UK: demographic change, inter-generational inequality and fiscal sustainability

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Working Paper[1]

Introduction

The UK, like all other advanced countries - and many emerging markets economies - is experience a shift in its demographic profile that has no precedent in history. Ageing is widely discussed, but the policy consequences of inter-generational inequality on the financial (and fiscal) sustainability of future cohorts of pensioners remain unexplored.

In relative terms pensioners are the most prosperous age group today in the UK. Before chronic diseases kick in - increasingly later in life - pensioners rely on a guaranteed income in real terms thanks to the so-called 'triple lock'; they own the houses where they live and enjoy benefits such as free public transports and TV licences. In the last two decades, and in particular after the global financial crisis, public policies have been skewed towards pensioners that have gone through the post-crisis fiscal austerity almost unscathed.

The current age divide suggests that the UK faces a problem of generational fairness in the immediate, and a problem of fiscal sustainability in the future. In this paper I explore how low saving rate linked to stagnant incomes in real terms, high property prices and high levels of household debt hinder many people's ability to secure an adequate income in retirement. Will this put pressure on future governments to increase the level of benefits in order to supplement the state pensions that has been set to be just above the relative income poverty line? And will fiscal transfers and benefits have to increase in order to support pensioners that will fall below the poverty line?

In addition, increasing longevity - that is also an indicator of inequality as wealthier and better educated individuals tend to live longer and in better health - and the expansion of the age group of the over 75 - a group where chronic diseases such as dementia tend to cluster - will put further pressure on the National Health Service which in the UK is free at the point of service. Will resources be diverted from the younger to the elderly in order to keep public spending under control? Finally, how will these demographic trends impact on future reforms of the welfare state?

In this paper I sketch some of the issues around fiscal sustainability given the current demographic trends and inter-generational inequality. The preliminary conclusions of this paper are based on the simple extrapolations of current trends, trends that are likely to be exacerbated by Brexit. Although Brexit is likely to lower the UK long-term trend growth, at this stage it is difficult to estimate by how much given that there hasn't been clear indications on how the new relationship with the EU will look like. For simplicity I have left out of this paper the impact of Brexit.

This paper is organised as follows. In Section 1 I discuss the long-term demographic trends in the UK - offering also a comparison with other advanced economies - and highlight the critical points for future fiscal sustainability. In Section 2 I look at the impact of ageing and inter-generational inequality on income distribution, saving, wealth formation and indebtedness. In Section 3 I argue that the current inter-generational discrepancies will impact on the financial wellbeing of many households whose retirement income will be considerably lower than their pre-retirement one. In Section 4 I conclude by discussing the policy implications of having a larger number of people in the over 65 group - and a large group of the over 75 - who not only will require more and more medical and persona care, but will need extra pension benefits to supplement their much reduced retirement income.

[1] I am grateful to Paul Van den Noord, Torsten Schmidt and participants to the Nomura Foundation Macro Economy Research Conference held in Tokyo on 20 October 2017 for comments to earlier drafts.

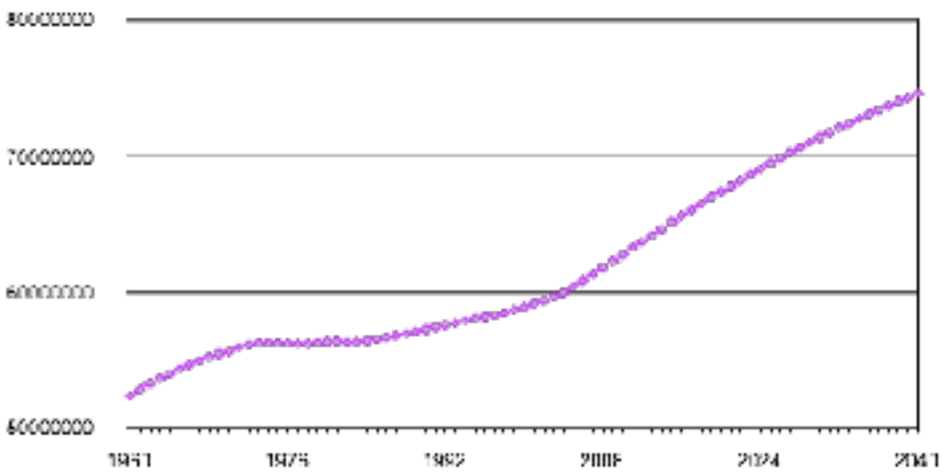
1. Setting the scene: the demographic outlook of the UK

Compared to other advanced economies demographic pressures in the UK are less severe. Since 2005 the UK population has grown at an annual rate between 0.6% and 0.8%. Currently approximately 65.6 million people live in the UK - the largest ever - and is due to continue to grow, reaching over 74 million by 2039 - the 70 million landmark is expected to be reached in 2026 (Chart 1).

Like the population of other high-income countries, the rate of natural increase[2] of the UK population has substantially dropped since the early 1960s - after the population boom in the post-war years when fertility rates of almost 3 live births per woman (Chart 2). However, unlike other high-income countries, with the exception of France, the UK rate of natural population increase has picked up at the turn of the millennium, and this, coupled with falling mortality, has ensured the natural growth of the UK population.

Today the expansion of the UK population results from relatively high fertility rates, with births outnumbering deaths, and immigration - the number of immigrants outnumbers that of emigrants. Together with the United States and France, the UK has one of the highest fertility rates among the G7 countries - 1.88 live births per woman in 2010-2015 compared with 1.69 in high-income countries, and 1.41 in Japan - the lion). This means that the rate of natural population increase in the UK will turn negative at around 2040, later than other high-income countries and G7 countries (Chart 2).[3]

Chart 1: UK population estimates and projections, 1960-2039, millions

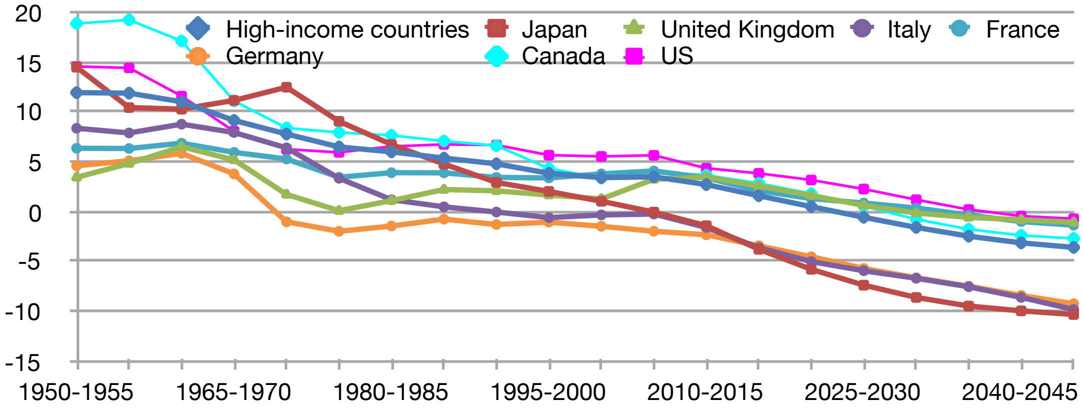


Source: ONS

[2] The rate of natural population increase is the crude birth rate minus the crude death rate. It represents the portion of population growth (or decline) determined exclusively by births and deaths. It is expressed per 1,000 population annually.

