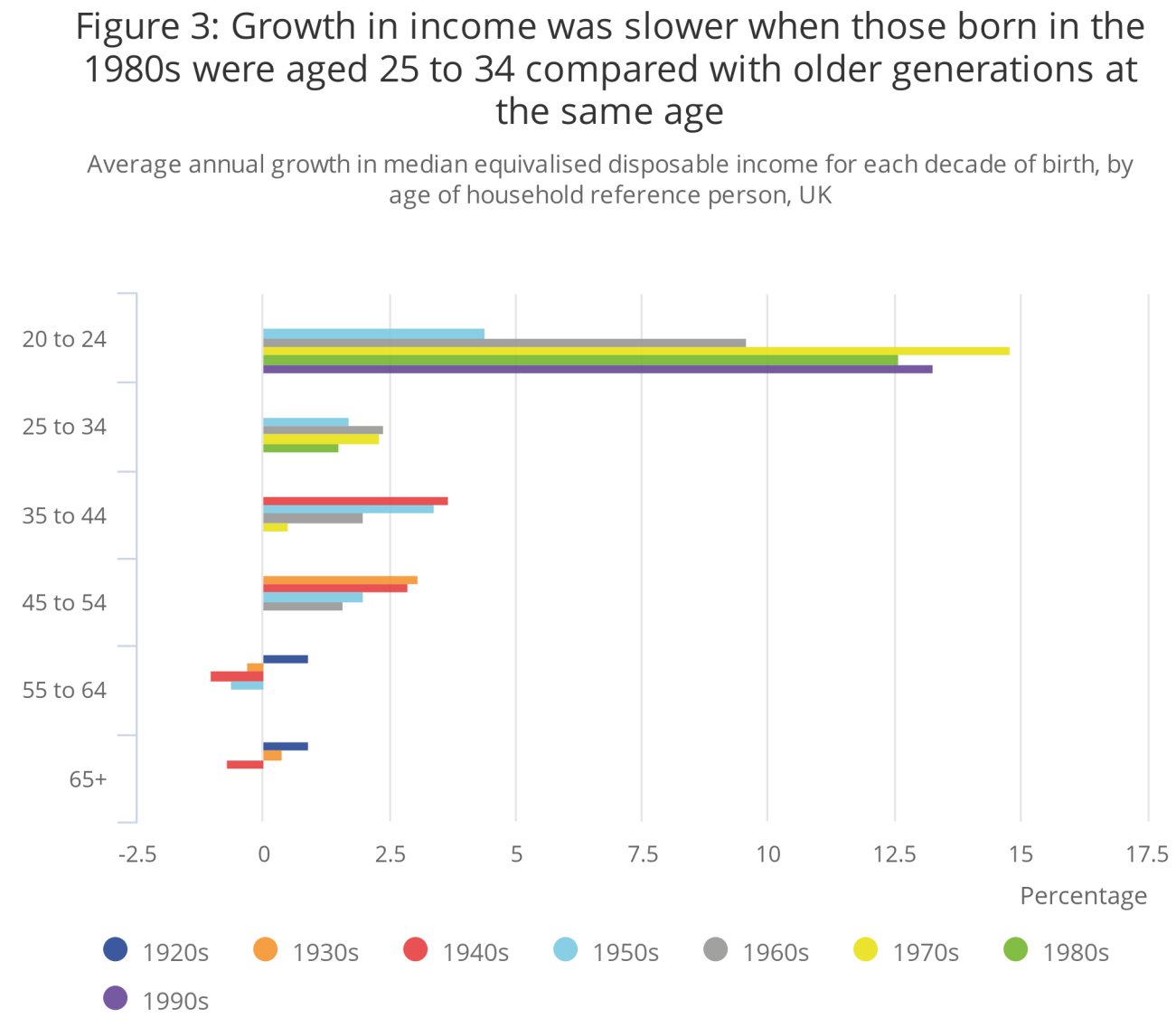
The same pattern of consistently higher average incomes than previous generations has not been seen for those born in later decades. While households led by those born in the 1970s had higher median incomes than previous generations when they were younger, relatively low average annual income growth (0.5% a year between the ages of 35 and 44 years) has meant that by their early 40s, this group have a comparable median income with those born in the 1960s. Looking at this more closely, Figure 3 presents average annual growth rate in disposable income within age bands for the different generations. It shows that average annual growth between ages 35 and 44 years, for those born in the 1940s and 1950s was 3.7% and 3.4% per year respectively. However, it then falls to 2.0% per year for those born in the 1960s and 0.5% per year for those born in the 1970s.

Figure 2 also shows that, unlike previous generations at each age, households with heads born in the 1980s have broadly comparable median incomes to those born the previous decade. They have also seen slower growth in income between age 25 and 34 years, compared with those born in the 1960s and 1970s at the same age. Average annual growth between age 25 and 34 years for those born in the 1980s was 1.5% per year, compared with 2.3% and 2.4% per year for those born in the 1960s and 1970s respectively.

