TheCityUK

DEMOGRAPHICS, GROWTH AND FINANCIAL SERVICES

INDEPENDENT ECONOMISTS GROUP

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TheCityUK

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INDEPENDENT ECONOMISTS GROUP

TheCityUK's Independent Economists Group (IEG) was established in April 2012 as a forum to bring together leading economists in financial and professional services. The IEG meets quarterly with the aim of providing independent and informed analysis of macroeconomic issues as well as key issues that the industry is facing both in the UK and internationally. Analysis incorporates implications of these issues for financial and professional services and for authorities in the UK and EU.

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CONTENTS

Foreword 4

Executive Summary 5

Summary of Recommendations 6

1 Introduction 7

2 Demographic trends 9

3 Population and growth prospects 13

4 Immigration 19
- 4.a Immigration, growth and trade 21
- 4.b Impact of immigration on pay and employment 22
- 4.c Immigration and the use of resources 24

5 Debt and demographics 26

6 The financial implications of ageing 30
- 6.a Pensions 21
- 6.a.i Accumulating pension wealth 33
- 6.a.ii Turning pension wealth into an income 35
- 6.a.iii Defined-benefit pensions and bulk annuities 37
- 6.a.iv Pensions and asset allocations 39
- 6.b Long-term care 40

Appendix 1. References 42

FOREWORD

A key influence on the future performance of major economies around the world is the process of demographic change. This is one of the "megatrends" shaping the future of the UK economy and the pattern of global economic activity. Slow population growth is already a dampening impact on the headline economic growth of countries like Japan, Germany and Italy. Most richer industrialised economies face the challenge of an ageing population, and it is also an issue for some emerging market economies – including China.

Because of the very long-term nature of demographic change, it is easy to lose sight of its impact on nearer-term economic variables. But demographic changes currently in train will have an impact on countries' trade, fiscal positions, employment and overall growth. There are also important consequences for the financial sector – in terms of the implications for savings patterns and the need for increased levels of pension provision to cater for an ageing population.

The UK's growth is less likely to be affected by a slowdown in population growth than some other G7 countries – in part because of its relatively high net immigration levels, compared to other European countries. But the UK still faces particular challenges in areas such as housing finance, pensions and funding for long-term care as it adjusts to an aging population.

This report is the latest in a series produced by TheCityUK's Independent Economists Group, aimed at contributing to the current economic policy debate. It contains an analysis of some of the key economic issues associated with demographic change and sets out a number of policy recommendations and conclusions. For example, headline GDP growth may no longer be the most appropriate or indeed important measure of economic dynamism as population growth rates slow. The focus needs to shift to GDP per head of population in a world where countries are experiencing very different population growth rates.

Properly measured, however, demographic change is not necessarily bad for economic growth and the wellbeing of society. The question is how we adapt our economic and financial systems to the challenges it brings. With appropriate policies and a supportive environment set by the Government, the financial services industry is well-placed to play a key role in addressing the economic challenges associated with demographic change. However, policy consistency will be critical if financial institutions and capital markets are to properly support the adjustment of our economy and society to a shifting age balance and slower population growth.

Andrew Sentance
Chair, TheCityUK Independent Economists Group

EXECUTIVE SUMMARY

- The world population is ageing; in G7 and BRICS countries, for example, **the share of the population of working age is expected to decline as a share of the total population by 2100**.
- **Demographic changes will pose challenges at a country level as well as for individuals**. It will be important to use resources effectively in order to maintain living standards, increasing the incentives for investment in labour-saving technology. Individuals will also face increasing challenges related to pension savings and long-term care.
- **Migration is likely to be one of the main drivers of population trends around the world**. In the UK, for example, immigration has helped to reduce any increase in the average age of the population.
- From an economic perspective, immigration can impact growth, trade, fiscal outcomes, unemployment, wages and inequality in recipient countries. Although rising population density could pose some challenges, **the evidence suggests that the economic effects of immigration on recipient countries are mostly beneficial**.
- On average, both debt levels and wealth tend to follow an inverted U pattern, in line with the life-cycle hypothesis. **In the UK, debt levels among all age groups has risen over time**.
- **Of particular note in the UK is the increasing difficulty that younger cohorts are having buying their first home**, given the combination of the level of house prices relative to earnings and the stricter regulatory environment following the 2008-09 financial crisis. **Large mortgages can create risks for individuals as well as banks**, as the cost of servicing the debt is not linked either to their income or to house prices. This suggests that alternative risk sharing mechanisms, such as equity loans to help with the deposit, may help manage risks better.
- **A key factor in helping economies adjust to the challenges of an ageing population will be to find mechanisms to help manage longevity risk**; evidence suggests that individuals systematically underestimate their life expectancy relative to official estimates.
- **Encouraging pension saving is an important component of government policy**, because it encourages personal responsibility and reduces the need for individuals to rely on the state. The pensions sector plays an important role in providing funding for both firms and governments.
- In the context of rising life expectancy, **the costs of long-term care, if needed, can be significant. Although the underwriting difficulties are significant, one question is whether the financial services industry could potentially help** by providing products to help people meet these costs.

SUMMARY OF RECOMMENDATIONS

Managing the impact of an ageing population on growth

1. To meet the challenges posed by an ageing world population, governments will need to help economies adapt, for example, by encouraging people to work longer before retirement. Financial services will have a role to play, particularly in helping individuals to manage their wealth over their lifetime.

2. The impact of population ageing and a shrinking workforce will make it important for governments to think about how they can make their economy attractive to workers in a world of increased international mobility.

3. Shifting population patterns mean that GDP growth may not be the best measure of economic performance going forward. Therefore it will be important to emphasise other measures, such as GDP per capita, in order to get a better picture of how countries are performing.

Enabling financial markets to help manage demographic risks

4. Policy stability and consistency on issues such as the future of the pension regime will be crucial for building an effective response to the challenges of an ageing society. This is particularly true for sectors such as financial services, where any engagement requires firms to take a long-term position, meaning that understanding the risks to capital is important.

5. It is important to help financial markets develop ways to manage longevity risk. Bulk buy-outs are one option, but the sector might also benefit from the use of markets in longevity hedging instruments. This is potentially an issue that markets will be able to solve themselves, but it will be important to have the right regulatory regime in place, as excessive capital requirements would damage the ability of markets to innovate.

1: INTRODUCTION

Demographic trends pose significant challenges for the world economy, as rising population levels put pressure on resources and the ageing of the world's population creates the possibility that there will be fewer workers available to support the rest of the population. Countries will need to adapt to these changes, adjusting the way in which they grow. For example, attracting and retaining workers, wherever they come from, is likely to become increasingly important – a view that is currently politically sensitive in many countries experiencing net immigration.

Demographic trends also pose challenges for individuals. For example, increased pressure on housing supply in the UK is contributing to the increasing difficulty younger households face in buying their own home. Similarly, increased longevity (despite all the benefits it brings) is making it harder for households to stretch their resources over retirement. Furthermore, changes in the regulatory environment around pensions mean that risks have been shifting towards individuals, who arguably are not well equipped to deal with these risks.

This report looks at specific aspects of each of these issues in turn. It is based on a discussion on demographics by TheCityUK's Independent Economist Group (IEG), together with the background analysis by Analytically Driven Ltd.[1] The key issues highlighted by the IEG, together with recommendations by the group, are presented as a series of pull out sections within the main text of the analysis.

The report starts in Section 2 by assessing demographic trends around the world, the extent of population ageing and the implications that these have for the use of resources and specifically housing needs. Section 3 assesses the implications of demographic trends for economic growth prospects, discussing the implications, opportunities and challenges of an ageing population. Given that an ability to retain and attract workers will become increasingly important, Section 4 looks at the evidence on immigration, assessing the extent to which it is positive for economies, as well as its impact

What is important about demographic trends is how countries adapt

Although the ageing of the world's population will present challenges, demographic trends are not necessarily bad per se. What is important is how economies adapt, for example, through people working longer before retirement, or boosting the workforce through migration. Financial services will also have a role to play, particularly by helping individuals to manage their wealth over their lifetime.

IEG Recommendation:
To meet the challenges posed by an ageing world population, governments will need to think about how to help economies adapt, for example, by encouraging people to work longer. Financial services will have a role to play, particularly in helping individuals to manage their wealth over their lifetime.

[1] *This report presents the outcome of these discussions, with the issues highlighted by the IEG, together with their recommendations, shown as a series of pull-out boxes within the analysis provided by Analytically Driven Ltd.*

on the native population. The need for, and access to, debt changes over people's lives, with younger age groups often finding debt more challenging, particularly when it comes to mortgage debt. Section 5 therefore examines the evidence on debt and how experiences differ by age group. It also discusses whether alternatives to traditional mortgages, such as equity loans, might help buyers access the property market, at the same time as reducing the risks for individuals. Finally Section 6 looks at the challenges posed by an ageing society for individuals' ability to finance their needs in retirement, for example through pensions, or to provide for long-term care. This is an area where more risk has tended to be placed on individuals over time, in part in response to regulatory changes and the demand for more flexibility. This creates challenges not only for individuals, but also for the financial services industry.

2: DEMOGRAPHIC TRENDS

Between 1950 and 2015 the world's population increased by 191.1%. By far the biggest increase was in Africa, but population growth rates were over 100% in all regions except Europe, where the population only grew by 34.5%. Although population projections are inherently uncertain, even under a high fertility assumption world population growth is expected to slow sharply over the period 2015 to 2100. Under a medium fertility assumption, not only will population growth rates decline in all regions of the world, in Asia, Europe and Latin America and the Caribbean the level of the population itself is projected to peak before the end of the forecast period of 2100 (in 2057, 2020 and 2061 respectively), with population levels falling thereafter. Indeed in the case of Europe, the population will fall by 12.6% in absolute terms over the period 2015 to 2100 under the medium fertility assumption. Under a low fertility assumption population levels will peak in all regions except Africa, with the level of the population in 2100 expected to be lower than that in 2015 not only in Asia, Europe, Latin America and the Caribbean and North America, but also in the world as a whole. See Table 1 for an overview of population trends in different regions of the world, as well as the G7 and BRICS economies.[2]

The factors underpinning population change in different countries round the world are complex, encompassing changing fertility rates (both in terms of number of children and the age at which a woman has her first child), increasing longevity and migration patterns. However, a consistent feature of population change in all countries around the world is the expectation that on average, the population will be getting older. Under medium fertility assumptions all countries throughout the world will see an increase in the median age of the population.[3]

In the case of the UK, immigration has helped to reduce any increase in the average age of the population. The size of younger cohorts has increased over time, as migrants in that age group have entered the country, see Table 2.

It is not just the ageing population that will bring challenges

Population ageing brings clear challenges for countries in terms of how they adapt and will put pressure on resources, particularly those available for health care, by increasing the dependency ratio. However, ageing is not the only trend that will affect health costs. Society is building up problems with obesity, which is also likely to increase care costs over time.

