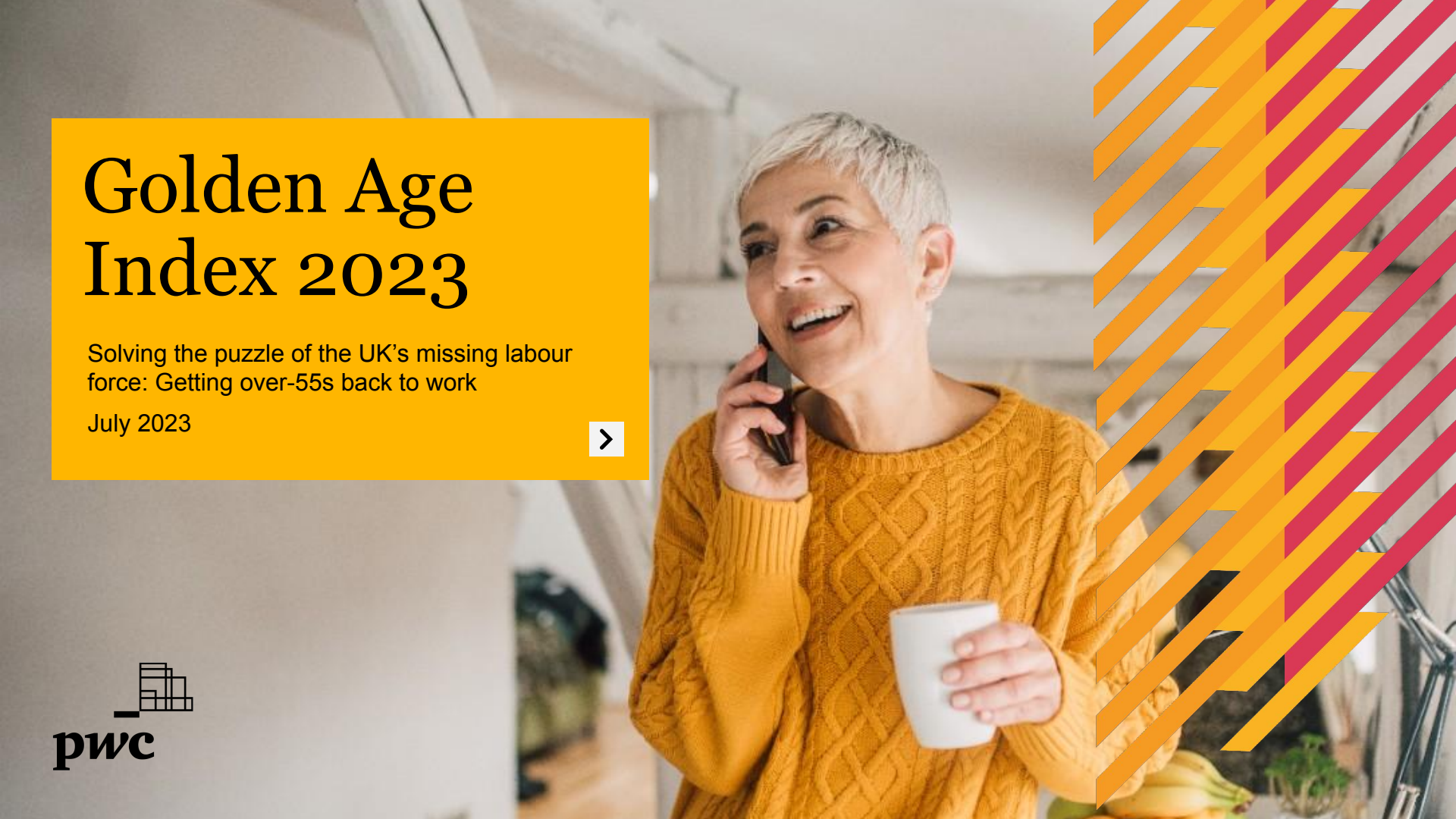
Golden Age Index 2023

Solving the puzzle of the UK's missing labour force: Getting over-55s back to work