[3] Estimates from the United Nations (2017). Projections are based in constant-fertility and constant-mortality (no change variant).

Chart 2: Rate of natural increase among the G7*, 1950-2050



Source: United Nations, World Population Prospects 2017

* Natural increase by country, per 1,000 population

Like other advanced economies the UK is ageing (Table 1). Since the 1950s, improvements in healthcare and living conditions have resulted in substantial changes in life expectancy and significant extensions in longevity, with an increase in the proportion of older age groups over the total population. These improvements in survival to old age coupled with the post-war baby boom means a rapid and sustained increase in the number of people in the older age cohorts. Currently those aged 65 and over are 18% of the total population in the UK. According to the Office of National Statistics, in 2016 there were 285 people aged 65 and over for every 1,000 people aged 16 to 64 years ("traditional working age") compared with 283 individuals aged 65+ in 2015. This figure is in line with the average for the high-income countries - approximately 257 over 65 per 1,000 16-64, according to the UN figures - and it is better than other G7 countries like Japan, Italy and Germany where ageing and lower fertility rates have resulted in higher dependency rates (Table 2). Projections indicate that the UK is, once again, in the middle of the road compared with the other G7 countries and the average for high-income countries (463 per 1,000). However, with almost half of population in the older age groups, the situation remains very critical in terms of the ability to support a population that is becoming older and older.

Table 1: UK population, age distribution, 1976 to 2046 (projected)

	0 to 15 years (%)	16 to 64 years (%)	Aged 65 and over (%)	UK population
1976	24.5	61.2	14.2	56216121
1986	20.5	64.1	15.4	56683835
1996	20.7	63.5	15.9	58164374
2006	19.2	64.9	15.9	60827067
2016	18.9	63.1	18.0	65648054
2026	18.8	60.7	20.5	69843515
2036	18.0	58.2	23.9	73360907
2046	17.7	57.7	24.7	76342235

Source: ONS

Note: Population estimates data are used for 1996 to 2016, while 2014-based population projections are used for 2026 and 2036

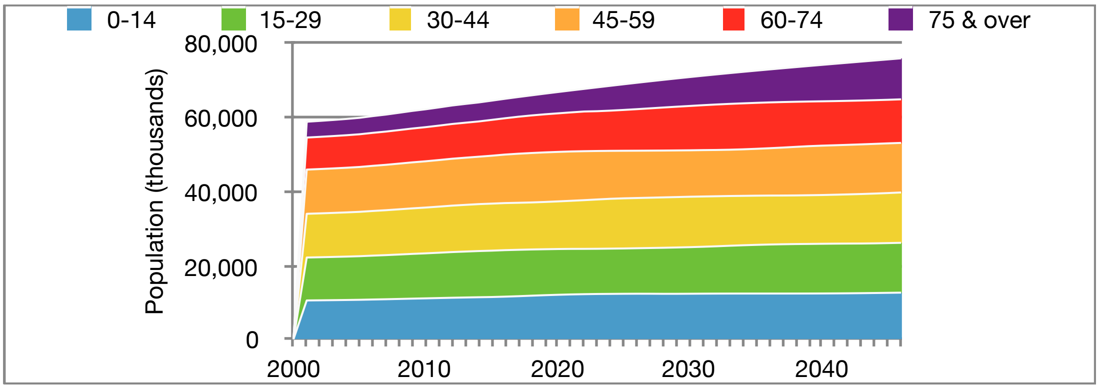
Table 2 : Old-age dependency ratios, 65+/15-64, %

Country	1950	2015	2050
United Kingdom	16.2	28.2	43.6
Japan	8.2	42.7	71.2
Italy	12.4	35.0	66.2
France	17.3	30.2	47.2
Germany	14.4	32.1	54.4
USA	12.6	22.1	36.4
Canada	12.2	23.8	43.8

Source: ONS

The breakdown of the age group of the over 65 shows another critical trend, that is the rapid increase of people aged 75 and over (Chart 3). By 2050 this age group will be approximately 15% of the total UK population compared with 7% in 2000. Over a 50-year period the group of the very old will have increased by almost 200%. Medical research supports this findings, and indeed more and more people live in relatively good health until they are in their early 80s. Three out of four deaths to women are at ages 75 and over, with two thirds of these occurring at ages 85 and over. For men, the respective figures are three out of five deaths are at ages 75 and over and half of these are at ages 85 and over.[4] So, improvements in longevity and better health conditions across many developed countries should be celebrated.

Chart 3: UK population, by age group, 2000 to 2050



Source: ONS

Note: Components of change (mid-year to mid-year), total fertility rate and expectation of life at birth based on the mortality rates for the year; 2014-based projections.

Having more people in older age groups, however, has placed, and will continue to place substantial pressures on all forms of social protection, such as healthcare and personal care, social care, and the pension system. Chronic diseases and age-related degenerative mental health conditions such as dementia tend to kick in when people are in their 80s. Dementia rates among those aged 85 and over had been

[4] Institute of Health Equity, 2017.

rising since 2002 - i.e. since when comprehensive data are available.[5] Between 2002 and 2015, the increase in dementia as contributing to the cause of death in women aged 85 and over and a 250% increase for men was approximately 175%. Even if we take into account the increase in the rate of identifying dementia in the population, these figures still reflect the impact of the increase in the number of the over 80. As dementia and Alzheimer's have become the most common cause of death in women aged 80 and over (37,252 deaths) and in men aged 85 and over (12,258 deaths) and these are the most common ages at which people now die, then dementia and Alzheimer's are the most common causes of death in the UK.

Improvements in longevity have benefited the whole population, but benefits have accrued rather unevenly. Regional differences as well as differences in education and income levels have resulted in demographic inequality. Life expectancy tends to be higher in the more prosperous south-east than in more depressed north, and even in the same region, differences in education and income determine higher, or lower, high expectancy. For instance, life expectancy for men is 74 in the northern city of Blackpool and 83 in Kensington and Chelsea, the wealthiest area of London. For women life expectancy stretches from 79 in Manchester to 86 in Kensington and Chelsea. And within Kensington and Chelsea the gap in life expectancy among the richest and the poorest male residents is approximately 14 to 15 years. For women the largest gap is 12 years in Stockton on Tees and Middlesborough.[6]

To summarise the findings so far, the UK is experiencing the ageing of its population like other advanced countries although less severely than Japan and Italy. However, the trends for the next 30 years are clear. First, the over 65 will be a quarter of the UK population. Second, the increase of the over 75 will be even steeper, and this age group will be approximately 15% of the UK population by 2050. Third, the old age dependency ratio will increase from the current 28.2% to 43.6%. Fourth, demographic inequality will persist. These are long-term trends that will affect both the UK macroeconomic outlook and the fiscal sustainability. In addition, as I will discuss in the next section, without appropriate policies the current trends will exacerbate cross-generation inequality as well as regional and income/wealth inequality.

2. Where we are

In this section I look at how the demographic trends highlighted in the previous section, and in particular the increase in the dependency rate intersect with, and affect income distribution, wealth distribution and saving. In this section I will also discuss the impact of policies that were introduced in recent years as a response to the sustainability of the pension system and, more generally, of the welfare system.