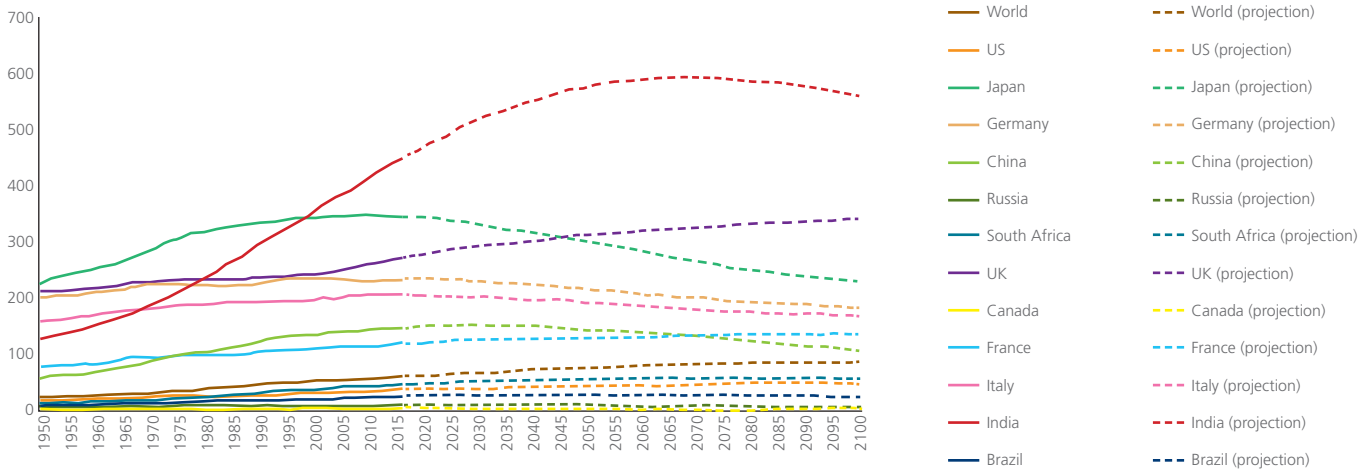
[2] *Based on data from the UN World Population Prospects: The 2015 Revision. The data are projections, rather than forecasts.*
[3] *Based on data from the UN World Population Prospects: The 2015 Revision. The data are projections, rather than forecasts. Even under the high fertility assumption most countries see an increase in the median age. The exception is in Europe, where most countries, including the UK, would see a reduction in the median age of the population under the high fertility assumption.*

Table 1
Demographic trends

	Population in 2015 (million)	Change in population 1950 to 2015 (%)	Projected change in population 2015 to 2100 (%)			Year of population peak			Median age, total population (years)	
			Medium fertility assumption	High fertility assumption	Low fertility assumption	Medium fertility assumption	High fertility assumption	Low fertility assumption	2015	2100[a]
World	7,349.5	191.1	52.6	125.6	-0.8	n/a	n/a	2054	29.6	41.7
Africa	1,186.2	418.2	269.8	416.9	157.0	n/a	n/a	n/a	19.4	34.9
Asia	4,393.3	215.2	11.3	71.8	-31.7	2057	n/a	2039	30.3	46.5
Europe	738.4	34.5	-12.6	30.0	-43.7	2020	n/a	2015	41.7	47.2
Latin America and Caribbean	634.4	275.7	13.7	77.0	-30.7	2061	n/a	2041	29.2	49.1
North America	357.8	108.5	39.8	100.3	-5.2	n/a	n/a	2048	38.3	45.0
Oceania	39.3	210.1	80.8	154.8	25.1	n/a	n/a	2070	32.9	43.9
US	321.8	103.9	40.4	101.2	-5.5	n/a	n/a	2048	38.0	44.7
UK	64.7	27.9	27.3	83.1	-14.0	n/a	n/a	2044	40.0	46.9
France	64.4	53.8	18.0	71.7	-21.2	n/a	n/a	2034	41.2	47.2
Germany	80.7	15.6	-21.6	14.7	-48.4	2015	n/a	2015	46.2	50.8
Italy	59.8	28.3	-17.0	19.8	-44.3	2016	n/a	2015	45.9	50.8
Japan	126.6	54.0	-34.3	-1.9	-58.0	2009	2009	2009	46.5	51.7
Canada	35.9	161.6	38.2	93.2	-3.0	n/a	n/a	2049	40.6	47.6
Brazil	207.8	285.1	-3.6	52.1	-42.3	2050	n/a	2034	31.3	50.2
Russia	143.5	39.6	-18.1	26.2	-50.1	2015	n/a	2015	38.7	42.4
India	1,311.1	248.4	26.6	97.4	-22.9	2068	n/a	2044	26.6	47.0
China	1,376.0	152.9	-27.0	13.0	-55.5	2028	n/a	2021	37.0	51.1
South Africa	54.5	298.2	20.6	89.7	-28.0	2073	n/a	2041	25.7	42.5

Source: Analytically Driven Ltd
Notes: Data from the UN World Population Prospects: The 2015 Revision. [a]Projections for 2100, based on the medium fertility variant.

Figure 1
Population density in G7 and BRICS countries, 1950 to 2100



Source: Analytically Driven Ltd
Notes: Data from the UN World Population Prospects: The 2015 Revision. Projections for 2100, based on the medium fertility variant.

Table 2
The UK population by cohort (millions)

	1993[a]	2003	2013
Young Generation Y		7.6	8.1
Old Generation Y	7.0	7.3	8.6
Generation X	7.5	8.3	8.4
Young Baby Boomers	8.6	8.9	8.7
Old Baby Boomers	7.5	7.6	7.2
Pre-War	6.6	6.4	5.6

Source: George et al (2015).

Notes: Data from Quarterly Labour Force Survey (April-June quarters). Cohorts defined by age bands: Young Generation Y were aged 16-25 in 2013 (born 1988-97); Old Generation Y were aged 26-35 in 2013 (born 1978-87); Generation X were aged 36-45 in 2013 (born 1968-77); Young Baby Boomers were aged 46-55 in 2013 (born 1958-67); Old Baby Boomers were aged 56-65 in 2013 (born 1948-57); Pre-War were aged 66-75 in 2013 (born 1938-47). [a]Data for 1993 is for Great Britain, data for other years is for UK.

What is clear is that increasing population levels will have implications for both the use and the distribution of resources, and that the experiences of different countries will differ significantly, see Figure 1. In the case of the UK, in 2015 it was the third most densely populated country (measured as persons per square kilometres) among the G7 and BRICS countries (after India and Japan), and it is projected to become the second most densely populated country by 2100. The impact of this trend is one reason why real house prices in the UK are likely to continue to rise.[4]

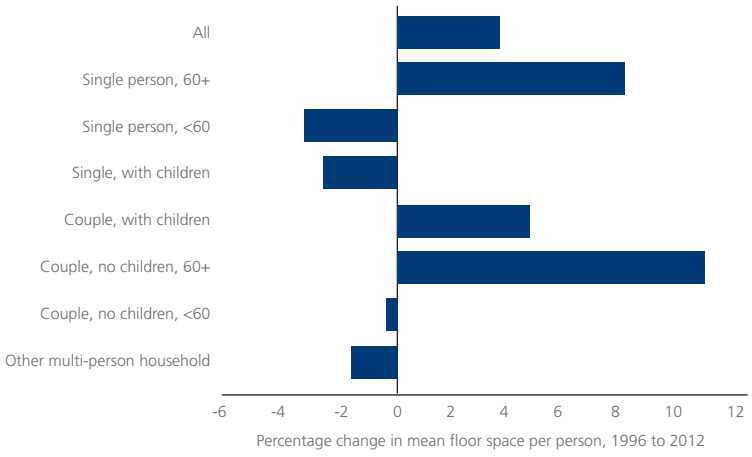
However, it is also important to keep things in perspective, as worries about the need to concrete over the UK to accommodate the extra housing needed to address rising population levels are likely to be exaggerated. Estimates suggest that only 1.75% of the land area in England was accounted for by domestic and non-domestic buildings in 2005, and that even in cities such as London, only around 14.3% of land is accounted for by buildings.[5]

Of course the amount of space required does not just reflect the number of people, but also the size of households (for example, bigger households typically still only need one kitchen, reducing the total space needed per person), as well as individual households' preferences and available resources. Although downsizing is a common theme when talking about the housing

[4] See the discussion in Miles (2012).
[5] See Chapter 10, Table 10.3, p368, UK National Ecosystem Assessment (2011).

needs of the elderly, the reality is that older people have seen an increase in the amount of floor space they occupy on average, see Figure 2. Assuming that this is a choice, rather than an accident, it has implications for how the housing stock will need to evolve as the population ages.

Figure 2
Change in floor space per person by household type, 1996 to 2012



Source: Belfield et al (2015).

Notes: Calculated from the English House Condition Survey and the English Housing Survey. Excludes vacant properties. The measure of floor space provided in the EHS data was changed in 2006. For consistency the 2012 figures have been derived using the pre-2006 methodology. The weights in 1996 have also been adjusted to account for a change in weighting methodology between 2007 and 2008, which affected the prevalence of different household and tenure types. EHCS and EHS data since 2003 are based on a two-year rolling sample, so '2012' refers to the period between April 2011 and March 2013.

Encouraging older people to move may be challenging

One advantage of owning a home is that one does not need to pay rent in retirement. This makes housing an attractive asset for many in retirement, particularly as ownership does not influence pension entitlement, for example.

Furthermore, as people get older, it is possible that they become more resistant to moving. Combined with high moving costs, this is likely to make it harder to encourage older people to move, meaning that the share of under-occupied housing is likely to increase.

However, practical considerations can also have an impact. For example, it is harder for pensioners to get a mortgage than for people earning an income from employment. Therefore the financial services industry may be able to offer solutions that might help, such as encouraging the development of a liquid market for equity release.

3: POPULATION AND GROWTH PROSPECTS

In a simple model of economic output, long-run growth is determined by the rate of growth of the labour force; the rate of change of the capital stock (investment, adjusted for depreciation); and the growth of total factor productivity, or the impact of invention and innovation that allows more output to be produced by the same factors of production. Therefore from a growth perspective demographic trends matter, because they determine the evolution of a key factor of production, namely the labour supply.

Using a crude measure of the labour supply (adults aged between 20 and 64), population projections show that between now and 2100 G7 countries can all expect to see a decline in the share of the working-age population, see Figure 3.A.[6] Furthermore, in the case of Germany, Italy and Japan, the working-age population is not just projected to decline as a share of the total population, it is also expected to decline in absolute terms[7]. The decline in the share of the population made up of adults of working age is not just a G7 phenomenon. For example, although the picture is more mixed in the case of BRICS countries, with Brazil, India and South Africa all experiencing short term increases in the share of the working age population, by 2100 the share of working age adults is projected to be below its 2015 level in all of the BRICS countries, albeit only marginally in the case of South Africa, see Figure 3.B.[8] Furthermore, Brazil, China and Russia are also projected to experience an absolute decline in this segment of the population[9].

If output per worker is fixed, the expected decline in the share of the population made up of adults of working age has serious implications for the world economy, as it implies that output per person will fall, so on average there will be fewer resources around to consume.

It is not just growth that can be influenced by demographics, inflation can also be affected

It is not clear what impact demographic trends and the shrinking of the working population will have on inflationary pressure. An ageing population could potentially be inflationary, with increased demand for workers leading to rising wages. However, it could also be deflationary, if people's worries over whether they will have enough resources in retirement lead them to postpone spending.

[6] The working age population is defined here as 20 to 64 year olds. The data are projections, rather than forecasts and are from the UN World Population Prospects: The 2015 Revision, based on medium fertility projections.

[7] in the case of Germany the decline is from 49.1 million in 2015 to 30.3 million in 2100; from 35.4 million to 23.5 million in Italy; and from 71.0 million to 38.7 million in Japan.

[8] The working age population is defined here as 20 to 64 year olds. The data are projections, rather than forecasts and are from the UN World Population Prospects: The 2015 Revision, based on medium fertility projections.

[9] the number of adults of working age is expected to fall from 126.2 million in 2015 to 97.1 million in 2100 in Brazil, from 928.6 million to 482.6 million in China and from 93.9 million to 64.8 million in Russia.

However, using adults of working age to measure the labour supply only captures part of the story. For example, a more sophisticated growth model might also include human capital (or how educated the workforce are); differentiate between skilled and unskilled labour; and allow for trends in participation rates for different types of worker. These factors are also important, because as they change over time so too will the amount an economy can produce for a given level of the population. For example, increased participation in the labour force due to a shift in the retirement age, or policies that encourage women to work will act to boost the effective labour supply, even though the total number of people in an economy has not changed. Some of the growth 'miracles' of the twentieth century, were actually a result of policies aimed at increasing the factors of production in use, and had little to do with improving the efficiency of how they were combined.[10]

Education levels have been rising over time, which will affect the labour force

In general the younger population is better educated than older cohorts, meaning that their impact on the effectiveness of the labour force will differ. For example, improving human capital is one way to increase output for a workforce of a given size. However, rising education will also affect participation in the workforce by changing the opportunities that workers have. For example, better career prospects linked to rising education levels have tended to mean that there are fewer stay-at-home mothers, so the share of the labour force is likely to increase for a cohort of a given size.

It is important to use the best measure of economic performance

Increasing dependency ratios mean that output growth around the world is likely to slow, as the workforce starts to shrink. This was certainly the experience of Germany in the first decade of this century.

This makes it important to think about alternative measures of economic performance, such as GDP per capita, as these can produce a different picture of performance compared to simple GDP growth. For example, Japan has had a strong performance in terms of GDP per capita going back to the last century, despite lacklustre GDP growth.

Similarly, migration makes measures of a country's performance such as GDP growth less meaningful, and again suggests that GDP per capita may be more important as a measure of success.

IEG Recommendation:
Shifting population patterns, including migration, mean that GDP growth may not be the best measure of economic performance going forward. Therefore it will be important to emphasise other measures, such as GDP per capita, in order to get a better picture of how countries are performing.