July 2023



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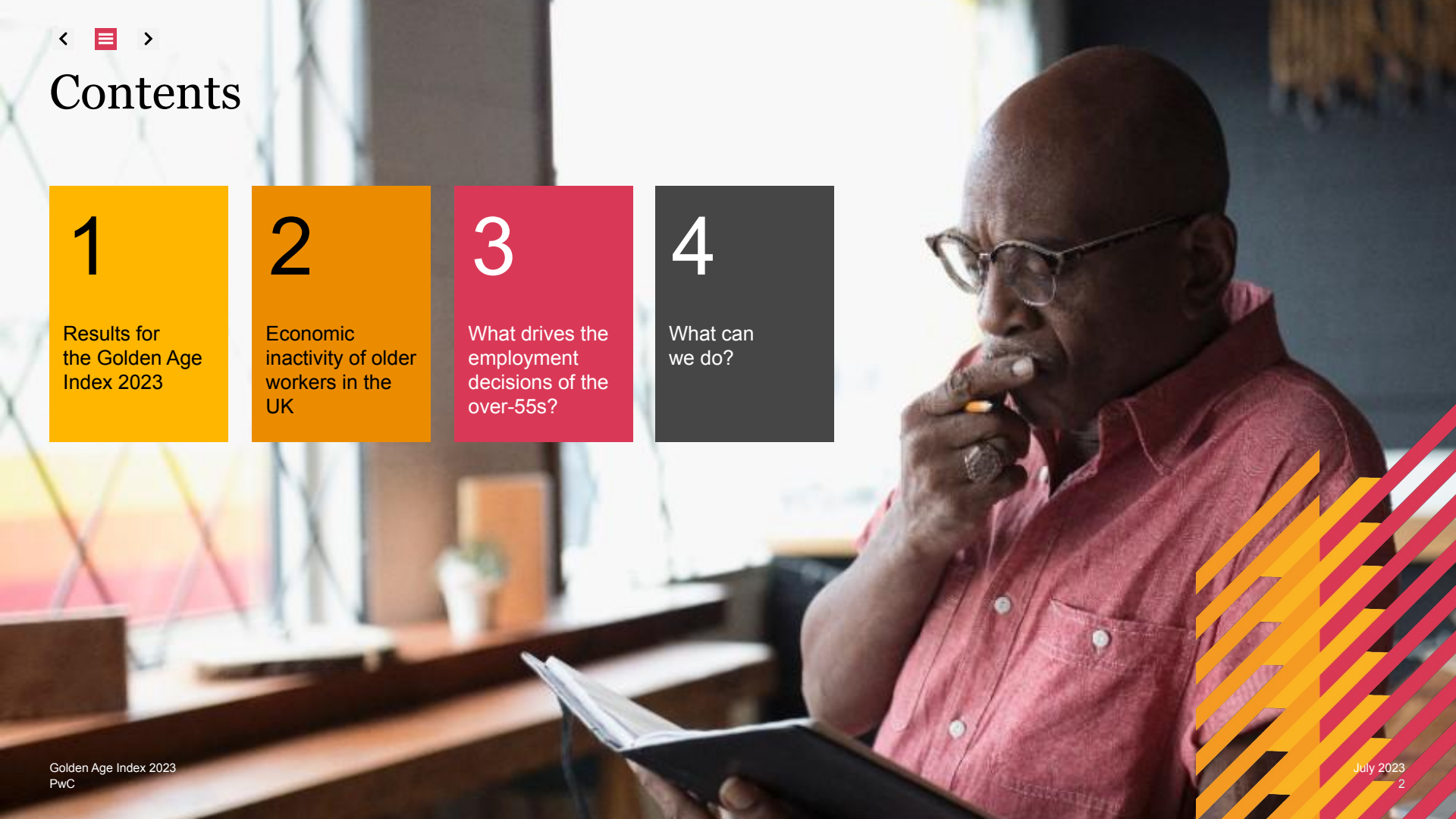


Executive summary

The UK ranks 21st on our latest PwC Golden Age Index and underperforms relative to the OECD average.

Since 2007, OECD economies have become consistently better at unleashing the potential of older workers. Hungary, the Netherlands and Portugal record the most significant improvement in our Index relative to 2016, while Austria, Mexico and Chile have fallen the most.

The UK ranks 21st across the OECD and underperforms the OECD average. The main weakness in the UK is the poor participation rate of older workers in the labour market, which lags behind other advanced economies.

UK economic inactivity remains stubbornly high post-pandemic, driven by the 50+ age group.

Since the pandemic, the number of older inactive workers has increased by 244,000 – greater than the population of the English city of Portsmouth. We do not see this in other age groups or G7 economies, except for Italy.

In the UK, three-quarters of the rise in post-pandemic inactivity is attributed to older workers, and employment of older workers is down to 2017 levels. But, regional variations exist. The South East has the highest rate of older workers, while the North East has the lowest.

With the vacancy rate remaining above the one million mark and earnings growing at rates above 6%, reintegrating older workers could help contribute to reducing consumer price inflation.

House prices, investment income, education, and treatment wait times all influence employment among 55-64 year olds.

Our analysis using 20+ years of data finds a statistical link between house prices, investment income earned by pensioners and NHS waiting times with the employment rate for the 55-64 age group. The link between house prices, investment income and employment rates of older workers can be explained by the wealth effect - as people feel more financially stable, they are more likely to choose leisure over work. Meanwhile, our analysis shows that historically a rise in the median number of weeks taken for the sick to receive treatment tends to reduce employability amongst the 55-64 age group.

Our national survey complements these findings and also highlights the importance of flexibility in working hours and working location for older workers making decisions about whether to remain in, or return to paid employment.

Japan has surged through the rankings to join New Zealand and Iceland in the Top 3 of PwC's Golden Age Index

1 New Zealand

2 Iceland

3 Japan

1

Results for the Golden Age Index 2023

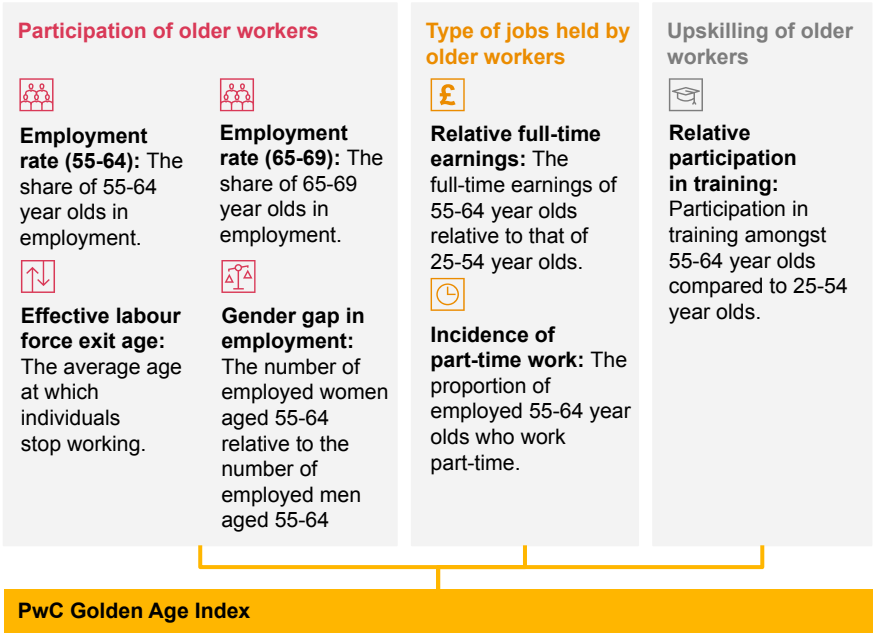
Tracking labour market outcomes for older workers across the OECD

What is the PwC Golden Age Index?