Stagnating income for more recent generations compared with their older counterparts is likely to be influenced by several factors. For instance, over recent years, wages and salaries have fared worse than their historical trends. In the 10 years since 2004, when those born in the 1980s would have been aged between 25 and 34 years, and those born in the 1970s were aged between 35 and 44 years , wages and salaries per head fell by on average 0.1% per year according to the UK National Accounts. This compares with an increase of 3.9% per year over the preceding 10 years.

Figure 3: Growth in income was slower when those born in the 1980s were aged 25 to 34 compared with older generations at the same age

Average annual growth in median equivalised disposable income for each decade of birth, by age of household reference person, UK



Source: Office for National Statistics

Notes:

1. Each bar on the chart represents a decade of birth. For example, 1920s means someone born 1st January 1920 to 31st December 1929.

2. Data are from the Living Costs and Food Survey 1978 to financial year ending March 2018, except 1979, 1981 and 1984.

3. Incomes are adjusted for inflation using the Consumer Prices Index including owner occupiers' housing costs (CPIH) excluding Council Tax.

4. Incomes are equivalised using the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale.

5. The 1950s birth decade in the 20 to 24 years age group does not include anyone aged 20 years.

5 . How do taxes and benefits affect intergenerational inequality?

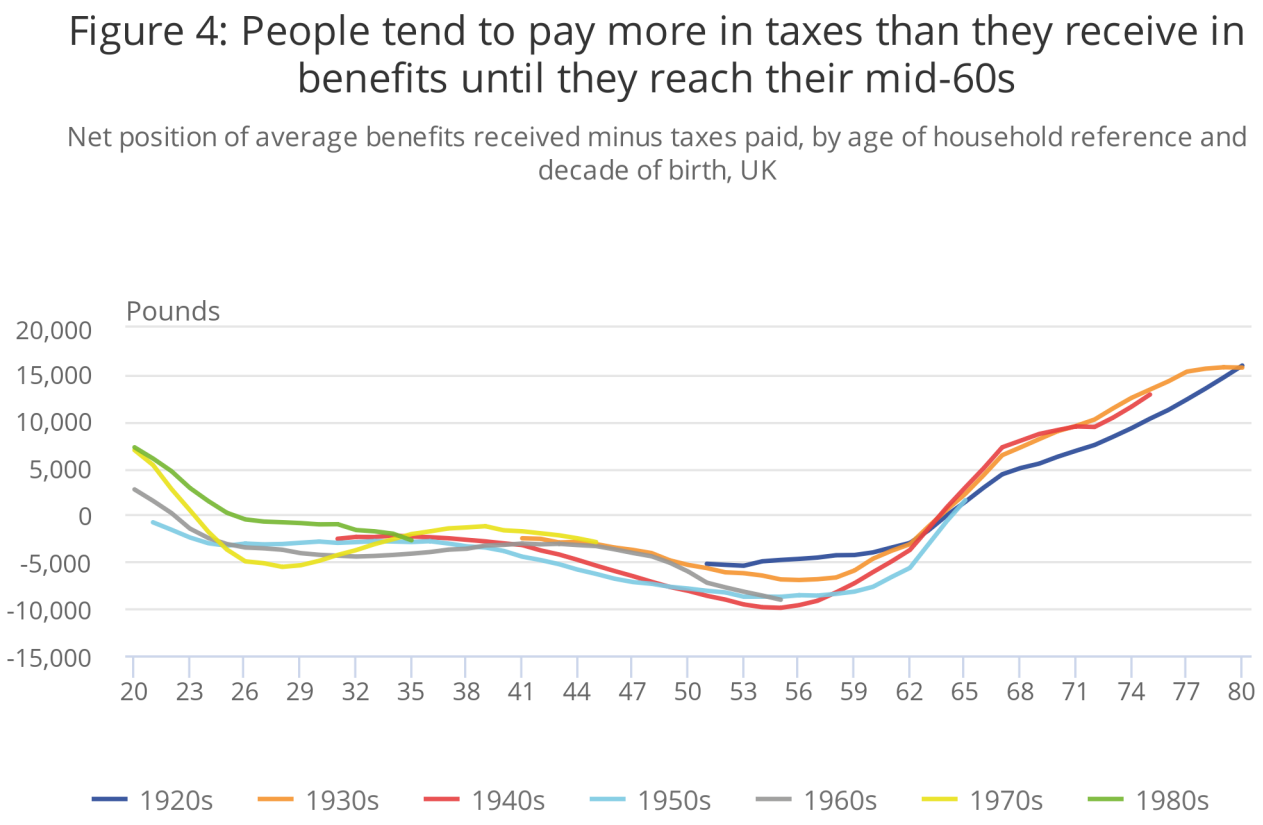
Differences in household incomes across the life course in part reflect the amount of taxes paid and benefits that they received. Figure 4 highlights how these effects of taxes and benefits are felt at each age for different generations. Benefits include both cash benefits – such as the state pension, and Job Seekers Allowance – and benefits-in-kind – including education and the National Health Service. Taxes include direct taxes – for example, Income Tax and Council Tax – and indirect taxes, such as VAT, and alcohol and tobacco duties.