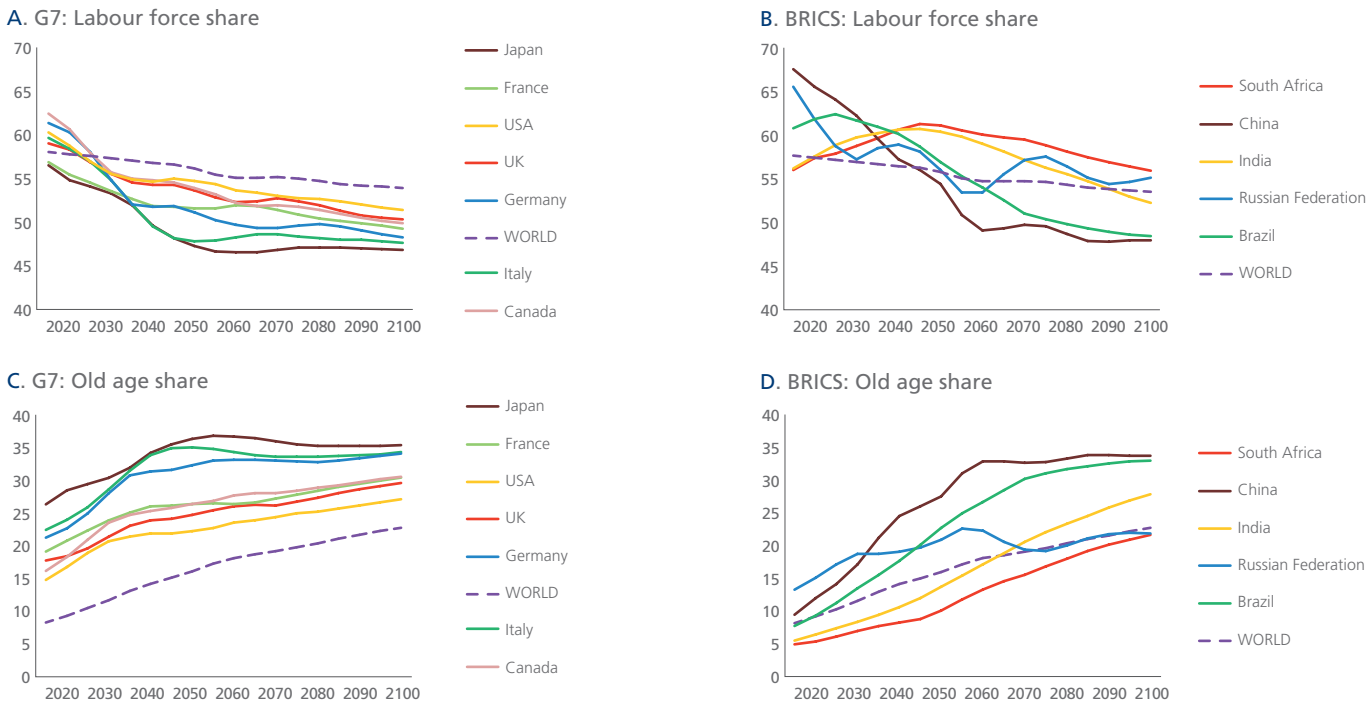
[10] *See the description of growth in the Soviet Union in the 1960s, and Asia's economic "miracle" of the 1980s and 1990s in Krugman (1996).*

Much of the decline in the share of the working age population is mirrored by an increase in the share of the population aged 65 and over both within the G7 and the BRICS economies, see Figures 3.C and 3.D respectively. With increasing longevity, and importantly improvements in the health of people of retirement age, the success of many economies will therefore depend on how well they are able to utilise this segment of the population, for example by encouraging people to work longer before retirement and by upgrading their skills. It is already the case that employment rates of older people have been growing rapidly in the UK over the last two decades, with employment rates higher among more educated individuals.[11] Estimates suggest that if the UK could match the performance of Sweden in terms of employment of older workers, then GDP could be boosted by around £100 billion, or 5%.[12]

The ageing of Asian populations can help explain economic outturns

Western governments sometimes express frustration that countries like China run large current account surpluses, with lower levels of domestic consumption than could be possible given income levels. However, in many ways this behaviour is a rational response to a rapidly ageing population, with people's retirement needs driving the need to save. As people dis-save over retirement, it is likely that these imbalances will correct themselves over time.

Figure 3
Population shares for G7 and BRICS, 2015 to 2100



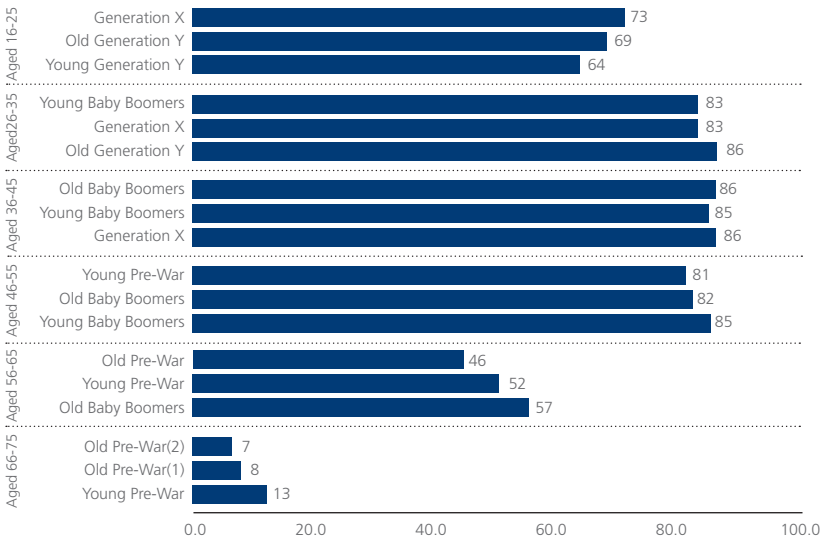
Source: Analytically Driven Ltd

Notes: Data from the UN World Population Prospects: The 2015 Revision. Projections for 2015 to 2100, based on the medium fertility variant. Data for the labour force share is for those aged 20 to 64 as a share of total population. Data for old age share is for those aged 65+ as a share of the total population.

[11] *See the discussion in Tetlow (2015).*
[12] *See the discussion of PwC's Golden Age Index in Sentance (2015).*

Looking at the performance of individual cohorts as they reach different ages, it becomes clear that factors such as rates of economic activity and self-employment have largely reflected age rather than the experiences of a particular cohort, see Figures 4 and 5. Although economic activity rates in older cohorts have risen over time, there could still be challenges associated with changing the engagement in economic activity of these cohorts. This is particularly true as illness rates and disability tend to rise with age, see Figure 6.

Figure 4
Economic Activity rates by cohort at different ages



Source: George et al (2015).

Notes: For each age segment, the top bar shows outcomes in 1993, the middle bar outcomes in 2003 and the bottom bar outcomes in 2013. Data from Quarterly Labour Force Survey (April-June quarters). Data for 1993 is for Great Britain, data for other years is for UK. Cohorts defined by age bands: Young Generation Y were aged 16-25 in 2013 (born 1988-97); Old Generation Y were aged 26-35 in 2013 (born 1978-87); Generation X were aged 36-45 in 2013 (born 1968-77); Young Baby Boomers were aged 46-55 in 2013 (born 1958-67); Old Baby Boomers were aged 56-65 in 2013 (born 1948-57); Young Pre-War were aged 66-75 in 2013 (born 1938-47); Old Pre-War is the same as Old Pre-War (1) and were aged 66-75 in 2003 (born 1928-37); Old Pre-War (2) were aged 66-75 in 1993 (born 1918-27).

Adapting to an ageing population creates challenges for growth

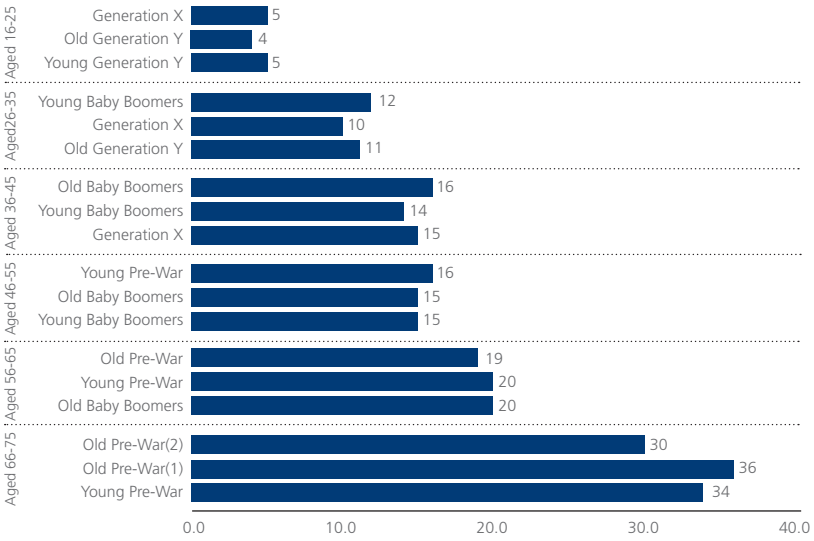
Economies can influence how an ageing population will influence economic growth by looking at policies such as how to encourage older workers to remain in the workforce. This creates opportunities for growth relative to what would be possible if nothing changed.

However, an ageing population also poses significant risks to growth. For example, if a worker's productivity is typically highest before they retire, then the fact that future cohorts will be shrinking poses risks to growth, as there will be fewer high productivity workers in the workforce.

Job satisfaction can be very high amongst older generations

For some the purpose of work is not just about earning money –it can also provide a way to engage with society. Older people typically have the highest job satisfaction, even when they are in low paid roles, such as retail.

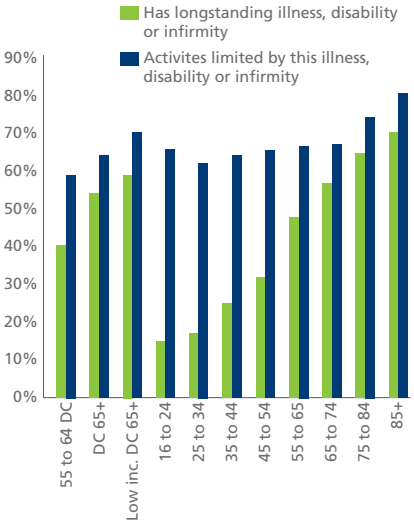
Figure 5
Self-employment by age group, 1993-2013



Source: George et al (2015).

Notes: For each age segment, the top bar shows outcomes in 1993, the middle bar outcomes in 2003 and the bottom bar outcomes in 2013. Data from Quarterly Labour Force Survey (April-June quarters). Data for 1993 is for Great Britain, data for other years is for UK. Cohorts defined by age bands: Young Generation Y were aged 16-25 in 2013 (born 1988-97); Old Generation Y were aged 26-35 in 2013 (born 1978-87); Generation X were aged 36-45 in 2013 (born 1968-77); Young Baby Boomers were aged 46-55 in 2013 (born 1958-67); Old Baby Boomers were aged 56-65 in 2013 (born 1948-57); Young Pre-War were aged 66-75 in 2013 (born 1938-47); Old Pre-War is the same as Old Pre-War (1) and were aged 66-75 in 2003 (born 1928-37); Old Pre-War (2) were aged 66-75 in 1993 (born 1918-27).

Figure 6
Longstanding illness, disability or infirmity, 2010-2012



Source: Lloyd and Lord (2015).

Notes: Based on analysis of the Wealth and Assets Survey (WAS), Wave 3. The information on "activities limited by this illness, disability or infirmity" is the proportion of those with an illness disability or infirmity who retort that their activities are limited as a result. 55 to 64 DC are individuals with a defined contribution pension who are not yet retired; DC 65+ are individuals aged 65 or over with DC pension savings or a DC pension income; and Low inc. DC 65+ are individuals aged 65 or over with DC pension savings or a DC pension income whose equivalised household income is below the median.

The ability of countries to adapt to an ageing population, with a shrinking workforce, will also depend their ability to attract capital. For example, the Nissan Motor Company uses far more robots in its factories in Japan than it does in its factories in India. The difference is not the ability of technology in different locations to perform tasks, but the availability and relative cost of labour in India compared to Japan.[13]

In fact the labour share of output has declined significantly since the early 1980s, with declines observed in most countries and across most industries.[14] Roughly half of this decline is accounted for by a fall in the relative price of investment goods, partly driven by the information-technology revolution and the advent of the computer age, which has increased the incentives for firms to invest in capital at the expense of labour.[15] This suggests that as labour becomes scarcer, economies will shift how goods and services are produced.