This report marks the latest release of our Golden Age Index (GAI), which measures how effectively countries are better including over-55s into the labour force. The Index is constructed using seven indicators across three themes, summarised in Figure 1. Our analysis uses consistent and normalised data across the Organisation for Economic Cooperation and Development (OECD) countries. The Index scores are calculated on a scale from 0 to 100, with the average OECD Index score set to 50 for the base year of 2003.

In this year's report, we present the rankings using the latest set of complete data from the OECD. Due to the limited data availability for later years, the majority of the data we use relates to the year 2021. Therefore, when we refer to the latest Golden Age Index results in this report, we are referring to results based on 2021 data.[1] We do however provide some analysis on how some of the recently released indicators have moved lately and provide commentary on what this could mean for the specific economies we track in our analysis. We provide more detail on the methodology used to construct the GAI in the Technical Appendix.

Figure 1: Themes and indicators used to generate the GAI



New Zealand is the best performer on the GAI closely followed by Iceland. The surprise top entry is Japan. The UK ranks 21st across the OECD

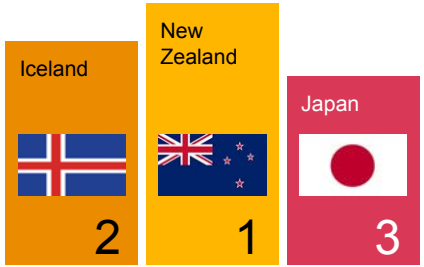
New Zealand and Iceland continue to lead, followed by Japan.

New Zealand takes the top position on this year's Golden Age Index, **followed by Iceland**. New Zealand and Iceland report the highest employment rates for older workers amongst the OECD – 77.9% of New Zealand's and 80.2% of Iceland's 55-64 year olds were employed as of 2021. While these two countries have consistently occupied the top two spots on the Index since 2013, **Japan is a surprise entrant in third place.**

Japan's rise in the rankings has been fast, jumping up from 6th place in 2018 to 3rd place in this year's Index. This is primarily driven by a rise in the employment rates of 55-64 year olds from 71.6% in 2016 to 77.1% in 2021. Japan also overtook Iceland on the employment rates of 65-69 year olds: one out of two people aged 65-69 in Japan were employed as of 2021.

Seen through the lens of demographics, the ascent of Japan on our Index makes sense. Japan has the highest median age in the world, and thus policymakers and businesses are changing their approach on how to deal with older workers.

Figure 2: Top 3 countries on the Golden Age Index 2023



Successful policy measures of the top performers include:

Increasing the retirement age

The Japanese government has raised retirement ages to retain their older labour force despite falling birth rates and labour shortages. This includes guidance to the private sector to allow older employees to work till the age of 70, and raising the retirement age of civil servants.[2] [3]

Supporting flexible working

Workers in Iceland experience one of the most flexible labour markets in the world. The government has also implemented policy measures aimed at helping older workers switch to jobs that are more suited to them as they age.[4]

Encouraging employers to hire and retain older workers

The Swedish government set up a 'Delegation for Senior Labour' in 2018 to promote inclusive work opportunities for older workers and protect older job seekers from age-based discrimination.[5] Sweden ranked 4th on our latest Index.

Upskilling older workers

The 'Older Workers Employment Action Plan' introduced by the New Zealand Government is aimed at helping job seekers over 50 use and develop their skills to meet today's job market requirements.[6]

Most of the top performers on the year's Index have been in the top ten since 2007

New Zealand and Iceland have consistently occupied the top two spots on the Index since 2013, coming in 1st and 2nd place respectively on the 2021 Index.

Hungary, Netherlands and Portugal showed the largest improvements in rank between 2016 and 2021.

Chile's rank fell drastically from 10th place in 2016 to 25th place in 2021. The employment rate amongst both 55-64 year olds and 65-69 year olds declined over this period by 5 and 8 percentage points respectively.