Over the last two decades the UK experienced significant price moderation that resulted in historical low inflation levels and a large increase in the participation rates to the labour market. These two trends drove the growth of household incomes in the decade up to the early 2000s; this growth was then followed by a pre-crisis slowdown and a post-crisis squeeze. In 2014 and 2015 low oil prices and the strengthening of nominal pay growth pushed overall household incomes above their pre-crisis peak - a mini-boom in real pay growth as the Resolution Foundation refers to it. Even so, the average earnings remain far below the highs seen before the financial crisis while the proportion of income going to the top 1 per cent has grown since the crisis.[7] In addition, income, and consequently saving, wealth and debt, is unevenly distributed among age groups. Relatively strong growth among older households – even in recent years – mean that those aged 65+ no longer form the poorest group. In contrast, incomes among households aged 25-44 do not yet appear to have recovered from their pre-crisis levels. Age differences are a major division in how income growth plays out in today's Britain,[8] as I will discuss in the following sections.

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[5] This is due to an increase in the rate at which dementia was certified as contributing to the cause of death by doctors.

[6] Institute of Health Equity, 2017.

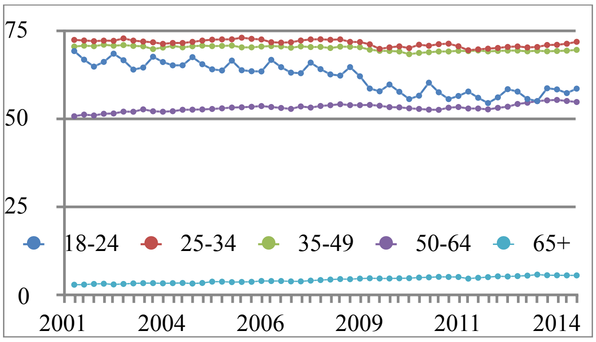
[7] Corlett and Clarke (2017) pp. 6-7.

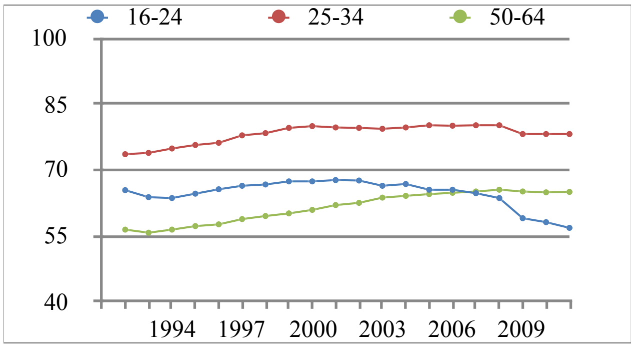
[8] Corlett and Clarke (2017) pp. 6-7.

2.1 The labour market, by age group

Since the early 1990s a combination of robust output growth and policies, such as the reform of the pension system and the postponement of the retirement age - as well as in the number of years necessary to qualify for the state pension - has brought more people to the labour market, and especially those in the age group over 50 (Charts 4.a and 4.b). The percentage of people who continue to work, full- or part-time, when they reach state pension age has grown from 3% of the total active population in 2001 to approximately 6% in 2017.

Chart 4.a and 4.b: UK, participation rate to the labour market, %, by age





Source: ONS

However, unpublished work on the 2014-2015 ELSA survey shows that those active tend to concentrate in the 'younger' end of the over 65 group: only a small minority (4% of men and 2% of women) were still in work past 75 years of age.[9] Health conditions play a significant role in individuals' decision to stay in paid employment after they reach state pension age. In other words, delaying state pension eligibility has significantly increased the participation rate among those in the age group 50-64, but has only partially addressed the issue of longevity. Going forward, therefore, unless eligibility for state pension is pushed above the age of 75 - a measure politically controversial - then marginal increases in the participation rates are unlikely to address the rising dependency rate in the UK.

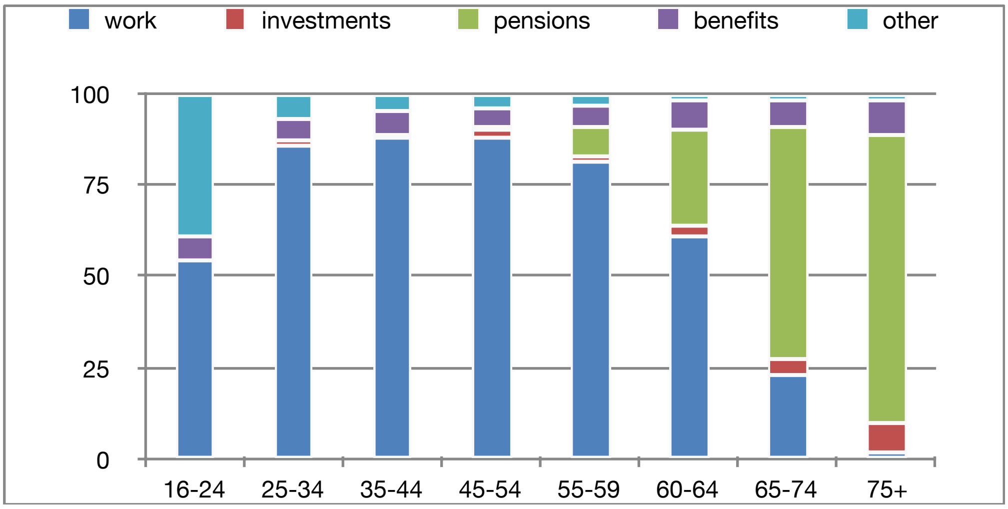
2.2 Income distribution and benefits, by age group

To better illustrate the constraints on the public sector budget and the challenges to the UK's fiscal sustainability that lie ahead, we need to consider the main sources of income for different age groups. Chart 5 shows that for the working age groups paid employment is the main source of income; for the older groups state support, that includes the basic state pension, is the main source of income along with occupational pension. So households containing only pensioners receive approximately 80% of their income from state support and occupational pensions. Earnings and investment make a significant contribution to household income only for the households in the top half of the income distribution, and the proportion of income from occupational pensions is greater than that from state support receipt for those in the top 25% of the income distribution.[10]

[9] The Wellbeing, Health, Retirement and the Lifecourse project (2017)

[10] See Department for Work and Pensions, 2017a, table: Income sources as a percentage of gross income by percentile, 2015/16, p.6.

Chart 5 : Sources of total gross household income by age of head, 2015-26, %



Source: Department for Work and Pensions, Family Resources Survey, 2015/16

Earnings are the main source of income for households that have only working-age adults and are above the 20th percentile in the income distribution - a larger proportion of their household income than all other income sources combined. For instance, earnings account for over 80% of gross income for those in the 90th percentile compared with approximately 30% for those in the 10th percentile. The proportion of household income from earnings exceeds that received from state support for around 70 per cent of the UK population (those above the 29th percentile). Households containing children tend to receive state support, but the proportion of this, vis-à-vis the household's overall income, depends on the eligibility to state support.

Following the classification used by the Resolution Foundation,[11] I break down the income distribution in three groups - bottom, low-to-medium and high income - based on average disposable income for household (Table 3). Those in the bottom group rely on benefits for more than 50% of their gross income. The rate of benefits on income considerably decreases as the income increases.