It will, however, be important for countries to both attract and retain talented people, particularly in a world where labour is internationally mobile. This means that countries will need to think about the impact of policies, such as taxation, on location choices. For example, high top rates of labour taxes can influence productive potential through their impact on the location decisions of superstar inventors – those inventors responsible for the most cited patents, see Table 3.

An ageing world population will increase the incentives to invest in technology

Countries with a growing labour force have less incentive to invest in technology. Therefore investment incentives are likely to change with demographic trends. For example, investing in robotic carers could help prevent the need to divert resources into healthcare, which could otherwise lead to a scarcity of labour elsewhere.

Table 3
Impact of income tax rates on location decisions of superstar inventors

	Cut in top marginal rate of tax	Percentage increase in domestic superstar inventors retained	Percentage increase in foreign superstar inventors attracted
Canada	From 48% to 38%	7.9%	30.6%
Denmark	From 64% to 54%	1.9%	43.8%
France	From 72% to 62%	6.1%	56.4%
Italy	From 55% to 45%	4.0%	35.5%
Japan	From 51% to 41%	0.3%	32.6%
Switzerland	From 56% to 46%	5.5%	36.1%
United Kingdom	From 55% to 45%	10.6%	35.1%
United States	From 47% to 37%	0.1%	23.7%

Note: Impact of a 10 percentage point decrease in the top marginal tax rate in 2000. Superstar inventors are those in the top 1% of the distribution of citations-weighted patents.
Source: Akcigit, Baslandze and Stantcheva (2015).

[13] *Autor (2013).*
[14] *Labour's share of output is measured using the cost of labour (wages) as a share of gross value added and can be thought of as the return that goes to labour, as opposed to other factors of production, out of the total.*
[15] *Karabarbounis and Neiman (2014).*

4: IMMIGRATION

As the previous sections make clear, migration is likely to be one of the main drivers of population trends around the world. Migration is also one of the most controversial political issues in many countries. However, the evidence shows that from an economic perspective, the impact of migration is largely positive. Indeed, while it can be very unpopular in recipient countries, immigration is far and away the most powerful mechanism from improving economic outcomes at a global level. A recent survey shows that existing studies put the benefits of a hypothetical elimination of all barriers to capital flows at between 1.7% and 0.1% of world GDP; an elimination of barriers to merchandise trade at between 4.1% and 0.3% of world GDP; and, in the case of emigration, hypothetically eliminating all barriers to labour mobility would yield benefits equivalent to 147.3% to 67% of world GDP.[16] The differences are so large, that even allowing emigration of 5% of the population of poor regions would bring global gains that would exceed the impact of eliminating all the policy barriers associated with merchandise trade and all the barriers to capital flows. To put this thought experiment in context, currently 3% of the world's population live outside their country of birth.[17]

Despite the potential benefits, migration remains controversial, particularly in recipient countries. One of the reasons for this is that a large chunk of the benefits of migration flow to the migrants themselves, with smaller benefits flowing to the country of origin and the recipient countries. In the case of recipient countries, there are also large political sensitivities, based on fears (justified or not) that immigration will act to reduce wages, as well as potentially increase unemployment amongst native workers – fears that are particularly acute amongst low-skilled workers. While it would be easy to imagine similar potential outcomes from, for example, moves to encourage greater female participation in the labour force or to encourage inward migration between regions in the face of local shocks, these are a relatively uncontroversial part of the policy agenda in most countries.[18] The difference is possibly that natives (including female natives) get to vote, while immigrants do not.

In the case of the UK, up until the early 1990s there was relatively little immigration. Since then, however, the immigrant population has grown

It is important to challenge the myths about migration

Challenging myths about migration is helpful, because migration often has a positive impact on economic outcomes. Therefore while migration can create challenges, its ability to help improve the dependency ratio, for example, means immigration can play an important role in improving economic growth prospects.

[16] *Table 1, Clemens (2011).*
[17] *Clemens (2011).*
[18] *The evidence reviewed in Clemens (2011) does suggest that female participation in the labour force can modestly lower men's wages and regional migration can modestly lower wages at the destination.*

substantially – from around 4.8 million in 1995 to 9 million in 2011. This is at a time when the native population has remained relatively constant at about 52 million. However, although a lot of emphasis has been placed on the impact of migrants from the EU (and the wider European Economic Area countries, who are also part of the EU Single Market), following the accession of East European countries, in practice between 2000 and 2012 immigration from non-EEA countries has been twice as large as immigration from EEA countries (2.9 million compared to 1.5 million from the EEA).[19]

Of course immigration is not just a one way street – in 2010 there were 4.7 million British expatriates living worldwide, of which 1.4 million were resident in the EU. In most cases the stock of British immigrants in an EU country and the stock of immigrants in the UK from that country are roughly in balance. The two exceptions are Poland and Spain. In the case of Poland, there are roughly half a million more Poles living in the UK than Britons living in Poland. In the case of Spain it is the other way round, with over 340,000 more Britons living in Spain than Spaniards in the UK.[20]

The impact of immigration for the recipient country will partly depend on factors such as the age and educational achievements of migrants. In the UK:

- Overall, the immigrant population, particularly from EEA countries, is younger than the native population. The average age of the native population increased from 38.2 in 1995 to 40.8 in 2011. Over the same period, the average age of non-EEA immigrants remained constant at around 32-34 years, and the average age of EEA immigrants fell from 36.3 to 32.3 years.
- A higher proportion of the immigrant population is educated to at least degree level. In 2011 the percentage of natives with degrees stood at 21%, while 32% of EEA immigrants had degrees and 38% of non-EEA immigrants.
- There is a smaller proportion of people in the low education category (those who left full-time education before the age of 17), with one in two natives falling into this category, one in five EEA immigrants and one in four non-EEA immigrants in 2011.

[19] *Dustmann and Frattini (2014). The most recent ONS Mid-year population estimates for 2014 show that EU migrants made up 36.5% of UK residents born overseas, but 55.0% of migrants by nationality, probably reflecting higher take-up of UK citizenship amongst non-EU migrants.*
[20] *Regent's University London (2013).*

- In 2011 employment rates amongst natives stood at 70%, compared to 62% for non-EEA immigrants. However, EEA immigrants had much higher employment rates, 75% in total and 78% for EEA immigrants who arrived in the country after 2000.
- One reason for the lower rates of employment amongst non-EEA immigrants may be that they have more children and therefore more child care responsibilities. In 2011 there were 38 children for every 100 non-EEA immigrant adults, compared to 26 children for every one hundred native adults and 27 children for every 100 EEA immigrant adults.[21]

From an economic perspective, immigration could potentially impact growth, trade, fiscal outcomes, unemployment, wages and inequality in recipient countries. The evidence suggests that the effects of immigration on recipient countries are mostly beneficial, and that concerns about falling wages and rising unemployment are not supported by the data.

4.a Immigration, growth and trade

Since one of the key long-run determinants of economic growth is the size of the labour supply, immigration can help boost long-term growth. Estimates suggest that a one percentage point increase in the share of immigrants in the total population increases income per person by about 6%. This effect appears to mainly operate through increased total factor productivity. However, increased diversity in the immigrant population (measured by the number of countries that immigrants come from) also has a positive effect on income per person, so there may also be an influence from boosting differentiated skills in the labour force. In addition, immigration also appears to increase innovation activity.[22]

In the OECD the evidence suggests that investment tends to respond rapidly to immigration and that in general there is no reduction in total factor productivity (which would be expected if immigrants were less productive). Combined with a one-on-one increase in employment as a result of migration, the results imply that immigration increases total GDP.[23]

Competition for migrants is likely to increase as the world population ages

Demographics are changing everywhere. This means there is a limit on how helpful migration can be in future, as countries will all be looking to supplement their workforce. For example, in Asia, while there are some countries such as Vietnam and India which still benefit from a growing workforce, China's working age population has already peaked and is likely to have roughly halved in size by 2100.

IEG Recommendation:
The impact of population ageing and a shrinking workforce will make it important for governments to think about how they can make their economy attractive to workers in a world of increased international mobility.

[21] *Statistics on the profile of UK immigrants come from Dustmann and Frattini (2014).*
[22] *Ortega and Peri (2014).*
[23] *Ortega and Peri (2009).*

Overall, immigration also appears to have a positive impact on trade. For example, in the case of Spain analysis suggests that a 10% increase in an immigrant community from a given country increases exports to that country by between 0.5 and 1%. This increase appears to be a result of more transactions, rather than more valuable transactions, so could be explained, for example, by: new trade partners in that country; firms starting to export to that country for the first time; or the export of new products.[24]

The positive impact of immigration on trade is particularly true where migrants end up in positions such as business directors or managers, as individuals engaged in business networking type work generate over ten times the value of trade than average migrants. This impact is particularly important where migrants come from culturally distant countries, such as countries with a different legal system.[25]

4.b Impact of immigration on pay and employment

Fear of immigration is often associated with assumptions about its impact on labour market outcomes: either that the immigrants will take the jobs of native workers; or that their presence in the labour market will act to reduce wages, by increasing the supply of labour relative to demand. These fears are often particularly acute amongst low-skilled workers, who worry how they will compete.

Data on the impact of immigration on wages is not definitive, but a body of evidence suggests that immigration largely has a positive impact on labour market outcomes, at least for native workers. For example, the evidence for the OECD suggests that immigration increases employment one-for-one, indicating that there is no crowding out of native workers.[26] In fact there is evidence, at least in the US, that employment of immigrants raises the employment of natives in US firms.[27] Furthermore, the fact that immigrants tend to be more mobile means that the presence of immigrant workers can help economies adjust more easily in the case of shocks. For example, in the case of the US during the 2008-09 financial crisis and recession, the population of Mexican-born men fell by 7.6 percentage points more than average in those cities with

[24] Peri and Requena (2010), based on trade from Spanish Provinces with the 77 trading partners that account for almost 100% of immigration into Spain.

[25] Aleksynska and Peri (2014), based on trade and migration flows for the OECD in 2000. The impact of a migrant's occupation is more successful at explaining trade flows than their education level.

[26] Ortega and Peri (2009) based on a sample of 14 OECD countries over the period 1980-2005.

[27] Ottaviano, Peri and Wright (2013). Kerr, Kerr and Lincoln (2015) also find similar results for skilled workers.

a ten percentage point larger than average decline in employment between 2006 and 2010, even though there was no appreciable shift in the population of low-skilled native men in those areas. This fall in the number of Mexican immigrants reduced the impact of the aggregate demand shock on the employment of low-skilled natives by 40%.[28]

There is also limited evidence that migration acts to reduce the wages of native workers, even low-skilled workers. Indeed, if anything, the impact of immigration on native wages appears to be positive. In OECD countries, for example, the evidence shows that immigration has had a positive impact on average wages of native workers of between 0% to 4%, with the impact on non-college educated workers being particularly positive (between 0% and 6%), and has generally reduced the wage inequality amongst non-movers. In contrast, emigration from OECD countries has had the opposite effect, leading to a decrease in the average wage of less educated natives (of between 0% and -7%) and a worsening in wage inequality amongst non-movers.[29] Evidence also suggests that migration has reduced inflationary pressure in the UK, meaning that immigration has had a positive effect on real wages overall.[30]

The impact of immigration on the pay and employment prospects of native workers, in part depends on whether immigrant workers are:

- substitutes for natives, in which case, because they compete directly for the same roles, an increase in immigrants would either reduce employment amongst native workers, reduce their wages, or both; or
- complementary to native workers, in which case an extra supply of immigrants is likely to improve the job prospects of native workers.