Rank						Country	Raw Golden Age Index score					
2007	2013	2014	2015	2016	2021		2007	2013	2014	2015	2016	2021
3	2	2	2	2	1	New Zealand	71.8	81.3	82.9	84.7	85.3	87.9
1	1	1	1	1	2	Iceland	93.7	93.5	97.9	99.5	91.3	86.6
7	10	10	8	6	3	Japan	70.6	71.9	71.1	76.2	78.6	85.0
4	5	4	4	5	4	Sweden	71.5	77.0	78.6	80.1	81.2	84.2
8	8	6	6	8	5	Norway	70.0	74.3	76.7	77.9	77.3	80.8
11	3	3	3	3	6	Israel	66.0	78.0	78.7	80.6	82.3	80.5
6	9	9	7	7	7	Korea	71.0	72.6	72.8	77.3	77.7	77.1
5	6	7	9	9	8	US	71.0	75.0	75.2	75.0	75.9	76.2
2	4	5	5	4	9	Estonia	73.9	77.3	76.9	78.8	81.8	76.1
15	14	12	13	11	10	Denmark	59.6	64.1	65.0	68.0	70.5	75.7
10	18	20	18	19	11	Portugal	66.9	61.2	55.4	62.7	62.8	74.4
14	11	11	11	17	12	Switzerland	63.0	67.7	68.2	71.2	64.2	73.0
21	19	18	15	13	13	Germany	47.6	60.5	62.7	66.2	68.0	72.2
9	15	14	12	12	14	Latvia	67.7	64.0	64.4	68.5	69.6	71.9
27	22	22	23	23	15	Netherlands	42.5	52.4	53.8	56.4	58.3	70.0
23	21	21	22	20	16	Czech Republic	45.8	52.9	54.5	59.3	62.5	69.8
16	17	15	14	14	17	Finland	58.5	63.3	64.3	66.4	66.8	68.4
19	25	24	21	22	18	Ireland	54.7	49.5	52.3	60.3	61.1	68.1
18	16	17	17	15	19	Australia	55.0	63.6	63.1	64.7	66.3	68.1
17	13	16	16	16	20	Canada	58.2	65.0	64.0	65.6	66.1	66.8
20	**20**	**19**	**20**	**21**	**21**	**UK**	**51.1**	**57.9**	**58.5**	**61.4**	**62.1**	**64.3**
31	28	28	27	32	22	Hungary	36.1	44.3	46.9	51.1	48.4	62.6
33	27	29	29	27	23	Slovak Republic	35.4	45.4	46.6	48.6	51.9	61.0
29	29	27	28	28	24	Italy	36.6	44.3	46.9	49.5	51.5	60.3
12	7	8	10	10	25	Chile	66.0	74.3	74.6	72.1	74.5	59.9
22	26	26	26	25	26	Spain	46.5	49.3	49.9	52.5	54.3	59.5
28	34	34	33	33	27	Slovenia	37.2	38.3	41.8	44.5	48.2	59.4
25	23	23	25	26	28	France	44.9	51.2	52.5	53.3	53.9	59.3
13	12	13	19	18	29	Mexico	65.7	65.4	64.7	62.5	63.2	58.1
26	24	25	24	24	30	Austria	43.3	49.9	51.3	55.0	56.3	58.0
30	30	30	31	30	31	Belgium	36.5	44.2	45.3	47.7	49.6	57.0
24	31	33	32	31	32	Greece	45.1	43.0	41.9	46.4	48.9	56.5
35	32	31	30	29	33	Poland	32.2	42.6	44.6	48.0	50.1	55.4
32	33	32	34	35	34	Luxembourg	35.4	39.7	43.1	41.1	33.6	53.9
34	35	35	35	34	35	Turkey	34.0	37.0	37.7	36.5	38.4	41.7
						OECD Average	**55.0**	**59.8**	**60.7**	**63.1**	**63.8**	**68.1**

Japan rose amongst the ranks, jumping up from 6th to 3rd place between 2016 and 2021. This was driven by an increase in the employment rate amongst 55-64 year olds from 71.6% to 77.1% over this period.

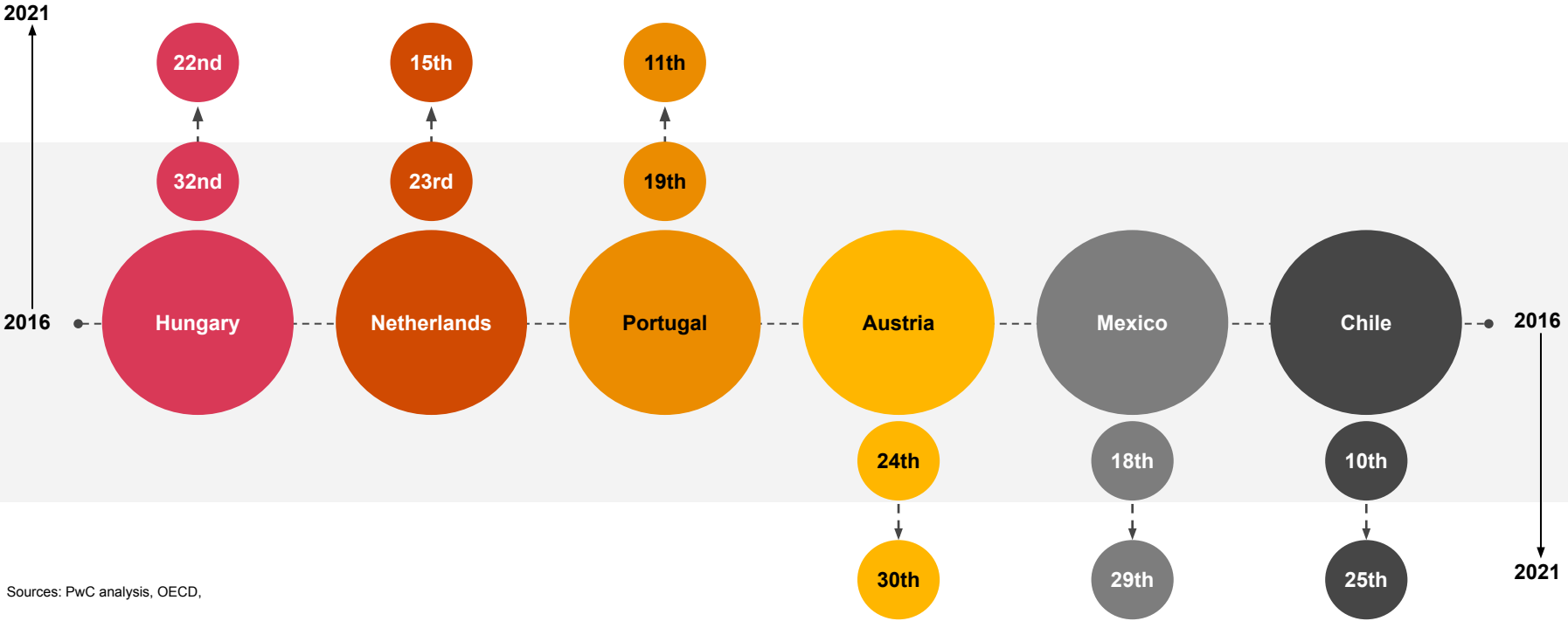
The UK's rank remained at 21st place despite an improvement in its Index score between 2016 and 2021.