The general pattern of the net position across the life course is broadly similar across the generations. On average, people pay more in taxes than they receive in benefits throughout most of their working lives, with this peaking in their mid-50s when their households are less likely to contain school-age children and therefore benefit from education services. Then, as people increasingly move towards the State Pension age and reduce the amount of time spent working, they became net beneficiaries.

However, there are some differences at different age groups depending on which generation people are born in. For instance, the net position of those born in the 1980s was much closer to zero than the preceding generations up until about age 35 years. Slightly later in life, from a person’s mid-40s until their late 50s, the net position of people born in the 1940s was lower than for those born before them in the 1920s, 1930s and after them in the 1950s and 1960s.

Figure 4: People tend to pay more in taxes than they receive in benefits until they reach their mid-60s

Net position of average benefits received minus taxes paid, by age of household reference and decade of birth, UK



Source: Office for National Statistics

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1. Each line on the chart represents a decade of birth. For example, 1920s means someone born 1 January 1920 to 31 December 1929.

2. Data are from the Living Costs and Food Survey 1978 to financial year ending March 2018, except 1979, 1981 and 1984.

3. Incomes are adjusted for inflation using the Consumer Prices Index including owner occupiers' housing costs (CPIH) excluding Council Tax.

4. Incomes are equivalised using the modified Organisation for Economic Co-operation and Development (OECD) equivalisation scale.

5. Incomes data are smoothed using a 5-year rolling average over the ages.

Figure 5 breaks this down further, examining the different taxes and benefits received by different age groups and generations. It highlights that, for those aged 25 years and above, almost every generation has paid more in taxes, including both direct and indirect taxes, than those born in the previous decade did at the same age. Similarly, most generations have also received more in benefits, both cash and in-kind, at the same age than those born before them.

Figure 5 also shows some evidence of changing patterns of redistribution across the life cycle, with the average net tax and benefit position generally increasing across the generations for those aged up to 54 years, where income from cash and in-kind benefits has risen faster than the average value of taxes paid (though those aged between 25 and 54 years remain net contributors on average). For older age groups, the net position has decreased for more recent generations as higher average incomes have led to the average amount of taxes paid rising faster than the amount received in benefits.

For example, those born in the 1950s paid on average £3,000 per year more in tax than they received in benefits at ages 25 to 34 years. This compares with those born in the 1980s, who paid £1,100 per year more in taxes than they received in benefits.

Looking more closely at benefits received during ages 25 to 34 years, the average amount received has increased generation-on-generation. Households with heads born in the 1950s received the equivalent of £6,200 a year in cash and in-kind benefits between the ages of 25 and 34. This increased to £10,300 and £11,900 for those born in the 1970s and 1980s respectively. This change is mostly driven by changes in the amount of cash benefits this group received, as well as increases in the average amount of benefits-in-kind from education spending.

The increase in cash benefits over this time reflects increased government spending in real terms over the mid-1990s, 2000s and early 2010s – encompassing the period during which those born in the 1970s and the 1980s were aged 25 to 34 years. In particular, the amount of government spending on Tax Credits increased sharply over this period. As highlighted in the Department for Work and Pensions Benefit expenditure and caseload tables , average expenditure on personal tax credits and equivalents was over three times higher in real terms during the 10 years up to financial year ending (FYE) 2013 compared with the 10 years up to FYE 2003.

Most age groups have seen an increase in average benefits-in-kind from state-provided education and health spending, generation-on-generation. This is due to increased spending in real terms on health and education over the period covered.

Switching the focus to taxes paid, Figure 5 also highlights that this has generally been increasing across generations for all age groups. However, the average paid by those aged between 55 to 64 has been rising across the generations more rapidly than the amount received in benefits. As a consequence, the extent to which this group pay more in taxes than they receive in benefits has increased. The period in which these groups paid these levels of tax corresponds to that in which younger people of more recent generations received increased levels of benefits. This highlights the role that taxes and benefits have played in reducing the inequality between generations.

Continuing the focus on the older age groups, people aged over 65 years and born in later decades have paid an increasing amount of tax per person. This is most likely due to rising employment rates for those aged over 65 years in recent times, as well as increasing incomes from private pensions. This has not been offset by an increase in average amount of benefits received, and therefore the net position of more recent generations has declined.

Figure 5: Younger people from more recent generations have tended to receive more benefits than people from older generations at similar ages

Effects of taxes and benefits by age of household reference person, and decade of birth, UK

Data download

Notes:

1. Each bar on the chart represents a decade of birth. For example, 1920s means someone born 1 January 1920 to 31 December 1929.

2. Data are from the Living Costs and Food Survey 1978 to financial year ending March 2018, except 1979, 1981 and 1984.

3. Incomes are adjusted for inflation using the Consumer Prices Index including owner occupiers' housing costs (CPIH) excluding Council Tax.

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