According to the Resolution Foundation's calculations, in the UK approximately 3.8 million households rely on benefits for half or more of their income, with about 35% of individuals living in these households is in paid work. Half of these households have an income of no more than £7,000 a year. However, the net average household income for this group, including benefits and excluding direct taxes and other deductions, is £14,600.

Approximately 5.8 million households are in the low to medium income (LMI) group with incomes of between £12,000 and £36,000; 85% of individuals aged 25-55 among this group are in paid work. Half of these households take home no more than £14,000 a year while the average net household income (including benefits excluding direct taxes and other deductions) is £23,300 a year.

95% of individuals within the 9.6 million households on higher income are in paid work. The average net household income is £51,600 while half of higher income earners take home no more than £28,000. The annual income of 85% of these higher income households is below £70,000 - only 180,000 households have annual income in excess of £200,000.

[11] Corlett and Clarke (2017), pp. 81-9

Table 3: Income, taxes and benefits per household (£ per year)

	Bottom	Low-to-medium			High income
Original income	7153	13877	26983	43261	84747
plus cash benefits	7612	9632	6837	4747	2878
Gross income	14765	23509	33820	48008	87625
less direct taxes etc	1626	2632	5268	9170	20139
Disposable income	13139	20877	28552	38838	67486

Source: ONS

In terms of income distribution, younger and older households tend to be overrepresented towards the bottom of the income distribution. This is consistent with the income rising over the span of one's working life and career, before falling back in retirement. What is unusual, and a source of inter-generational inequality, is the differential in the pace of income growth for different age groups in recent years. Amid an overall fall in income growth in the years after the global financial crisis - from 2000-01 to 2007-08 median working-age income grew by an average 1.7% a year while it dropped by 0.9% a year from 2008-09 to 2012-13 - the younger households appear to have been particularly badly hit in recent years, with high underemployment, a deeper wage squeeze, housing pressures and benefit cuts.

Not only differentials in wage growth, but cuts to working-age benefits and freezing of benefits in nominal terms, that were introduced first by the Coalition government (2010-2015) and then carried on by the Conservative government of David Cameron (see Box 1), have also widened inter-generational income disparities. The value of working age welfare - jobseeker's allowance, child benefit for first child, child tax credit - have dropped in real terms since 2009. The freeze in all working-age benefits and housing allowances is due to continue until 2020 and is due to more than offset the impact of tax cuts on household incomes in the years to come.[12]

The freeze in all working-age benefits compares with the increase in the real value of the basic state pension over the same period.[13] Typical pensioner incomes have been growing consistently faster than working-age ones – ten times as fast, in fact, since the mid-2000s. This has meant a in pensioner poverty and has helped reduce overall inequality - even if there are inequalities within this group too as women accumulate less pension income than men.[14] However, this has led to another distortion, that typical pensioner incomes after housing costs are now higher than those of a typical working-age household.

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12 Corlett and Clarke (2017), pp. 76-9.

13 Corlett and Clarke (2017), p. 26.

14 Even when men and women may have similar labour market histories and earn at similar levels in their respective pay distributions, gender pay gaps still impact on pension accumulation. For instance, in 2016 earnings terms, a man earning at the 70th percentile accumulates about £40 a week/£2,080 a year more pension than a woman earning at her 70th percentile – about 14% more. See The Wellbeing, Health, Retirement and the Lifecourse project (2017).

Indeed incomes for households headed by 25-44 year olds are still not back to their pre-crisis peak, while incomes among pensioner households have grown by 9%.[15]

2.3 Savings and debt by age group

Inter-generational differences in income growth inevitably reflect on savings and thus on the accumulation of assets, notably houses. Overall, Britain has a low saving rate as a percentage of disposable income. Net household saving as a percentage of household income is -1.1% compared with 8.1% in France, 9.6% in Germany and 6.0% in the US.[16]

The financial debts of individuals, which are included in their financial wealth, decrease with age. More significant financial debts are accumulated early in life, such as student debt, with over 80% of individuals with liabilities against the Student Loan Company held by those aged 22-34. Mortgages (and other debt) are secured against properties.

68% of households on low to medium income and almost half of the higher income households have less than one month's net income held in savings (Table 4). While living on the breadline is expected for households on benefits (86% with less than a month savings), it is more surprising to find that many low-to-medium and higher income families live in precarious financial conditions with stretched household finances.

Data from the Bank of England's NMG Survey supports this claim. Only 35% of the poorest 20% of working-age households feel that they have enough saved for emergencies, compared to over half of the rest of all working-age households. Perhaps unsurprisingly approximately 43% of low to medium income households would like to save at least £10 a month more but they cannot afford it.

Table 4: Number of months' net income held in savings/financial assets by families, UK, 2014-15, %

	Benefit reliant households	LMI households	Higher income households
< 1 month	86	69	47
1 < 2 months	2	7	11
2 < 6 months	4	11	19
6 months +	8	13	23

Source: Corlett and Clarke (2017), p. 88.

As well as saving for unexpected costs, individuals and households find difficult to save for retirement. About 55% of people surveyed in the Wealth and Assets Survey indicate low income as the main reason for not contributing toward a pension.[17] However, since the introduction of auto-enrolment in pension schemes - in 2014 for the largest companies, in 2015 for companies with 50 to 249 employees and in 2017 for the smallest companies - the number of people contributing towards their pension has increased - currently 39% of individuals on low-to-medium income contribute toward their pension.[18] This percentage is due to increase, which is positive. However, it remains to be seen whether the savings will

[15] Corlett and Clarke (2017), pp. 45-6.

[16] OECD Household Accounts, https://data.oecd.org/hha/household-savings.htm#indicator-chart

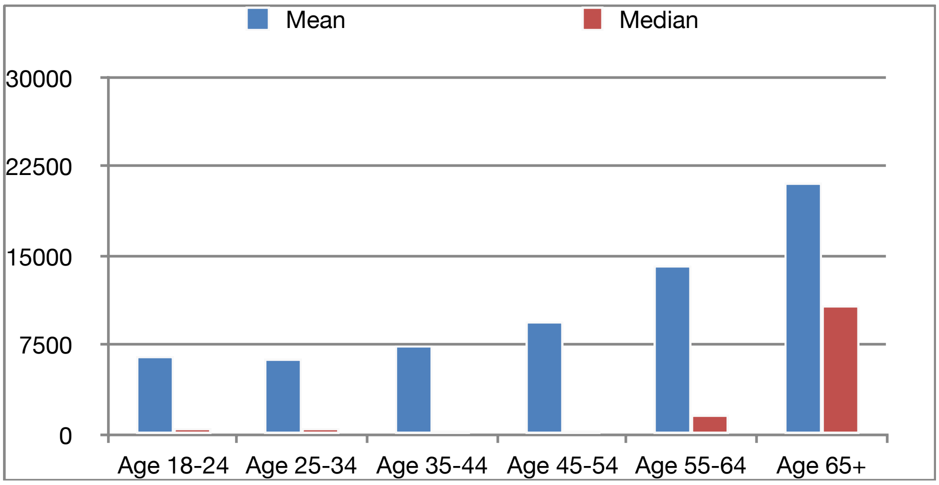
[17] Office for National Statistics, 2017a.