Mexico reported the next largest drop in ranks after Chile, dropping 11 places between 2016 and 2021 as the nation recorded falling employment rates amongst its oldest workers.

Sources: PwC analysis, OECD, Note: The Index score measures how effective countries are at integrating their over-55s into the labour force. It is made up of seven indicators which capture participation, type of jobs held and skill levels of older workers. Scores range from 0 to 100 with the average OECD value in the base year set to 50.

Hungary, Netherlands and Portugal show the largest rise in rankings between the 2016 and 2021 Index updates, while Chile, Mexico and Austria show the largest fall

Figure 3: Largest movers on the Index between 2016 and 2021



Sources: PwC analysis, OECD,

Businesses and governments across the OECD are consistently becoming better at the inclusion of older workers into the labour force

The OECD, in aggregate, has become consistently better at the inclusion of older workers into the labour force.

The OECD's average Index score improved from **55.0 in 2007 to 68.0 in 2021**. Over this time, the OECD improved on five of the seven indicators covered in our Index, with the exception of relative full-time earnings and the effective labour force exit age.

The main driver for the higher Index scores across the OECD economies is the significant **improvement in employment rates** of older workers. The employment rates amongst 55-64 year-olds and 65-69 year-olds increased by 7.8 percentage points and 6.3 percentage points respectively over this period. This means an increasing proportion of the OECD population between the ages of 55 and 69 are employed and have been effectively absorbed into the labour market.

Businesses across the OECD continue to adapt to attract talent in a competitive market whilst also being mindful of the different working preferences across different age groups, including older workers. It also suggests higher retention rates of older workers across OECD economies.

The range in Index scores across countries has also narrowed in the latest update of the Index

While the average score across OECD economies analysed in our Index has improved over time, the gap between the best and worst performing countries' score has narrowed (see Figure 5). In our latest update of the Index, the range in Index scores across countries is the smallest it has ever been since the first iteration of the Index in 2007.

However, this is a result of both the worst-performing countries scoring considerably better in the Index and a slight drop in the Index score of the previously best-performing country, Iceland. Nonetheless, the improvement in scores of the less well-performing countries suggests that the policymakers of these countries are more open to adopt best practises from other countries to ensure that talent across all age groups is effectively managed.

Figure 4: OECD average Index score over time (Base year 2003 with Index score: 50)

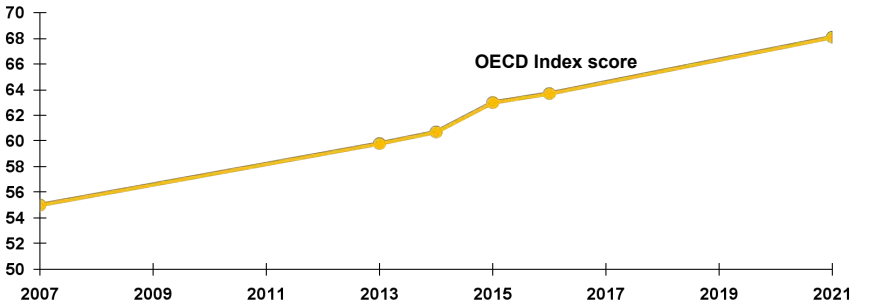
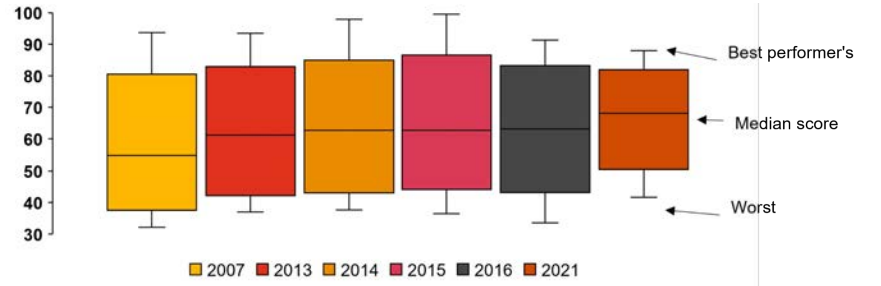


Figure 5: Range of Index scores over the years



Sources: PwC analysis, OECD, Note: The Index score measures each country's composite performance on the seven indicators discussed on slide 5. A higher score indicates more effective integration of 55-64 year olds into the labour force. The years on the x-axis refer to the year to which the data refers to. For example the 2021 data point refers to the Index results presented in this years' report. The dots represent the occasions where we released the GAI. We linearly interpolate the results for any of the years where we didn't release the GAI.