In general the evidence suggests that immigrants tend to be imperfect substitutes for native workers, so that the impact of increased immigration is to put downward pressure on the wages of other immigrants, rather than on native workers. For example, in the UK immigration has mostly acted to reduce the wages of university educated immigrants, rather than native workers.[31]

More generally within Europe (including the UK), immigration appears to cause an increase in the likelihood that native workers will upgrade their occupation

[28] *Cadena and Kovak (2013).*

[29] *Docquier, Özden, and Peri (2014). Based on data from 1990 to 2000. One of the reasons for these effects is that migrants tent to be better educated. The results are robust for a wide range of parameter estimates.*

[30] *Blanchflower and Shadforth (2009). In the US the evidence also suggests that immigration can reduce prices, particularly for non-traded goods, see Cortes (2008).*

[31] *Manacorda, Manning and Wadsworth (2012). Card (2009) and Ottaviano and Peri (2012) both find similar effects in the US, where immigrants and natives are imperfect substitutes, particularly within education groups.*

to one associated with higher skills and better pay within two to four years of immigration taking place, or to increase their self-employment activity, rather than to cause an increase in the likelihood that native workers leave employment or move region. On average the impact on the pay of natives is close to zero or mildly positive, suggesting that immigrants are complements rather than substitutes for native workers, even in the case of workers with low education.[32] In the case of low-skilled workers, part of the impact of immigration has been that workers have upgraded their jobs (taking on more abstract and communication type roles, rather than manual labour), leading to an increase in pay. While the positive impact of immigration on the pay of native workers slowed slightly during the financial crisis, it remained positive.[33]

4.C Immigration and the use of resources

The modest and often positive economic impacts from immigration are at odds with anti-immigration sentiment in recipient countries, and concerns in the UK are often particularly high.[34]

One of the issues that is often raised in connection with immigrants is the burden they place on tax payers, for example by claiming benefits. In practice, there are several features of immigration that can help to offset costs of this nature:

- Immigrants typically arrive after they have received an education in their home country, so the costs of educating the work force in a country with immigration are lower than if all the workers are native. This is particularly true where (as in the UK), immigrants are on average better educated than the native population.
- Immigrants can help compensate for an ageing native population, as they tend to be younger. Furthermore, they often return home in later life, reducing the impact on the health care system, for example, as a result of ageing.
- Tax paying immigrants help spread the cost of public expenditures which are non-congestible – in other words, government spending where the cost does not rise with the population, such as defence spending. In the case of the UK, this type of public spending accounts for around 23% of the total.[35]

[32] *Results based on analysis following outcomes for individual workers in Austria, Belgium, Denmark, Finland, France, Greece, Ireland, Netherlands, Spain, Portugal and the UK over the period 1995 to 2001. Cattaneo, Fiorio and Peri (2015).*

[33] *D'Amuri and Peri (2014).*

[34] *Clemens (2011) quotes an international poll where participants are asked if there are too many immigrants. 59% of people in the UK agreed, compared to 37% in the US, 33% in France and 27% in Germany.*

[35] *Dustmann and Frattini (2014).*

In practice, in the UK the impact of immigration on fiscal outcomes has been positive, rather than negative, at least for EEA immigrants and recent non-EEA immigrants:[36]

- Overall between 1995 and 2011 EEA immigrants made a positive net fiscal contribution of £8.8 billion (in 2011 terms), so that EEA immigrants on average contributed 4% more to the fiscal system than they received in transfers and benefits.
- The picture is even more positive for recent EEA migrants – those arriving since 2000 have contributed 34% more than they took out, a net fiscal contribution of £22.1 billion (in 2011 terms).
- Non-EEA immigrants, however, made a negative contribution overall between 1995 and 2011 (partly because of higher education costs associated with more children), contributing only 86.4% of what they received in transfers and benefits. By comparison, natives contributed an average of 92.6% of what they received in transfers and benefits
- However, recent non-EEA immigrants have also made a positive contribution, as those arriving after 2000 contributed on average 1.9% more than they received in transfers and benefits.
- Overall, recent immigrants are 45% less likely to receive state benefits or tax credits than natives. Even allowing for differences in age and gender, immigrants are still 21% less likely to receive benefits than natives. While EEA immigrants are even less likely to receive benefits than non-EEA immigrants, both groups still receive significantly lower benefits.[37]

The impact of migrants on the economy will change as they get older

Although the evidence suggests that recent migrants have been particularly good for the UK economy, it is important to recognise that their long-run impact may differ from short run experiences. In particular, as migrants get older, settle down and have children, their contribution to public finances may shift.

[36] *This positive impact on fiscal outcomes is consistent with evidence from the US at a Federal level, see the discussion in Clemens (2011).*

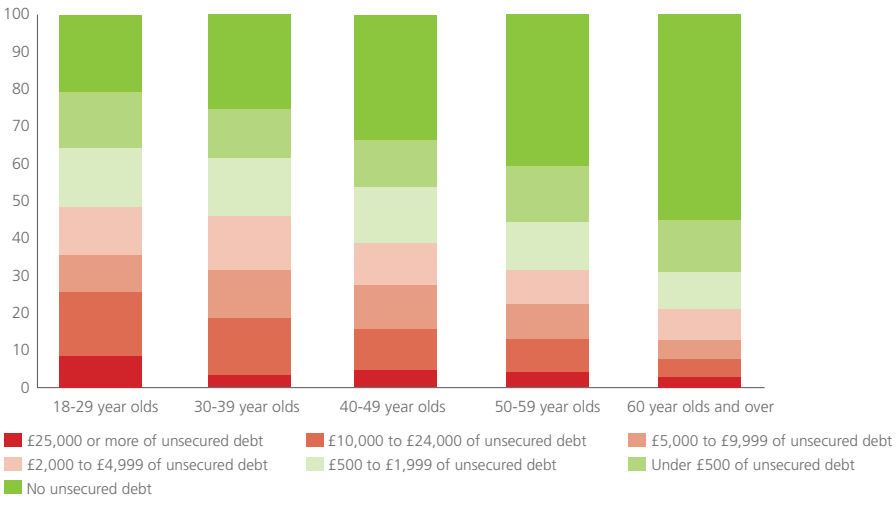
[37] *Figures on UK fiscal outcomes as a result of immigration are from Dustmann and Frattini (2014).*

5: DEBT AND DEMOGRAPHICS

Debt plays an important role in how individuals and households manage their finances. It helps them to smooth their consumption over time – allowing them to bring forward purchases in the expectation that their income (and therefore ability to pay) will rise in future. Furthermore, rising real house prices means that debt plays a particularly important role in allowing people to purchase their own home, as without a mortgage (and the benefits of leverage) few would be able to save sufficient amounts to purchase their first house.

In general unsecured debt levels tend to be higher amongst younger age groups, see Figure 7. However, the existence of debt per se is not necessarily an indication that it will be seen as a burden. Although debt levels are often higher amongst 18 to 29 year olds, more people aged 30 to 39 and 40 to 49 saw their level of unsecured debt as a burden, see Figure 8. Furthermore, higher debt levels were seen as less problematic amongst 18 to 29 year olds than more modest amounts of debt, or the same debt levels amongst older age groups. For example, amongst those with unsecured debt of £25,000 or more, only 21% of 18 to 29 year olds saw this level of debt as a burden, while 67% of 40 to 49 year olds with that level of debt saw it as a burden. Similarly, more 18 to 29 year olds with unsecured debt of between £2,000 and £4,999 saw it as a burden than those with debt levels of £25,000 or more (28% as opposed to 21%).

Figure 7
Amount of unsecured debt by age group



Source: Analytically Driven Ltd

Notes: Author calculations based on Bank of England data from the amalgamated 2011 to 2014 NMG Research Surveys. http://www.bankofengland.co.uk/research/Documents/onebank/dgardinerdatavisentry.pdf.

Figure 8
Percentage share of each age group seeing unsecured debt as a burden, by debt level

Source: Analytically Driven Ltd

Notes: Author calculations based on Bank of England data from the amalgamated 2011 to 2014 NMG Research Surveys. http://www.bankofengland.co.uk/research/Documents/onebank/dgardinerdatavisentry.pdf.

The reason why higher debt levels are often seen as less problematic by 18 to 29 year olds is likely to be the importance of student debt amongst younger age groups, with 43% of 18 to 29 year olds having student debt, falling to 17% of 30 to 39 year olds. This emphasises the importance of the regime underpinning student debt and the need to ensure that the high debt levels associated with further education do not act as a barrier, for example to acquiring a mortgage, in future.

In general the average level of debt held by a given age group has been rising over time, see Figure 9. On average, this rise in debt levels has been more than matched by the increase in gross household wealth (including housing wealth) held by different age groups, see Figure 10. However, it is important to recognise that those holding assets and those holding debt will not necessarily be matched.

Household holdings of debt and assets clearly display a lifecycle pattern

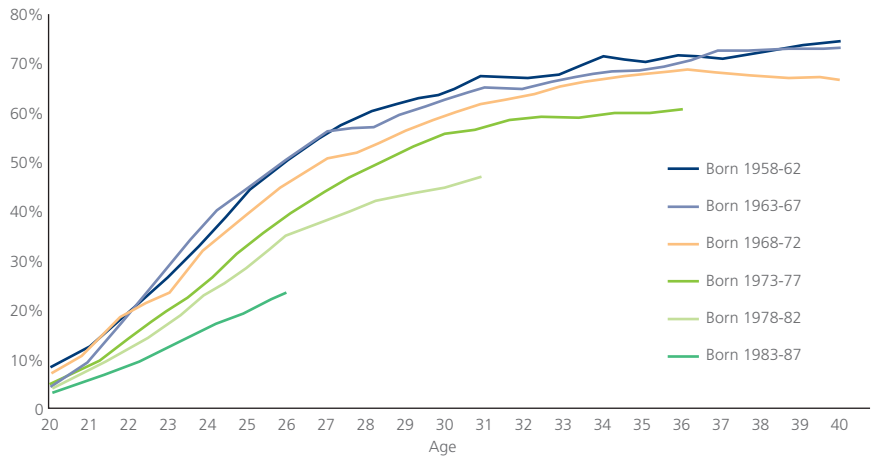
Data show the pattern of debt and asset holdings that would be predicted by economic theory, with holdings of both mortgage debt and assets displaying an inverted-U type pattern, In other words, people tend to hold low levels of debt and assets when they are younger, but these rise as people get older, before falling again in later years. A key mechanism supporting this pattern is the behaviour of income over people's lives. Income is typically low when people initially enter the workforce, reflecting lack of experience. This gives limited scope for people to acquire assets or qualify for mortgage debt. However, as people get older and more experienced their income increases, allowing them both to take on more debt, particularly mortgage debt (which is often limited as a multiple of income), and to acquire housing wealth, as well as other forms of saving such as pensions. Over time people are usually able to pay down their debt, at the same time as continuing to acquire assets. Therefore by the time people retire they typically have both low levels of debt and potentially significant asset holdings, with these assets being used to finance life in retirement.

However, if problems occur in the early stages of this process then it can cause permanent issues for people. For example, a significant proportion of the people who were in their mid to late 30s and living in London during the 2008-09 financial crisis found it harder to buy their first property than previous cohorts. Given that house prices have continued to rise, this group may find it hard to ever get on the so-called 'housing ladder', as, without the benefit of leverage, the gap between any deposit they have saved and the deposit they need will be getting larger.

Certainly amongst younger age groups, home-ownership rates have been falling over time (see Figure 11), suggesting potential problems with market access. Part of the problem has been the increase in house prices relative to earnings for this age group, even the house prices of first time buyers, see Figure 12. These problems are likely to be exacerbated by the stricter regulatory environment following the 2008-09 financial crisis, which limits the amount that mortgage providers can provide at high income multiples.

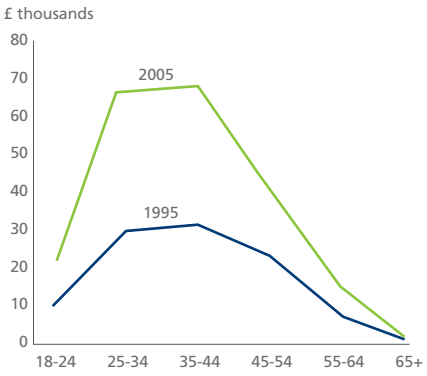
Limits on the number of mortgages available at high loan-to-value or loan-to-income ratios mean that potential homeowners will need to save a significant deposit before being able to qualify for a mortgage. This means that first-time buyers are likely to face increasing difficulty, unless alternative solutions to traditional mortgages can be found, particularly as demographic trends are likely to continue to put upward pressure on house prices. Furthermore, high loan-to-value and loan-to-income ratios have some undesirable features from a macroeconomic perspective, because they create distortions. For example, affordability issues can arise because for an individual the cost of servicing their mortgage debt is not related either to the value of their house or to their income level, meaning that debt servicing costs do not fall if they suffer a negative shock to either their income or the value of the asset, and these risks cannot be solved by shifting from a variable to a fixed rate mortgage.[38]

Figure 11
Homeownership rates, by birth year and age (GB)



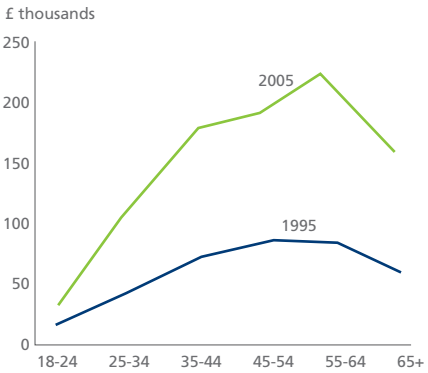
Source: Belfield et al (2015).
Notes: Calculated using Family Expenditure Survey, Family Resources Survey and Labour Force Survey, various years.