[18] Corlett and Clarke (2017), p. 89.

be enough to support an increasing number of old people in retirement without significantly relying on benefits.

Looking at the current stock of savings, households with older primary income earners have a larger stock of savings than households with younger earners (Chart 6). The median stock of savings of households with a primary income earner aged over 55 is by far larger than the median stock of savings of younger households. This gap is even more prominent for households whose primary income earners are over 65. The median savings held by the average UK household is £1,205, and this further confirms the skewed distribution of savings by age group.[19] The highest percentage of households with no savings is among the under 55 - with the highest percentage, approximately 40%, in the age group 45-54, followed by the 35-44 (about 38%), the 25-34 and the 18-24 at approximately 35%.[20]

Chart 6: Household savings by age of primary income earners, November 2013-July 2014, £



Source: Legal and General (2014), p.13.

The UK has also a high level of household indebtedness, and unsecured debt (excluding student loans), in particular, has been rising as a share of UK disposable household income since 2014, helping to fuel spending and ending the downward trend that began around 2005. Household debt[21] as a percentage of net disposable income is 149.%, and this compares with 108.3% in France, 92.9% in Germany and 112.1% in the US.[22]

Debt is also unevenly distributed. Even if average unsecured debt at 18% of disposable income remains lower than at any point in the 2000s, for 12% of working-age households, debt repayments take up more than 10p in each £1 of income, with even higher proportions and rates for poorer households.[23] For younger people student loan repayments are a further cost that reduces take-home pay and savings. These repayments currently take up a significant portion of overall employment income for younger adults only, and not those aged over 35. They can be expected to affect gradually more people as the impact of the 1998-99 introduction of tuition fees work through, together with increased numbers of graduates and subsequent increases in tuition fees.

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[19] In the chart the gap between the mean and median figures suggests that a high proportion of households have very little savings, while a small proportion have a very large amount of savings.

[20] Legal & General (20140, pp. 13-4.

[21] It includes mortgages.

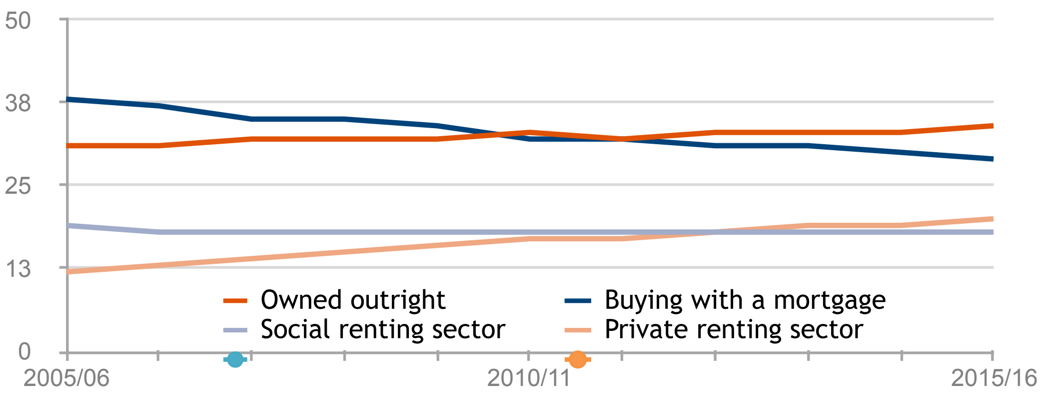
[22] OECD Household Accounts, https://data.oecd.org/hha/household-debt.htm#indicator-chart.

[23] Corlett and Clarke: 25.

2.4 Wealth accumulation by age group

The younger generations' 'constrained' saving capacity reflects on wealth accumulation with the result that inter-generational inequality in the distribution of wealth has also widened. Using home ownership as a proxy for wealth - for about 63% of households in the UK their home is also their main asset[24] - Chart 7 shows that the percentage of households that own a residential property - mainly the house where they live - dropped in the ten years between 2005-6 and 2015-16 to 63% in 2015-2016 from 69% in 2005-2006. Nearly three-quarters of pensioners live in homes that are owned outright (compared to roughly 1 in 5 of the working-age population), and so face minimal housing costs (Table 5).[25]

Chart 7: Households by tenure, 2005/06 to 2015/16, % of households



Source: DWP, Family Resources Survey, 2015/16

Table 5: Tenure type by age of head of household, 2015-16, % of households

Age	Owned outright	Buying with a mortgage	Social renting sector	Private renting sector
All	34	29	18	20
16-24	1	9	20	71
25-34	3	33	18	46
35-44	6	51	17	26
45-54	19	50	17	14
55-64	48	26	17	9
65+	73	4	18	6

Source: DWP Family Resources Survey, 2015/16; Resolution Foundation

Wealth distribution by type of assets shows that net wealth, in particular net financial wealth, increases with age as significant liabilities - like a mortgage - taken up in younger age are repaid. There is also a

24 Department for Communities and Local Government (2017).

25 The Government's preferred measures of low income for the pensioner population are therefore estimated on an after housing costs (AHC) basis to draw out the difference in living standards for the minority of pensioners who do face housing costs.

significant difference between wealth held by employees and wealth held by the self-employed. The median value of any property wealth for the former is £61,500 and £90,000 for the latter (Table 6). Property wealth, net of secured loans and mortgages, is the largest proportion of an individual's total wealth; physical wealth, that includes goods, collectables and vehicles, is the smallest proportion (Table 7).

Table 6: Individuals' wealth, by type and employment status*

Type of wealth	Employees	Self-employed
Financial	99% median amount: £1,400	98% median amount: £1,400
Property	66% median amount: £61,500	70% median amount: £90,000
Physical	88% median amount: £20,200	91% median amount: £22,500

Source: PPI (2017), p. 10

* Median values exclude those with zero wealth

Table 7: Individuals with property and physical wealth, %

Age band	With property wealth	With physical wealth
22-34	39	67
35-44	72	96
45-54	80	97
55-64	85	98
Total	67	88

Source: RF, DWP, Family Resources Survey

3. Where do we go from here?

As the impact of the financial crisis on real incomes has been unequally perceived by, and had an uneven impact on different age groups, and the long-term accumulation of assets - notably residential properties - have worked in favour of the older cohorts, how is inter-generational inequality going to play out in the years to come? More specifically, will today's working age groups be worse off in their retirement than today's pensioners? And, given the current demographic trend, will the number of elderly who will rely on benefits larger than the current ones, putting serious pressures on fiscal policy?

3.1 The macroeconomic outlook

The two trends - consumer price moderation and the increase in employment - that contributed to real wage growth in the years before the crisis and mitigated the impact of the crisis on real wages in the aftermath are no longer at play. Inflation is now at 2.9% and is expected to remain above the Bank of England's 2% target over the next two years. Employment is due to remain at around 32 million, bringing an end to the fast employment growth of recent years. And slow productivity growth is likely to constrain nominal pay growth.