The UK ranks 21st out of 35 OECD countries on our Index, lagging behind most of its neighbouring countries

The UK remains in 21st place in our latest rankings.

Despite a marginal improvement in its absolute score from 62.1 to 64.3, the UK's ranking on the Golden Age Index remains unchanged at 21st place compared to 2016. This is despite the UK reporting absolute improvements across five out of the seven indicators we include in the Index over the same period.

The lack of movement in the UK's rank on the Golden Age Index reflects the progress other countries have made to better include older workers into their labour force relative to the UK. For example, in the UK, the employment rate of the 55-64 age group increased by around 1.4 percentage points since we last updated the Index, compared to an increased of 3.3 percentage points in Germany. If older individuals in the UK continue to see relatively deteriorating labour market outcomes, we will likely see a further fall in future rankings.

Figure 6: OECD and the UK – average Index score over time (Base year 2003 with Index score: 50)

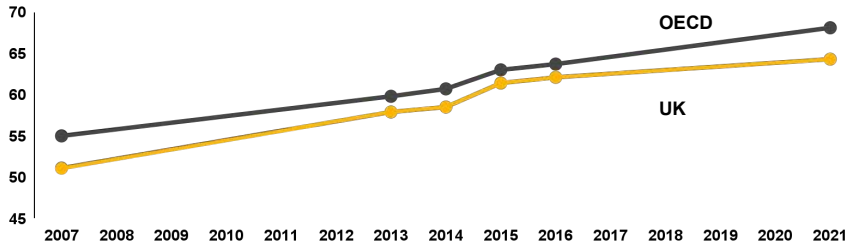
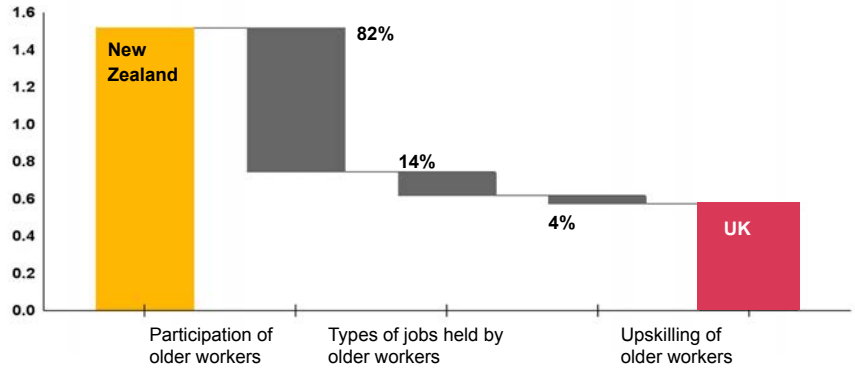


Figure 7: Deviation in UK's and New Zealand's normalised Index scores in 2021 by indicator theme



What is it that drives UK underperformance?

The main area of weakness in the UK's performance relative to New Zealand, which is the best performer in the OECD, is participation of older employees in the labour force. New Zealand recorded an employment rate of 77.9% amongst their 55-64 year olds in 2021 – more than 13 percentage points greater the UK in the same year.

The types of jobs held by older workers in the UK (i.e. full-time vs. part-time jobs and relative pay compared to younger workers) and the extent of upskilling are areas in which the UK lags but not as much compared to the overall theme of participation.

Sources: PwC analysis, OECD. Note: The Index score measures each country's composite performance on the seven indicators discussed on slide 5. A higher score indicates more effective integration of 55-64 year olds into the labour force. When comparing the UK and New Zealand's scores, we use normalised Index scores because this allows us to decompose the difference by indicator themes. The final Index score represents rescaled values of the weighted average of each indicator's normalised score. More information is available in the Technical Appendix.

2

Economic inactivity of older workers in the UK

Since the beginning of the pandemic, nearly a quarter of a million people aged between 50 and 64 have become economically inactive

Across the UK, economic inactivity levels remain high compared to pre-pandemic levels.

The latest labour market data released by the ONS shows that despite a decrease in inactivity rates, one out of five people aged between 16 and 64 in the UK are still neither employed nor looking for a job.[7] The number of economically inactive people in this age group shot up by more than 400,000 between the three months to February 2023 and the same three month period before February 2020.

> “Around 244,000 workers aged between 50-64 have left the labour market since the pandemic hit.”

Workers above the age of 50 account for a large proportion of the economic inactivity levels.

Figure 8 shows that while overall economic inactivity is falling, inactivity amongst 50 to 64 year olds remains stickily high compared to pre-pandemic levels. Inactivity in this age group accounts for more than 40% of total inactivity levels amongst people aged 16 to 64 in the UK. Around 244,000 workers aged between 50-64 have left the labour market since the pandemic hit - greater than the population of the cities the size of Portsmouth in the UK.[8] This comes as the UK economy grapples with low unemployment rates, a historically high (but gradually decreasing) number of vacancies as well as fierce competition for labour. There are a combination of cyclical, structural and sectoral reasons which could explain some of these trends which we’ve outlined in the boxes on this and the next slide.

Demographic trends

As the UK’s population ages, a considerable segment of the population born in the mid-60s (which is when the UK’s birth rate peaked) are in their late 50s. This is typically the age group around which economic inactivity rates pick up. Our projections in our April edition of the UK Economic Outlook shows that the rise in inactivity in the 50-64 year-olds group has been significantly higher than what population change trends would suggest. Other factors such as health challenges, house price changes, investment income may also drive economic inactivity in this age group.[10]

Boom in financial markets

During the post-pandemic recovery, financial markets enjoyed a mini boom period. For example, the FTSE 100 rose by more than 14% in 2021, marking the largest increase since 2016. The S&P 500 nearly doubled by the end of 2021 from its low in March 2020. This could mean that workers with private pensions felt increasingly comfortable about the underlying value of their pension fund assets and decided to bring forward their decision to retire.