Figure 9
Average household debt by age



Source: Bunn and Rostom (2014).
Notes: British Household Panel Survey and Bank of England calculations.

Figure 10
Average household gross wealth (including housing assets) by age

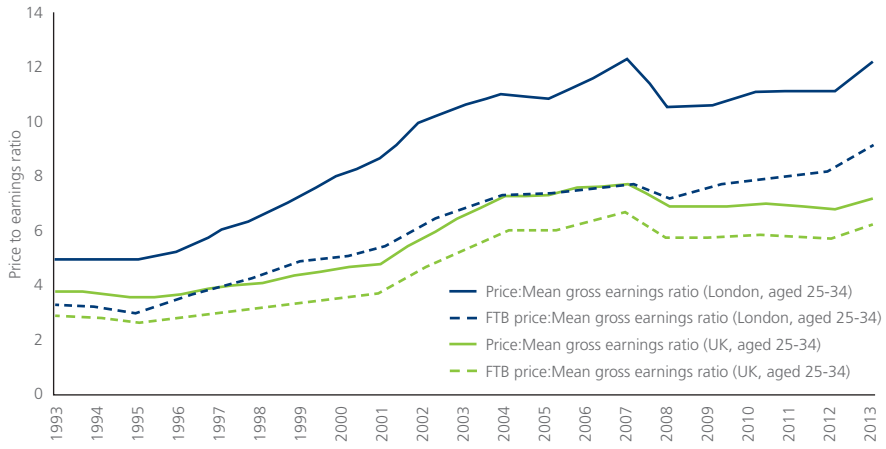


Source: Bunn and Rostom (2014).
Notes: British Household Panel Survey and Bank of England calculations.

One potential alternative is the development of a mechanism that provides some form of risk-sharing funding—for example, creating equity loans to cover the need for a deposit, with repayments linked to the value of the house when it is sold, rather than to regular interest payments. A loan of this type could be structured to allow home owners to decide how much downside risk they want to offset, with the value of any upside going to the loan provider increasing with the amount of downside risk they took on.[39]

In many respects the UK government's Help to Buy scheme is a hybrid equity loan/mortgage model, as the repayment value of the loan is linked to the property value, but regular payments become due after 5 years. Whether it would be possible to create a private-sector option to provide this type of loan is an interesting question. It would certainly help to overcome some of the problems that first-time buyers face. However, providers of equity loans would need to be prepared to tie up their money for long and uncertain periods (as repayment would only occur when the house is sold), and would need to be able to take on some degree of property risk, as house prices can also fall.

Figure 12
House price to earnings ratios for 25 to 34-year-olds, using all prices and prices paid by first time buyers



Source: Belfield et al (2015).

Notes: Calculated using Nationwide house price index and earnings from the Labour Force Survey (gross individual earnings of workers). FTB stands for first time buyer. Years refer to financial years.

[38] *See the discussion in Miles (2013).*
[39] *See the discussion in Miles (2013) and Miles (2012).*

Young people in the UK are renting homes with increasing frequency

The opportunities for people to get on the 'housing ladder' have become scarcer. This has led to shift in behaviour, with younger generations being more likely to rent than previous generations. Combined with the fact that people tend to pay off debt as they get older, this has meant that the share of households owning homes outright and the share of those renting have both been rising, with the share of households with mortgages falling by around 10% between 2001 and 2011, according to Census data.

This has clearly led to a sense of frustration amongst some younger people. One option to deal with this might therefore be to make renting more attractive, for example by improving the security of tenure. This might help those renting and change the dynamic in the housing market in the UK, reducing the desire to buy. For example, other large cities, such as New York, have rent controls, although these create insider-outsider problems, as while those who already have somewhere to rent benefit, those trying to find somewhere to rent find it harder to do so given the market distortions caused by such policies.

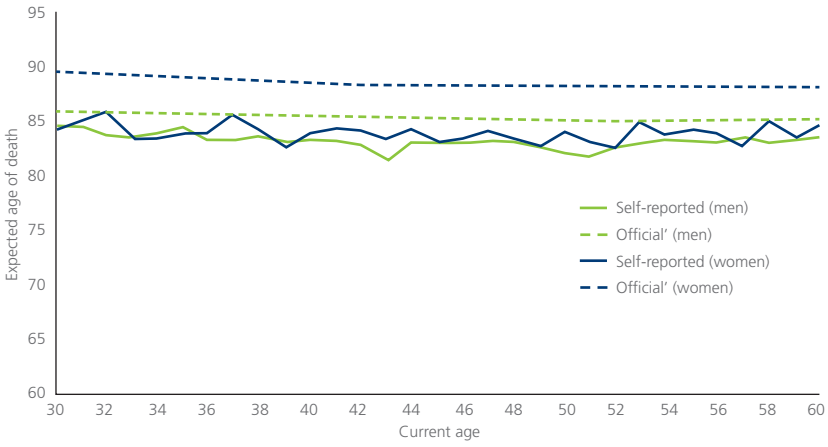
Another option to make renting more attractive would be to reduce the value of housing as a mechanism for wealth acquisition, by reducing the likelihood that house prices will rise. In places like Germany and the US, for example, the housing supply is more elastic than in the UK, partly because there is more land available for building, but also because there is more of a culture of homesteading. The elasticity of the housing supply influences the likelihood that house prices will rise and therefore people's incentives to buy, meaning that loosening the planning rules in the UK could make renting more attractive by reducing expectations of house-price inflation, albeit with a risk that houses get built in the 'wrong' locations.

If renting were to become more popular, it might change households' investment patterns, as they would need to look to invest in other assets instead. UK households currently hold a substantial amount of their wealth in the form of housing wealth, in part because the tendency for house prices to rise makes housing debt and the use of leverage an attractive option.

6: THE FINANCIAL IMPLICATIONS OF AGEING

Longevity can be a hard risk to hedge against and, as Figure 13 shows, evidence suggests that individuals systematically underestimate their life expectancy relative to official estimates.

Figure 13
Estimates of age of death

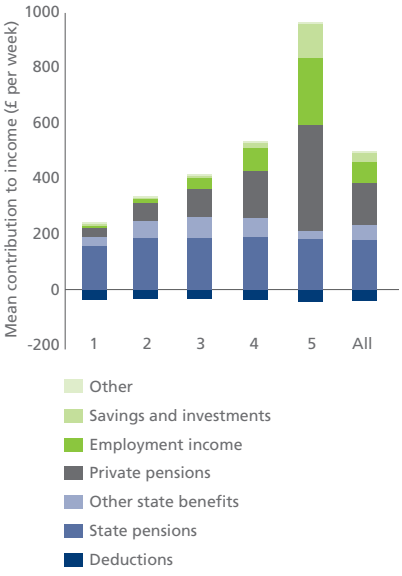


Source: Emmerson (2014).

Notes: From Crawford and Tetlow (2002), IFS Report R73, Figure 2.2. Self-reported life expectancy based on age expected to retire and length of time expected in retirement.

One of the reasons that people find it hard to estimate their life expectancy is that longevity has been increasing over time, meaning that the experiences of older generations (which tend to be a key reference point) are not likely to be a good guide to people's own life expectancy. Increased longevity also means that people can expect to spend longer in retirement than earlier generations. This emphasises the importance of saving for retirement and is one reason why the UK government has introduced reforms, such as auto-enrolment, to try and encourage people to be better prepared. As Figure 14 illustrates, access to private pension savings can make a big difference for someone's pension income, although it needs to be recognised that the ability to accumulate pension wealth will also depend on people's incomes during their working life.

Figure 14
Pensioner income sources by pensioner income quintile, 2011-12



Source: Hood and Joyce (2013).

Notes: Calculated using Family Resources Survey 2011-12. All monetary amounts are expressed in equivalent amounts to a childless couple. 'Private pensions' includes income from both occupational and personal pensions.

6.a Pensions

The UK pension market is undergoing a period of significant change. This is in part because of long-term changes, such as the escalating cost of providing pension guarantees and changes to accounting rules that have led firms to rethink their approach to providing pensions for employees and the resulting move away from defined-benefit (DB) schemes. However, it also represents a raft of recent legislative and tax changes, such as:

- the introduction of a requirement that employers auto-enrol employees into a qualifying workplace pension. The contribution rates associated with auto-enrolment are gradually being phased in. They are currently a minimum of 2% (of which the employer pays at least 1%) and this will stay the same until April 2018, when the minimum contribution will rise to 5% (including a minimum 2% employer contribution). From April 2019 the minimum contribution will be set to 8% (including a 3% employer contribution).
- the introduction of NEST (National Employment Savings Trust) as an alternative to insurance companies as a provider of occupational defined-contribution (DC) pensions. NEST accepted its first members in 2011. By March 2015 there were over 14,000 employers using NEST, and it had over 2 million members with over £420 million in assets under management.
- the changes to the rules on annuitization announced in the 2014 Budget. These affect those in the middle of the DC pension wealth spectrum – those with small pots, and those who could demonstrate that they had a guaranteed income of at least £20,000 per year did not have to annuitize. The profile of the group affected by the proposals will change over time (in line with the increased reliance on DC pensions). However, analysis by the Institute for Fiscal Studies suggests that of those currently aged between 55 and 59, just under four in ten men and just over two in ten women will experience greater flexibility as a result of the Budget changes.[40]
- the announcement in the March 2015 Budget that the government would change the rules on annuities, to allow people who have already bought an annuity to sell it, so creating a secondary market in annuity contracts. (The July 2015 Budget announced that implementation of these changes would be delayed until 2017.) In December 2015 the Government confirmed that it will also allow future purchasers of annuities to sell them if they so wish.

Adapting to an ageing society will require a strategic approach, including on the role of financial services

It is very important that governments consider the policy options for adapting to an ageing society. This will include building a consensus on issues such as pensions, as well as thinking about how technology will help adaptation. Although some aspects of the pensions system, such as auto-enrolment, enjoy broad support, in general the policy environment has been in a state of flux for some time. Policy certainty is important, because without it firms lack the incentives to invest capital in potential solutions.

IEG Recommendation:
Policy stability and consistency on issues such as the future of the pension regime will be crucial for building an effective response to the challenges of an ageing society. This is particularly true for sectors such as financial services, where any engagement requires firms to take a long-term position, meaning that understanding the risks to capital is important.

[40] *Emmerson et al (2014).*

- the announcement in the July 2015 Budget that the government was going to consult on the tax regime for pensions, including looking at whether tax incentives should be changed from the current system to an ISA-based model.