This outlook is likely to exacerbate the inter-generational inequality that we discussed in the previous section. While pensions will continue to be protected by the 'triple lock' until, working-age welfare is due to be cut by more than £12 billion between 2017 and 2020-21.[26] This will result in falling living standards for almost the entire bottom half of the working-age income distribution between this year and 2020-21 while incomes in the top half of the working-age household distribution are projected to slightly grow by 4%, due to modest pay growth and income tax cuts. The Resolution Foundation projects the biggest rise in inequality since the 1980s, with inequality after housing costs reaching record highs by 2020-21. [27]

Forecasts show a severe slowdown in real income growth over the rest of this parliament. For working-age households real incomes after housing costs will grow by just 1.3% between 2016-17 and 2020-21. Coming on top of both the squeeze associated with the financial crisis and the slowdown of the pre-crisis years (which was driven partly by rising housing costs), this would leave typical working-age incomes just 7% higher in 2020-21 than in 2002-03. The most affected working-age households are likely to be those with children, while those with three children or more while working-age households without children should benefit from small income growth. Pensioner households, on the other hand, are expected to receive small income gains. On the whole, the average income of the top half of the distribution is projected to rise by 4% over the next four years, while the bottom half looks set for a 3% fall.[28]

Against this background more working families will be living on the breadline with little scope for saving for emergencies, let alone for contributing to a pension. Even taking into account the mandatory contributions to a pension for all employees - up to 5% of salary by 2019 - it is questionable whether people will be able to save enough. For example, the self-employed are not included in the mandatory contributions, neither are workers that do not meet the minimum earnings requirement. The Pensions Policy Institute estimates that approximately 5.3 million employees and 4.78 million self-employed are not eligible for automatic enrolment.[29]

And even for those who qualify, the minimum contributions are in the order of a few hundreds a year for half of those in the low-to medium income group who take home slightly more than £14,000 (Table 3). These are indeed individuals, and families, that are most likely not to have enough savings for their retirement and will need financial support later in life. This means that many of those with low-to-medium income during their working lives should expect to move into the group of households that mainly rely on benefits. Some higher income households, in turn, should expect to drop into the low-to-medium income group. Even taking into account lower spending commitments than during their working years, roughly 3 million households from the current low-to-medium group are likely to drop into the benefit reliance group, bringing the number of households in this group from the current estimated 3.8 million to almost 7 million.

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[26] These cuts include a freeze in working-age benefits in the face of greater than previously expected price increases; the implementation of reductions to work allowances in Universal Credit to make the new system significantly less generous than existing benefits; and other cuts that impact on families with more than two children in particular.

[27] Along with key economic variables such as inflation, earnings and housing costs, the impact of taxes, and spending on benefits are included as well as demographic shifts that include population growth and changes in living arrangements - more people living in the private rented sector and fewer mortgage holders by 2020-21.

[28] Corlett and Clarke, 2017: 73-4.

[29] Wells et all, 2016: 41.

3.2 Inter-generational inequality going forward

The current inter-generational inequality means that tomorrow's pensioners will have fewer assets - especially residential properties - to support themselves in retirement. Saving towards retirement during people's working life is critical in a system like the British one that will increasingly combine a basic state pension with private provisions; the latter, therefore, will be essential for many individuals and families to maintain living standards close, if not similar, to those experienced during their working life.

But people's expectations vis-à-vis savings and retirement are often off the mark. In fact they tend to underestimate the length of their retirement by around 10%, and indeed 25% of them expect to live on an income that is inadequate. About 16% of the individuals surveyed expect to receive retirement income from a future inheritance and 7% expect to receive retirement income from support from current family or partners. Approximately two and a half times as many individuals do not feel that they are saving enough as they need to for their retirement than those who do.[30]

In addition, future pensioners will be unable to enjoy the benefits that Defined Benefit pension schemes currently offer to many pensioners - these schemes, whereas are still in place, are no longer open to new members, i.e. younger workers. Furthermore, as State Pension ages have been extended,[31] and increases in the mandatory age at retirement cut into individuals' lifetime pension incomes relative to the baseline, future pensioners are likely to draw their State Pension for a shorter period than the current pensioners.[32] So, if recent policy measures have reduced the percentage of pensioners living in poverty, with pensioners being better off on average than they have ever been,[33] the next cohorts of pensioners, despite having accumulated more private pension than those currently aged 55,[34] are likely to be worse off than the current ones - with the exception of those in the highest deciles of the income distribution.

To fully understand how current inter-generational inequality and income 'squeeze' will affect the well-being of the cohort of the over 65s in 30 years it would be necessary to model the data provided by the Household Income Survey and so project future wealth levels and retirement incomes given some assumptions about the future macroeconomic outlook. This exercise, which would be extremely helpful to design appropriate policies and measure their impact, goes beyond the scope of this paper. Instead, using existing data on people's attitude to savings for their retirement, I will sketch a few facts and then infer a few, partial conclusions.

In the UK there are currently more than 10 million households whose annual income is, on average, below the all households average income (Table 8) and they are in the age groups below 30 and over 65. This distribution is consistent with the lifecycle theory that predicts that young people at the beginning of their working life and with young children have less disposable income than older workers. The years before retirement are those when individuals and families, especially for those in the low-to-medium income group, have the highest disposable income (Table 3) and so the highest nominal wealth accumulation. 85% of the 55-64 year olds have property wealth and 98% have physical wealth (Table 7). For individuals and families over 65 the income is reduced as most of them are no longer active in the labour market and rely mostly on pension benefits and on savings and investment income.

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[30] Source, PPI, An analysis of the retirement savers in the Wealth and Assets Survey, p. 12

[31] The age to qualify for the State Pension was increased a number of times in the last twenty years in order to factor in the increases in life expectancy. So in principle, the years cut at the beginning of one's retirement period are to be balanced out by more years spent in retirement.

[32] This is already evident in the comparison between individuals who were aged 50 to 54 in 2010 (and therefore 56 to 60 in 2016) and those aged 55 to 64 in 2010. The former have lower projected retirement incomes and a narrower range of pension incomes than the latter. Corlett and Clarke, 2017: 14-5.

[33] Pension Policy Institute, 2017a.

[34] The Wellbeing, Health, Retirement and the Lifecourse project, 2017.

Table 8: Average household income by age group (2016 data)

	Number of households	Average annual household income	
	000s	Disposable income £	Gross income £
< 30	2646	29194	35315
30 to 49	9491	39696	50099
50 to 64	7323	37589	46952
65 to 74	4039	27402	31705
75 and over	3706	21315	24129
All households	27205	31441	41545

Source: ONS

A simple projection based on population growth by age groups (Chart 1) indicates that the number of the households with income below the all-households average income will be slightly more than 12 million in 2046, an increase of approximately 18%.What does it mean to be below the average income in terms of living standards? And at which point does the need for 'enhanced welfare' - i.e. benefits, personal care and healthcare, especially for the very old - kick in? Relative income poverty is defined as an income below half the national median equivalised household income.

The annual household income of those in the bottom group of the income distribution is on average £7,153 to which £7,612 in benefits needs to be added in order to move the disposable income just above the relative income poverty line that in the UK is £12,567[35] (Table 3). 7.3% of the UK population falls in the relative income poverty group. With the basic state pension being roughly 15.3% of the average gross income, or £6360, in the UK 13.4% of individuals aged over 65 live in relative income poverty - above the OECD average of 12.6%.[36] The majority of the remaining over 65 falls into the income bracket low-to-medium - and most of the over 75 are in the lower end of that distribution.