Since the beginning of the pandemic, nearly a quarter of a million people aged between 50 and 64 have become economically inactive (continued)

Higher house prices

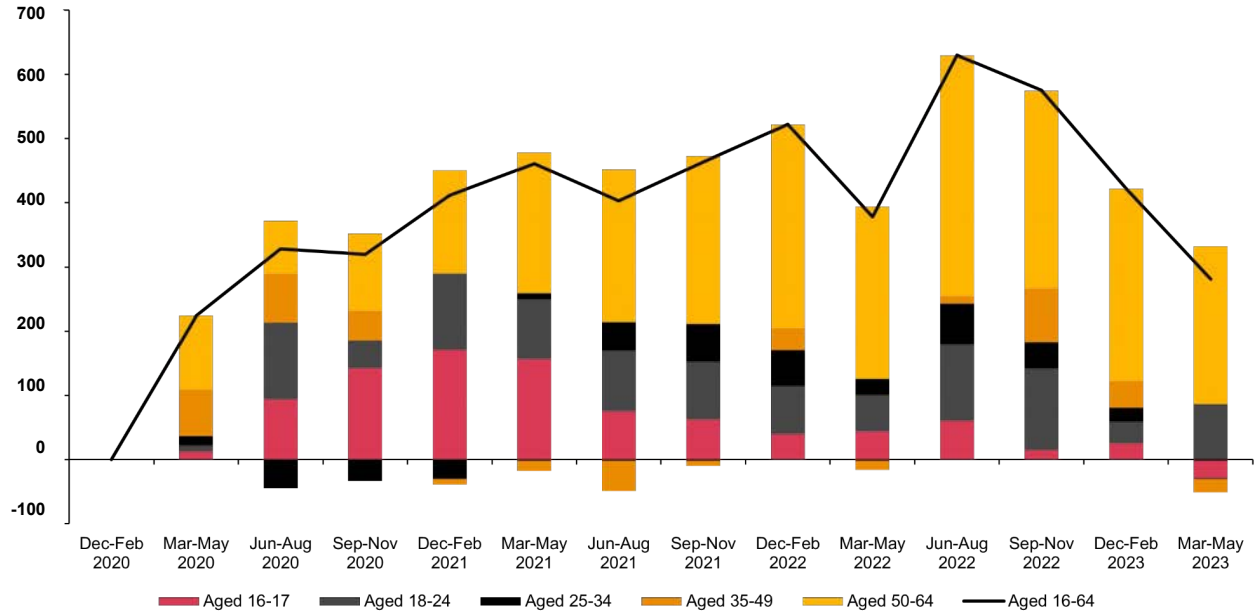
House prices in the UK have increased by more than 20% on average since the pandemic hit. The US housing market shows a similar story with prices up by more than 35% since Q1 2020. The positive wealth effects associated with higher prices could have encouraged workers to exit the labour force potentially retiring earlier.

Other factors

Certain industries have been worse hit than others. In both the US and the UK, the health sector has seen a large exodus of workers over the past year, partly driven by older workers choosing to retire early.[11] [12]

Economic inactivity by age — this trend is predominantly driven by older workers.

Figure 8: Cumulative increase in economic inactivity levels since the three month period to Feb 2020, by age, 000s



Sources: PwC analysis, ONS

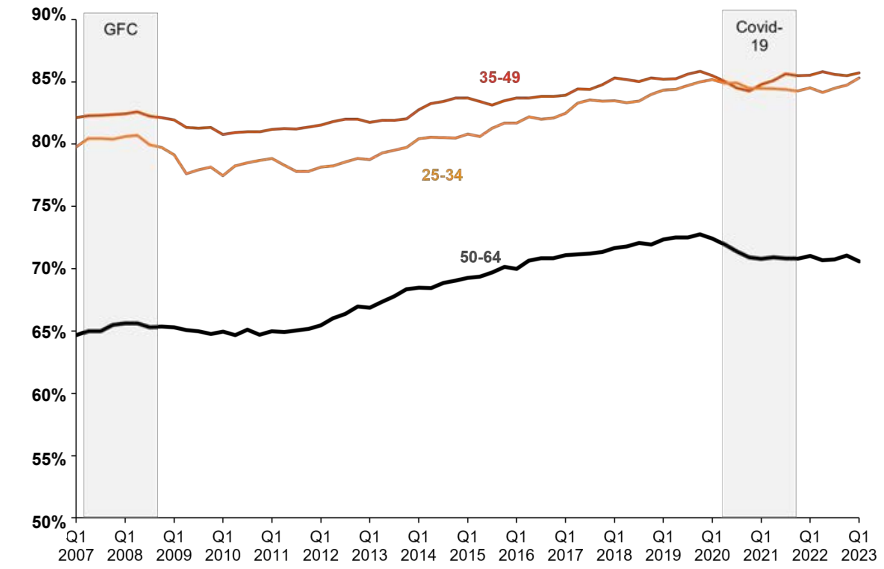
The employment rates of workers above the age of 50 in the UK has gone down to 2017 levels

An alternative way to look at the extent of integration of older workers into the labour market is to focus on employment rates.