Table 4
How is the money split across different sectors of the pensions market

		Annuities	DC Pensions	Funded DB pensions
Number of policies receiving contributions in 2012 (mn)		0.4[a]	6.6[b,k]	3.9[b,k]
Flow of new money in 2012 (£bn)		14.0[a]	17.9[c,f]	49.6[d,e]
Average contribution rate (employer and employee) % salary in 2011		n/a	9.4[f,g]	19.2[f,h]
Amount paid out to policy holders in 2012 (£bn)		13.5[i]	n/a	43.0[d]
Stock of money invested in 2012 (£bn)		210.0[j]	379.4[d,k]	1603.3[l]
Of which:	UK equities[n] (%)	-[l]	***25.0***[m]	7.0[l]
	UK government securities (%)	10.0[l]	*5.0*[m]	12.9[l]
	Index-linked gilts (%)	*4.0*[l,o]	-[m]	8.9[l]
	UK Corporate bonds (%)	*30.0*[l,p]	*10.0*[m]	4.0[l]
	Property and infrastructure (%)	20.0[l]	*2.0*[m]	1.9[l]

Source: Analytically Driven Ltd

Notes: 2012 is used to provide an indication of the size of the market before the impact of recent changes could be felt. Based on data from ONS, ABI, HMT and author calculations. Figures in italics have been estimated. DC pensions include occupational and personal pensions. Funded DB pensions include private sector and funded public sector (mainly LGPS) DB pensions. [a]ABI (2014) "The UK Annuity Market: Facts and Figures". [b]ONS (2013) Pension Trends Ch 6. [c]Employer and individual contributions to personal pensions in 2011/12. [d]ONS (2013) Pension Trends Ch 9. [e]Excludes rents, dividends and interest receivable, as well as transfers from other pension funds. [f]ONS (2013) Pension Trends Ch 8. [g]Occupational schemes only. [h]Private sector schemes only. [i]Calculated from ABI Key Facts (2013) and includes bulk annuity deals. [j]Estimated from HMT (2014) "Freedom and Choice in Pensions" Chart 6A. [k]Data for 2011. [l]Calculated from ONS MQ5: Investment by insurance companies, pension funds and trusts, 2013Q4. [m]In the absence of a specific breakdown of investment by DC pension funds this has been inferred from the breakdown of assets held by unit trusts and property unit trusts from ONS MQ5: Investment by insurance companies, pension funds and trusts, 2013Q4. [n]Includes quoted and unquoted shares. [o]Estimated from the share of index-linked bonds in investment by life insurers. [p]Estimated at 50% of the total holding of corporate bonds, based on the split of the investment in UK/foreign corporate bonds by funded DB schemes and unit trusts and property unit trusts.

The changes outlined above affect both sides of the pensions market: the accumulation phase, when individuals acquire pension wealth, and the decumulation phase, when they seek to turn that wealth into an income. In the case of DB pensions, where pension wealth depends on factors such as length of service and income levels rather than investment returns, both accumulation and decumulation are handled within the scheme. However, for individuals investing in DC schemes, where pension wealth depends on the amount invested and investment returns, scheme members need to find a way to transform that wealth into an income at retirement. Historically this was done through an annuity, which provided some form of guaranteed income for life (with the form of the guarantee depending on the type of annuity chosen). Table 4 contains a breakdown of some key features of three of the main sectors of the UK pension market: annuities; DC pensions (both

occupational and private pensions); and funded DB schemes (private sector and local-government pension schemes). The data is for 2012, before the main changes outlined above were introduced, to give a sense of scale for the potential impact of changes.

Combining the membership of occupational DC with membership of private pension schemes gives 6.6 million people contributing to a DC pension – the largest group of active savers in pension schemes. This compares to the 3.9 million active members of funded DB pension schemes, which is roughly evenly split between private sector (1.9 million) and funded public sector (2 million) schemes. In addition, there are 3.3 million active members of unfunded public sector schemes.

Total contributions (less refunds) into funded DB schemes amounted to £49.6 billion in 2012, almost 2.8 times the total contributions to DC schemes and 4.7 times the level of contribution per active scheme member. This reflects three main factors. Firstly, the level of contributions (employer and employee) into DB schemes is higher than those for DC schemes. This is partly because more DB schemes are contracted out. In addition, many DB schemes are in deficit. Therefore contributions reflect not only employer and employee normal contributions, but also employers' special contributions, which are aimed at closing scheme deficits. In 2012 employers' special contributions reached £19.4 billion.

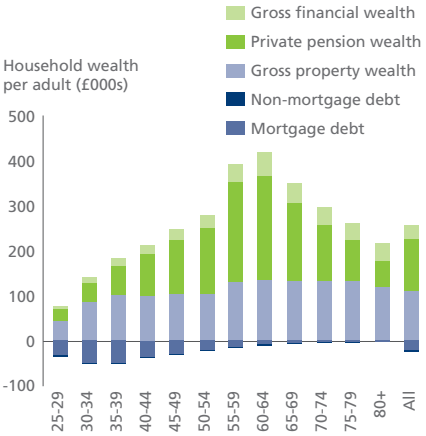
6.a.i Accumulating pension wealth

Pension wealth is an important component of household wealth, particularly for those approaching retirement, see Figure 15. For those who are less well-off, state pension wealth is also extremely important, see Figure 16.

Encouraging pension saving is therefore an important component of government policy, because it encourages personal responsibility and reduces the need for individuals to rely on the state. This is one reason why automatic enrolment into pension schemes has been introduced, as it makes use of behavioural insights to maximise take up. Once fully implemented, the introduction of automatic enrolment is expected to see up to 8 million extra people enrolled into workplace pensions, predominantly DC schemes, increasing the amount being saved in workplace pensions by £11 billion p.a.[41] This would amount to a 16% to 23% increase in yearly pension contributions

[41] *HM Treasury (2014).*

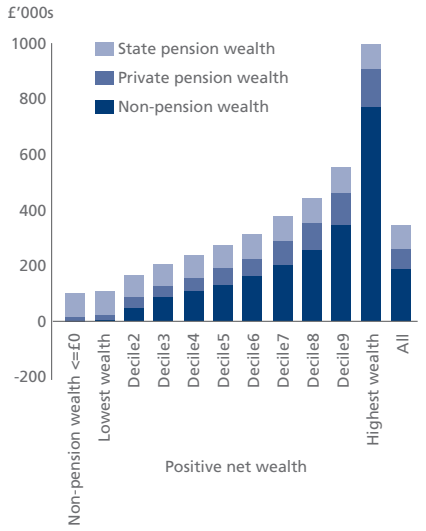
Figure 15
Components of mean net household wealth, by age, 2008-10 (excluding state pension wealth)



Source: Hood and Joyce (2013).

Notes: Calculated using Wave 2 of the Wealth and Assets Survey.

Figure 16
Composition of wealth, by decile of non-pension wealth



Source: Crawford and Hood (2015).

Notes: Calculated using 2012/13 English Longitudinal Study of Ageing. Public pension wealth and to a lesser extent private pension wealth are much more important for those lower down the wealth distribution.

over and above the levels observed in Table 4, depending on whether or not special contributions into DB schemes are expected to continue.

Tax incentives are seen as an important part of encouraging people to save in a pension, because they help to offset the perceived disadvantages of tying up money in a way that cannot be accessed until retirement. The Government announced a consultation on pension taxation in its July 2015 Budget. One area that it is investigating is the possibility of switching from the current pension tax rules, which tax pension returns under an EET model,[42] to an ISA based tax model.[43]

Analysis shows that the current tax system is significantly more favourable than an ISA type model, particularly for higher rate tax payers who are likely to only pay basic rate tax on retirement. Although a basic rate tax payer saving in a pure EET savings vehicle would get identical results to saving in a TEE type savings vehicle, such as an ISA, combined with the ability to withdraw a tax free lump sum, the result is that the current system yields significantly higher returns. Indeed the current pension tax system means that

Table 5
Upfront contribution to different asset classes needed to produce identical returns

		Basic rate taxpayer	Higher rate taxpayer
ISA (cash or stocks and shares)		100	100
Cash deposit account	(invested 1 year)	101	102
	(invested 10 years)	110	121
	(invested 25 years)	127	163
Employee contribution to pension		94	86
Employer contribution to pension		72	-75
Owner-occupied housing		100	100
Rental housing	(invested 10 years)	109	116
	(invested 25 years)	122	142
Stocks and shares	(invested 10 years)	103	111
	(invested 25 years)	105	127

Source: Wakefield (2009)

Notes: Calculations based on the 2008/09 tax system. Returns for the basic rate tax payer and higher rate taxpayer assume that they remain in the same tax bracket throughout their lives. Investment in rental housing and stocks and shares are assumed to attract a capital gains tax liability. Assumes 2% inflation and 3% real return on all assets. Have assumed no impact on benefit and pension credit entitlement.

[42] *The current model of pension tax incentives is an EET model, whereby the income used to contribute to a pension is tax exempt, returns on the investment are tax exempt, but any withdrawals from a pension (over and above a 25% tax-free lump sum) are taxed at an individual's marginal rate of income tax, ie it is an exempt, exempt, taxed, or EET, system.*

[43] *ISAs are taxed under a TEE model, whereby the income used to contribute to a pension is taxed, investment returns are tax exempt, and any withdrawals from pensions are also tax exempt.*

saving in a pension (particularly if contributions are paid by your employer) is much more favourable for both basic rate and higher rate tax payers than any other form of saving, as it requires a smaller contribution to achieve the same returns, see Table 5.

However, there is potentially one drawback to the current system for taxing pensions, which is that it can be complicated to explain; the consultation on pension-tax relief launched by the Government in July 2015 alludes to this issue, and stakeholders continue to work with the Government to explore how communication could be improved. One way to assess whether this has been a barrier to encouraging saving is to look at the behaviour of people who are close to the higher rate tax threshold. The benefits of saving in a pension rise significantly for someone paying higher rate tax, implying that contributions and pension take up should differ, depending on which side of the threshold an individual is. Evidence suggests that, unlike ISAs, there is a discontinuity in pension take up at the higher rate tax threshold.[44]

The ability to withdraw a tax free lump sum is a key factor in making the current retirement saving regime attractive

Saving in a pension requires someone to tie up their savings until they retire. Therefore to encourage people to do this it is important that the pension-tax regime makes the return on investment attractive. For basic rate tax payers, the ability to withdraw a tax free lump sum at retirement is particularly important for ensuring that the returns on investment will be better than the returns under a different tax wrapper, such as an ISA.

6.a.ii Turning pension wealth into an income

Until the reforms announced in the 2014 Budget were implemented on April 6th 2015, the main way that savers in DC schemes transformed their savings into an income was through the purchase of an annuity. As Table 4 shows, in 2012 there were 6.3 million pension annuities in payment in the UK, with a further 420,000 new annuities contracts, worth £14 billion, sold in 2012. Since the announcement of the reforms the size of the annuities market has fallen significantly, see Table 6. The number of contracts sold in Q2 2015 was less than 20% of those sold in Q2 2013, with the total value of annuities sold standing at under a third of the 2013 level. These changes have meant that the average amount of money per annuity has increased by over 60%, meaning that the annuity market appears to be more appealing to those with larger pots relative to those with only small amounts to invest. Historically the annuity market has had a significant tail of those with small pots, meaning that in Q2 2013 although the average pot size was £34,500, the median pot size was £21,100.[45]

[44] *See Crawford, et al (2012). It is not, however, possible to determine whether this discontinuity is a response to an active tax optimisation strategy, or simply the signalling effect that being a higher rate tax payer means that people should pay more attention to their finances.*

[45] *ABI (2014).*

Table 6
Annuity and income drawdown sales

	Number of contracts sold	Value of contracts sold (£m)	Average value of contract sold
Annuities sales			
Q2 2015	17,800	£990 million	£55,600
Q2 2014	46,400	£1,790 million	£38,600
Q2 2013	89,900	£3,100 million	£34,500
Income drawdown sales			
Q2 2015	19,600	£1,300 million	£66,300
Q2 2014	9,500	£670 million	£70,400
Q2 2013	5,500	£430 million	£77,600
Combined annuity and income drawdown sales			
Q2 2015	37,400	£2,290 million	£61,200
Q2 2014	55,900	£2,460 million	£44,100
Q2 2013	95,400	£3,520 million	£36,900

Source: Analytically Driven Ltd

Notes: Based on ABI data and author calculations. Data taken from ABI (2015), ABI (2014). Data for income drawdown sales is for ABI members only (including Legal and General). Numbers may not add up due to rounding.

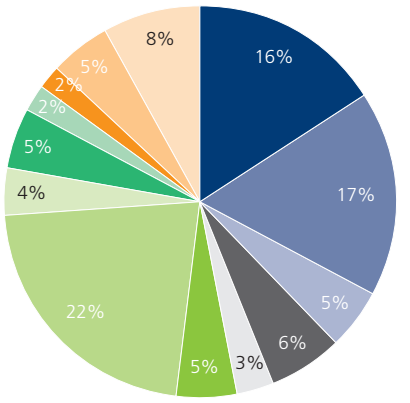
In Q2 2015 Association of British Insurers (ABI) members also sold 19,600 income drawdown products, worth £1.3 billion (or £66,300 on average). However, although this represented a significant increase in income drawdown sales relative to Q2 2013, combining both annuity and income drawdown sales by ABI members it is clear that both the volume and the value of the sales have fallen significantly (by 61% and 35% respectively).[46]

It is not possible to provide a definitive answer on how retirement funds have been used. However, an opinion poll conducted for PwC in the wake of the 2014 Budget announcement suggested that only around 33% of funds would be used to purchase traditional retirement products (such as annuities and income drawdown), with the remainder of funds being used in a wide variety of ways, with the most popular option (accounting for 22% of funds) being a bank account, savings account or ISA, see Figure 19.