Using the OECD future gross replacement rates for average earning,[37] I now assess the adequacy of the average retirement income. The OECD pension data show that the income available to UK households post-retirement is equivalent to 29.6% of their pre-retirement earnings.[38] The UK has one of the lowest pension replacement rates in the OECD (Chart 8), especially for the replacement rate provided by the state pension (currently at 21.6% of pre-retirement earnings). As the replacement rate provided by private pensions schemes depends on the amount that each individual is able to save into the scheme, then the extra income that pensioners can draw to supplement the state pension depends on how much they were able to save during their working life.

Retirement income is generated from state provisions and from private sources such as pension funds that are annuitized and workplace Defined Benefits schemes as well as from cumulated financial wealth, from employment earnings and from properties - through rentals, downsizing and equity release schemes. Such a combination of different sources of income, however, concerns only a small proportion of households that tend to be on the upper end of the income distribution. The majority of the households relies on income from public and private pensions schemes as their main income in retirement.

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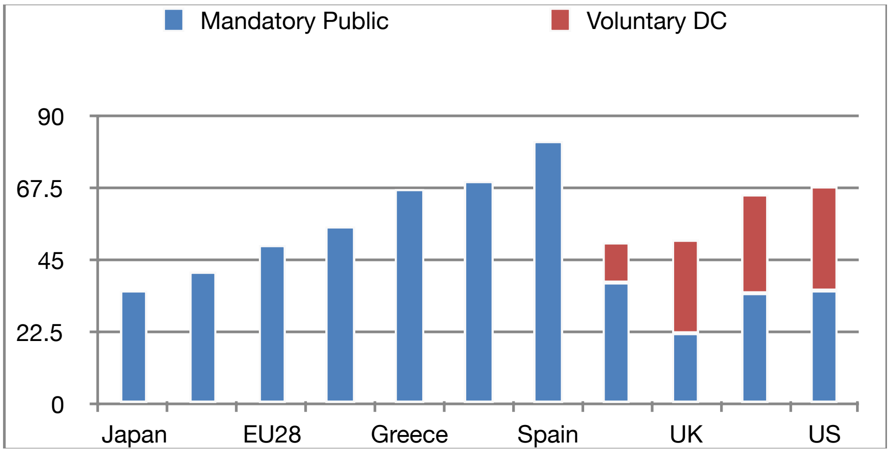
[35] Figures for 2015 from Office for National Statistics, 2017b: 2.

[36] Figures for 2014, OECD data

[37] Replacement rates estimate the ratio of retirement income to pre-retirement income.

[38] OECD, 2016: 122.

Chart 8: Pension replacement rates from public and private pension schemes (% individual earnings, gross)



Source: OECD, Pensions at a glance, 2015

As I discussed in the the previous section, many individuals of working age have limited saving capacity, and so have limited assets accumulated in private pensions schemes. Even if the majority of the households expect their retirement income to be lower than their pre-retirement income, and many recognise that their saving rates are inadequate, they are not aware that their income at retirement may be no more than a quarter of their work income, and that such a drop requires a substantial downward adjustments of their living standards.

The point here is that many households in the low-to-medium income group will have to significantly adjust to lower income when they retire - the high income group tends to fare much better as they tend to have substantial private pension income along with financial returns, rental from properties and often professional income. The transition will be easier for the low income group for which the state pension and other age related benefits make the largest contribution. But for the medium income group overall replacement rates, in the best case scenario of adequate private pensions provisions, will be approximately 40-45%.[39]

On average, however, the replacement rate - currently at 29.8% of pre-retirement earnings - is lower, indicating that private provisions are insufficient to make up the shortfall given the replacement rate of 21.6% provided by the state pension.[40] Intuitively these replacement rates suggest that households in the low-to-medium income groups will be ‘squeezed in retirement’. It is therefore plausible to expect that between one third and a quarter of all households in the UK by 2046 will have to drastically adjust their living standards in retirement to cope with a 75-80% drop in their retirement income. Growth in the number of those aged over 75 will also depress the average replacement ratio for the whole group of pensioners - they tend to have lower income (Table 8).

As the group of the over 75 will expand in the next 30 years along with longevity - life expectancy for women reaching age 65 in 2050 is projected to be 28.2 (24.3 in 2015) and for men 25.8 (21.7 in 2015)[41] - their financial capacity is likely to deteriorate as assets are used to support retirement, while their medical needs increase dramatically - especially after 85.

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[39] Subacchi et all 2011.

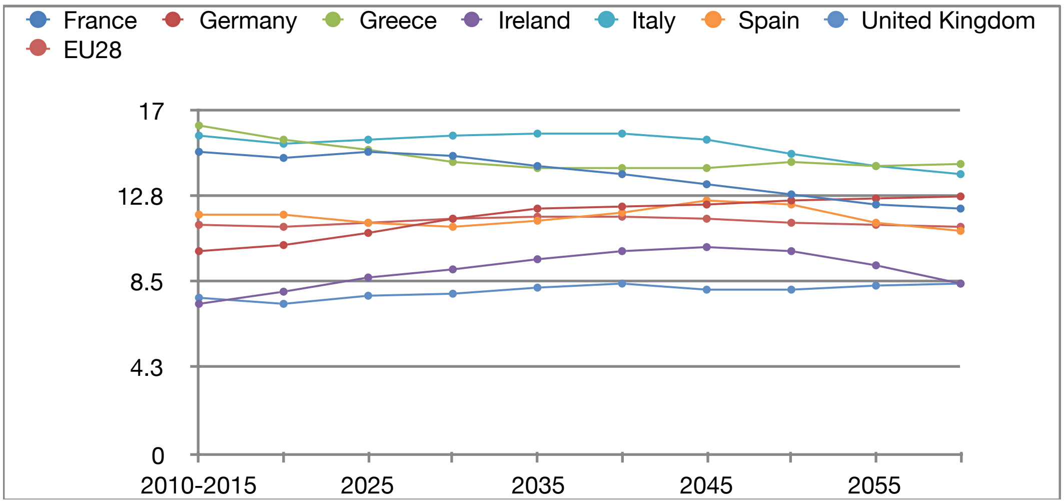
[40] As the State Pension from 2030 will no longer be earnings-related and will accrued at a flat rate, this will the amount of state pension provision for those with higher earnings.

[41] Pensions Policy Institute, 2017b: 1.

4. Policy implications

The policy challenges that are posed by the ongoing demographic shifts in many developed and developing countries - of which ageing is the most prominent aspect - are very well rehearsed and can be summarised in the dilemma of how to pay for increasing benefits for the elderly with decreasing revenues as dependency ratios go up. The policy response in many countries has been to raise the age of retirement and gradually reform the benefits that people are entitled to receive. The UK has been ahead of other European countries to shift the pension system and focus it on defined contributions as opposed to the more onerous defined benefits systems. As a result the UK has one of the lowest percentage of public spending on pension (currently 7.7%, well below the average of 11.3% for the EU28). OECD projections suggest that this percentage will increase in the next 25 years and peak in 2040 at 8.4% while remaining below the EU average (Chart 9).[42]

Chart 9: Projections on public spending on pensions



Source: OECD, Pensions at a glance, 2015

Successfully managing, and controlling, public expenditure on pensions does not mean that the UK has financially self-sufficient pensioners. As the defined benefits pensions scheme will be phased out in the next twenty years, private pensions schemes with defined contributions will play an increasingly critical role in providing an adequate level of income in retirement to many individuals and households. But, as I discussed in the previous sections, current and future trends for nominal income growth coupled with stronger growth in residential properties prices, hinder many individuals' ability to save - especially for those in the younger age group. This means that many households in the low-to-medium income bracket in retirement will have to make do with approximately 20-25% of their pre-retirement income.[43]

Will this level of retirement income be adequate from a public policy perspective? The answer to this question depends on individual preferences as well as on policy orientations. International comparisons could help assessing the 'norm' at the international level although the discrepancies between the UK and many OECD countries may ultimately depend on the UK focusing much earlier than other countries on the constraints that increasingly unfunded pensions schemes pose to future fiscal sustainability. The question that remains unaddressed is, however, the fundamental inability of many households to save enough despite the many tax and non-tax incentives.