Obviously much depends on a household's individual circumstances as to what is the right use for their retirement funds. However, as pension saving currently attracts significant tax benefits, it will be important to analyse whether people become more or less dependent on the state as a result of the reforms. It will also be important to assess the extent to which people understand the risks associated with the retirement options they are choosing between. For example, income drawdown products incur investment risk and longevity risk, which is not present for those investing in traditional annuity products.

[46] *Note, not all income drawdown products will be provided by insurers.*

Figure 17
Where will the money go at retirement?



- Purchase an annuity
- Purchase a drawdown investment
- Invest in shares or bonds with and investment manager
- Invest in shares or bonds yourself
- Invest in an investment bond with a pension provider
- Invest in the government's new Pensioner Bond
- Put money in a bank account, savings account or ISA
- Purchase a buy-to-let property
- Pay off mortgage
- Pay off debt
- Home improvement
- Treat yourself
- Other

Source: PwC: http://pwc.to/1n8He6E

Notes: Percentage of funds at point of retirement expected to be put towards different options. Survey commissioned by PwC and performed by Opinium in the first week of April 2014. It is based on 1,208 respondents, aged between 50 and 75, who are looking to take their pension in the near future.

6.a.iii Defined-benefit pensions and bulk annuities

As a result of accounting changes and increased longevity risk, sponsors of DB pension schemes have tended to look for new ways to manage their risks. This not only includes introducing strategies to manage investment risk (such as asset-liability matching), but also looking at strategies to directly manage their longevity risk (such as bulk annuity deals). This means that in addition to the retail annuity market, several insurance companies have also been involved in bulk annuity deals. These occur when DB pension schemes buy insurance to cover pensions in payment, so that, in return for a premium and transfer of assets, the insurer buys out their investment, inflation and longevity risk. Buy-out deals can cover all or part of a scheme's liabilities.[47]

Finding ways to allow markets to manage longevity risk is hard, but important

Longevity risk is extremely hard to manage and in particular to underwrite effectively, because it typically involves tying up capital, often for long periods, and the costs of getting it wrong can be significant. This makes it important to find ways to help financial markets manage these risks.

Bulk buy-outs are clearly one option, because they allow scheme owners to off-load all, or part of their risk. However, buy-outs can be costly and the risks associated with the scheme remain concentrated, typically with one provider. Therefore the buy-out market is essentially a way of shift the risk (for an appropriate price), rather than spreading it.

Therefore the market could also benefit from the development of markets in longevity hedging instruments that would allow longevity risks to be spread more widely. If effective, the market in longevity hedging instruments could operate in a similar way to catastrophe bonds, which have helped spread these risks outside the insurance sector, making it less vulnerable to the risks associated with large events.

Creating a market in longevity hedging instruments does pose challenges, because the perfect hedge for any individual annuity book or DB pension scheme will depend on the characteristics of that scheme. However, while the owner of the risk may want a perfect match, creating a scheme specific instrument based on the risk profile of that scheme can make it harder to find someone to taken on the risk, because the market in a scheme specific risk will be less liquid. Therefore, for example, a generic longevity index may improve liquidity, even though it worsens the match to the risks of a specific scheme, as the hedge will not be exact. This thought, for example, has led to the development of the Longevity Index created by the Life & Longevity Markets Association, which has created longevity indices for England and Wales, the Netherlands, Germany and the US.

However, the development of this market will depend in part on how it is treated by regulators. For example, even plain vanilla Asset Backed Securities tend to be penalised by regulators in terms of impact on capital. Therefore to allow longevity risks to be managed more effectively in future, it will be important to think about how any market in longevity risk is regulated.

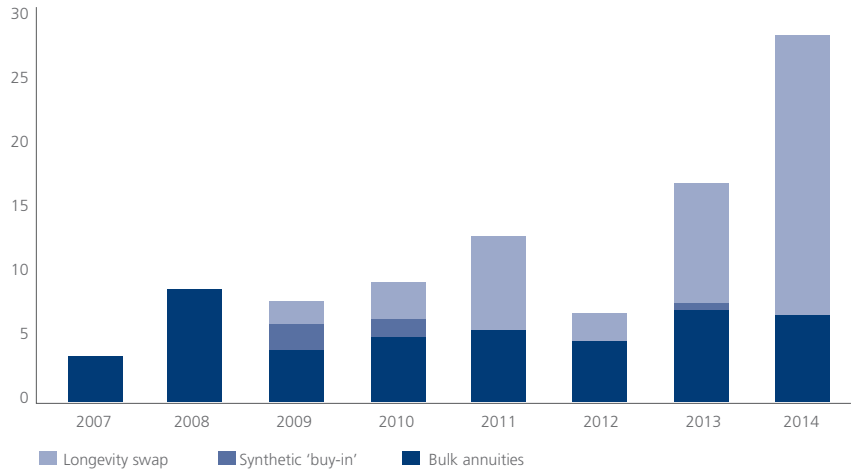
IEG Recommendation:

It is important to help financial markets develop ways to manage longevity risk. Bulk buy-outs are one option, but the sector might also benefit from the use of markets in longevity hedging instruments. This is potentially an issue that markets will be able to solve themselves, but it will be important to have the right regulatory regime in place, as excessive capital requirements would damage the ability of markets to innovate.

[47] *A buy-out deal means that the insurer provides an individual annuity contract for all the members of the scheme covered by the deal, which cannot be cancelled. A buy-in deal means the contract is between the insurer and the scheme, rather than between the insurer and the individual. Unlike buy-out deals, buy-in deals can be cancelled. A longevity swap is a derivatives contract that allows a scheme to offset the risk that members will live longer than expected.*

Although the amounts invested in bulk annuities each year are significant (worth on average £5.1 billion since 2007) this is still a relatively new market, with total deals worth less than £50 billion in 2013. The nature of the deals also mean that it is a very volatile market, constrained by scheme funding levels, annuity rates and the amount of longevity risk insurers are willing to take onto their balance sheet. As with retail annuities, the market is dominated by a few, large players. In 2013 as a whole, Towers Watson estimated that there were 186 bulk annuity deals in the UK, written by eight insurers and that in total these deals were worth more than £7.2 billion.[48] See Figure 18 for the evolution of the UK bulk annuities market (note that the figures for 2014 are part year figures).

Figure 18
Volumes of business by year



Source: Aley and Hayes (2014).
Notes; Data for 2014 is the year to August.

[48] *BenefitsPro "More players enter UK bulk annuities market under new pension system", Lisa Barron, May 2, 2014.*

6.a.iv **Pensions and asset allocations**

Pensions have an important role in allowing individuals to manage life in retirement. However, over and above the benefits to individuals, the sector as a whole plays an important role in providing funding for both firms and governments. Furthermore, the scale of the money involved, at almost £2,200 billion in 2012 (or around 150% of GDP), means that shifts in their investment strategies can have a significant impact. For example, Bank of England research shows that purchases of UK government debt by insurers between 2006 and 2010 reduced the two-year real yield on government debt by 30 basis points and the 20-year real yield by 75 basis points. The shift into government securities by DB pension funds started earlier, so in the case of UK pension funds, their increased purchases of UK government debt over the period 1990 to 2010 reduced the two-year real yield on government debt by 70 basis points and the 20-year real yield by 165 basis points.[49]

The importance of life insurers and pension funds within UK equity markets has declined in recent years, with the sector accounting for only 10.9% of investment in UK quoted companies in 2012. However, the asset holdings of annuity providers, DC pensions and funded DB pensions combined are more significant in other markets, accounting for just under half of the UK sterling corporate bond market (which HM Treasury estimated to be worth £335 billion); almost 20% of the market for UK government securities; and over 40% of the market for index-linked gilts.

However, the estimated investment profiles and the importance of the three products in different markets differ significantly.[50]

- For UK corporate bonds, investment by both annuity providers and funded DB schemes is estimated to be worth almost £65 billion each, giving both sectors just under a 20% share of the market, while investment by DC pension schemes in UK corporate bonds is estimated to be worth about half this.
- The bulk of the investment in UK government securities is made by DB pension schemes (at over £200 billion), compared to around £20 billion each by both annuity providers and DC pensions. However, only just over £60 billion (or 31% of the total investment in UK government securities

[49] *See the discussion in Haldane (2014).*

[50] *Analysis based on the data in Table 4.*

by DB schemes) is invested in non-index-linked UK government securities, while the bulk of investment by annuity providers and DC pension schemes is in this category. This reflects the fact that the majority of annuities are not index linked, while the majority of DB pension obligations are, making index-linked bonds a better match for liabilities for DB pension schemes.

- Just over half of the investment in property and infrastructure by the sector as a whole is accounted for by annuity providers. Although DB and DC schemes are estimated to invest a similar percentage in property and infrastructure, the weight of money in DB schemes means that DB schemes account for around 40% of the total.
- Finally, the amount of money invested in UK equities is broadly similar for both DB pension schemes and DC schemes, with the different investment weightings compensating for differences in total assets.[51] Annuity providers do not invest in this sector.

Overall, therefore, the decline in the importance of the retail annuity market is likely to have most impact on the UK corporate bond market and property and infrastructure investment by the sector.

6.b **Long-term care**

Not only is it hard for people to estimate their life expectancy, and therefore their pension needs, they also have to consider both the likelihood and length of time when health issues may mean they need additional help. Estimates suggest that a man aged 50 to 54 can expect to spend 6 years of their remaining life expectancy with a disability and that women aged 50 to 54 can expect to spend 8.9 years of their remaining life expectancy with a disability (where disability is defined using the difficulty people face doing various cognitive and physical tasks).[52] While not everyone will need long-term care, if they do need it, the costs can be significant, and the level of public awareness of these costs tends to be low, making an appropriate policy response even more challenging.

The cost of care is typically highest in the last three years of life

In general care needs and health costs rise in the final years of someone's life, regardless of at the age at which they die. Estimates suggest that 70% of the average care costs are incurred in the last three years of life.

However, one of the problems people have is that they do not know when those last years will be, making it hard for people to manage their finances.

[51] *Within the universe of funded DB schemes, funded public sector schemes (mainly the Local Government Pension Scheme, or LGPS) tend to have higher equity holdings than private sector schemes. This in part reflects the relative maturity of schemes, with a significant number of private sector schemes being closed either to new members, or new accruals. However, although holdings are higher, the equity allocation within the LGPS has also been falling, from 65% of assets in 2000 to 55% in 2010 (see Trends in defined benefit asset allocation: the changing shape of UK pension investment, NAPF, July 2013).*

[52] *Nazroo et al (2008).*

One question is therefore whether the financial services industry could potentially help by providing products to help people meet these costs, if the need occurs. However, although there has been some point-of-need long-term care insurance sold in the UK, the underwriting difficulties are significant. These difficulties are even greater for providing long-term care insurance at point-of-retirement for example, when underwriting needs to combine not only the need to estimate life expectancy in care and likely changes in the cost of care, but also both the likelihood and the age when care will be needed. Furthermore, except for point-of-need insurance, the existence of insurance itself may influence an individual's decision to seek care and that also needs to be factored in.

In the US, both state and federal governments have tried to reduce the impact of care costs on Medicaid by providing incentives for people to purchase long-term care insurance. For example, the Long-Term Care Partnership Programme is designed to protect assets up to a certain value, and once that value is exceeded individuals with insurance will be eligible for Medicaid. The aim is to encourage people to save more towards long-term care needs and to avoid the use of 'spend down' strategies to allow people to qualify for Medicaid. However, although the introduction of this programme increased the number of insurance applications, it failed to increase the amount of insurance purchased over and above the pre-existing market, with applications being declined as individuals were seen as too risky.[53] This highlights the difficulties associated with underwriting long-term care insurance.

In the UK the Government had promised to introduce a lifetime cap on care costs of £72,000 to cover the cost of care provided either in people's own home or in a care home, with charges over that level being met by the state.[54] The cap was intended to cover payment towards care costs only and does not, for example, cover the room and board costs associated with staying in a care home, although these will be capped at £12,000 per annum. Originally the intention had been to introduce this in April 2016, but concerns over funding have meant that the introduction of this policy has been postponed until 2020.

[53] *See the discussion in Bergquist et al (2015). The Long-Term Care Partnership Programme was initially developed in California, Connecticut, Indiana and New York, but has since been rolled out to most states.*

[54] *This promise was contained in the Care Act 2014.*

APPENDIX 1
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