Falling relative income levels and ageing will continue to put pressure on public spending. Despite the savings acquired through the pension reforms, total spending on state pensions and other benefits for pensioners are projected to raise from 6.4% of GDP in 2014-15 to 6.8% in 2030-36 as the number of older people receiving State Pension increases (Table 9). As the age at retirement reaches 69 in the late

[42] For an overview of the recent pension reforms in the UK see Pensions Policy Institute, 2016: 4-11.

[43] PPI projections indicate 24.5% for the new State Pension as percentage of national average earnings over the period 2016-2035, Pensions Policy Institute, 2017b: 4.

2040s, spending on State Pension are projected to be approximately 7.2% of GDP by 2055.[44] The number of pensioners is projected to increase from approximately 16 million to approximately 18 million between 2030 and 2055, with a further extension in longevity that will bring the group of the over 75 to be 15% of the total population.[45]

Such a relatively rapid increase in the population at the most vulnerable ages coupled with a greater rate of dementia at death will put all social protection activities under considerable strain. Although resources in health and social services have, in many areas, been maintained - in contrast to cuts in other services -, the pressures identified here suggest that "standing still" is not a sufficient response.[46]

Pensions and benefits paid to pensioners make more than 40% of the welfare bill in the UK. Among the OEDC countries the UK is one that offers a range of extra-pension benefits such as housing benefits, heating benefits, health allowances, and free services, such as home-help and hospital treatment.

In the 2015-16 budget the welfare bill was 46.4%, up from 43.6% in the 2010-2011 budget. It is expected to reach 50.4% in the 2020-21 budget. The 'triple lock' on pensions that was introduced by the Coalition government in 2010 to ensure that the State Pension maintains its value in real terms and to guarantee that it increases every year by the higher of inflation, average earnings or a minimum of 2.5% is a reason for this increase. Demographic pressures are another reason. In contrast, total expenditure on family benefits fell during the 2010-2015 parliament, despite an increase in the population eligible to claim them (see Box).

Table 9: Total spending on state pensions and other benefits for pensioners

Type of benefit	Real terms, 2014/15 prices (£ bn)			
	2014/15	2020/21	2025/26	2030/36
Basic state pension	67	62	57	39
SERPS/ S2P	18	17	14	8
New State Pension	0	16	48	130
Other elements of State Pension	3	2	2	1
Pension Credit	7	5	4	3
Other pension benefits	3	3	3	3
Total pensions	99	104	128	184
% of GDP	5.5	5.0	5.4	6.1
Housing related benefits	6	5	6	9
Attendance Allowance and Disability Living Allowance	11	10	10	11
%GDP	0.3	0.3	0.3	0.3
%GDP	0.6	0.5	0.4	0.4
Total pensions + benefits paid to pensioners	116	119	144	204
% of GDP	6.4	5.7	6.1	6.8

Source: PPI, Pension Facts, June 2017

[44] Pensions Policy Institute, 2016: 14.

[45] Pensions Policy Institute, 2016: 14.

[46] Institute of Health Equity, 2017.

Going forward scope for further reforming the system by increasing the age at retirement is limited. Not only there are medical conditions that restrict many people to continue working, but there are also issues of fairness over discrepancies in life expectancy. Further extending the retirement age would be unfair towards those - normally the poorest - who have lower life expectancy while people with disability will find it harder to work for longer than others, and may have to live on a lower income from working-life benefits than they would have received from the State Pension.

A more plausible option would be to focus fiscal policy on helping low-to-medium income households to save more into simple pension schemes that would guarantee a retirement replacement rate of 20% of the average pre-retirement earnings that along with the State pension will ensure a higher retirement income.[47] In addition, working with the financial services industry, expectations should be managed about the level of retirement income that the average (and median) pension savings will produce. The policy debate is still grappling with the complexity of the issues linked to the ongoing demographic shift and needs to focus more, and understand better all the inter-generational implications.

Box 1: Changes in Benefits

DWP departmental budget was cut by 35.8% over period 2010-2016 (https://www.ifs.org.uk/tools_and_resources/fiscal_facts/public_spending_survey/cuts_to_public_spending)

Benefit cap: Introduced April 2013, caps the total benefits received by an out-of-work family of working age to £500 a week, £300 for a single adult household. DWP estimates suggest 56,000 households lost an average of £93 per week

Housing benefit: Housing benefit (LHA) was capped in April 2011 according to property size. Additionally, LHA was cut from the 50th percentile of local to rents to the 30th. Furthermore, the 'Bedroom tax' penalises under-occupancy by cutting housing benefit by 14% to 25% The government has also introduced plans to cut housing benefit for all but a few 18-21 year olds.

Disability benefits: Although not expressly cut, the requirements for receiving employment support allowance and personal independence payments have become more stringent. The work capability assessment was introduced in 2011 for all ESA claimants. Questions have been raised about the accuracy of these assessments, considering the high number of successful appeals.

Tax credits: A series of measures in 2011 lowered the number of families eligible for working tax credits and froze the main part of its payment. The withdrawal rate for families earning more than £6,420 was increased from 39p to 41p and the number of hours worked to be eligible increased from 16 hours to 24 hours a week. Child tax credit was withdrawn from families earning more than £41,300.

Pensions: A new, flat-rate, universal pension system was brought in for everyone retiring after April 2016. It replaces the old, two-tier 'top up' system in place before. Only people with 10 years of NI contributions will be able to claim any pension and the number of years of NI contributions to qualify for the full pension has increased from 30 to 35 years. According to the government, in the first 15 years of the new system, 75% of pensioners will receive higher payouts than under the old system. However, those retiring after 2030 will likely receive less money, due higher NI contributions and the abolishing of the second tier of the pension system.

In the 2010-2011 budget, pensions made up 43.6% of the welfare bill. This rose to 46.4% in the 2015-16 budget, and is expected to reach 50.4% in the 2020-21 budget. The Coalition's 'triple lock' on pensions, as well as demographic pressure, seems to be the reason for this increase. In contrast, total expenditure on family benefits fell during the 2010-2015 parliament, despite an increase in the population eligible to claim them. A fall in spending on unemployment benefit was dependent both on stricter eligibility rules and a decrease in unemployment, while cuts in housing benefit brought about little significant savings due to rising rents across the country.

[47] Tony James and Teresa Ghilarducci, *Rescuing Retirement*, (Columbia University Press, New York) 2017.

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