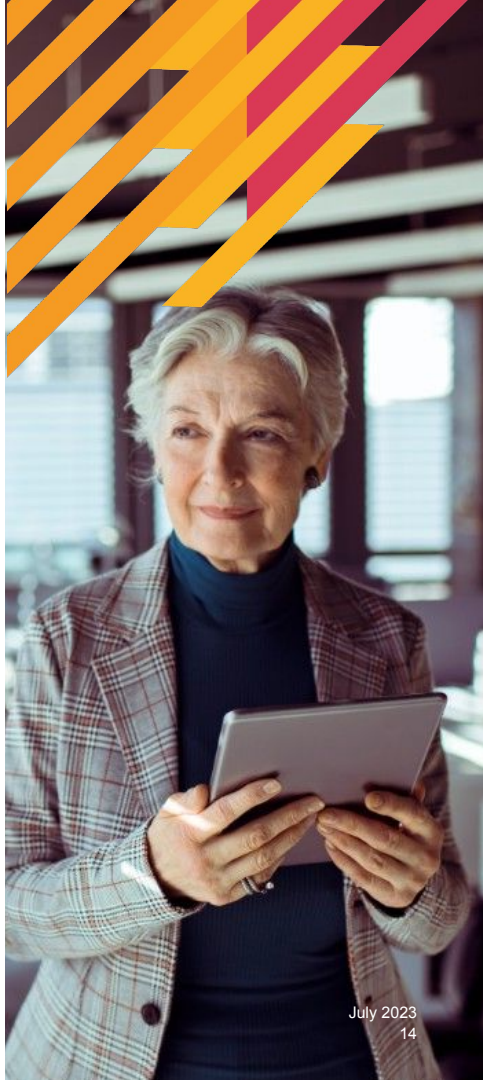
Historically, the employment rate amongst older workers is lower relative to younger workers.

Over the past 17 years (2005-2022), the employment rates of 50-64[13] year-olds in the UK have remained on average 14 percentage points lower compared to that of the 25-49 age group. In 2022, the 25-34 and 35-49 age groups boasted employment rates as high as 85% and 86% respectively, compared to 71% for 50-64 year-olds.[14] This trend is recorded in most advanced economies where inactivity rates typically increase as workers approach retirement age.

Figure 9: Employment rate, by age



Sources: PwC analysis, ONS



The employment rates of workers above the age of 50 in the UK has gone down to 2017 levels (continued)

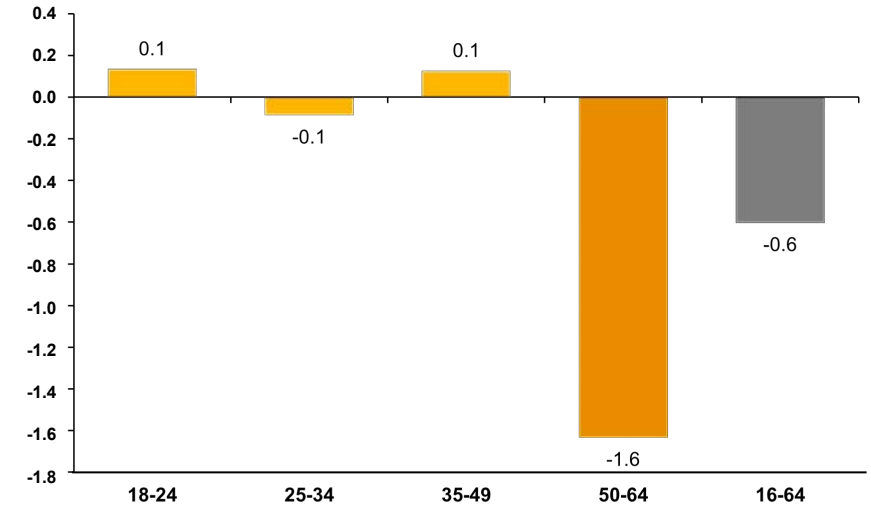
Employment rates decreased across all ages during the pandemic…

During the pandemic UK-wide employment rates dropped by around 1.7 percentage points. This was not surprising as lower economic output translates to less jobs and thus a lower employment rate.

…however employment rates amongst 50-64 year-olds remain relatively depressed.

During 2022, the employment rate for all age groups in the UK groups virtually returned to pre-pandemic levels with the exception of the 50-64 age group. Figure 10 shows a 1.6 percentage point gap persisted for 50-64 age group relative to pre-pandemic levels. The pandemic appears to have put a stop and reversed the consistent gains seen in the employment rates of workers between the ages of 50-64 pre-pandemic.

Figure 10: Change in employment rate between 2019 and 2022, by age, % points



Sources: PwC analysis, ONS

> ‘A 1.6 percentage point gap persisted for 50-64 year olds, meaning there has been close to **no rebound in employment** for older workers since the pandemic hit.’

There is large regional disparity across the UK in employment rates, likely due to differing qualification levels and industry mix

The South East boasts the highest employment rate of 55-64 year-olds.

There is a considerable degree of regional variation in the employment rates of older workers across the UK. Specifically, in 2022, the employment rate amongst those aged 55-64 years ranged from around 57% in the North East of England, to 68% in the South East.

This regional divide in employment rates is significant when considering the number of workers. For example, if the North East of England recorded the same employment rate for the 55-64 age group as the South East, an additional 40,000 jobs would be created.

Our analysis shows that if all regions of the UK absorbed older workers into the labour force to a similar extent as the South East, it would translate to an additional 320,000 jobs. To set the context, this is equivalent to around one third of UK vacancies.

Skills, social factors, career choices affect affect chances of working when we get older.

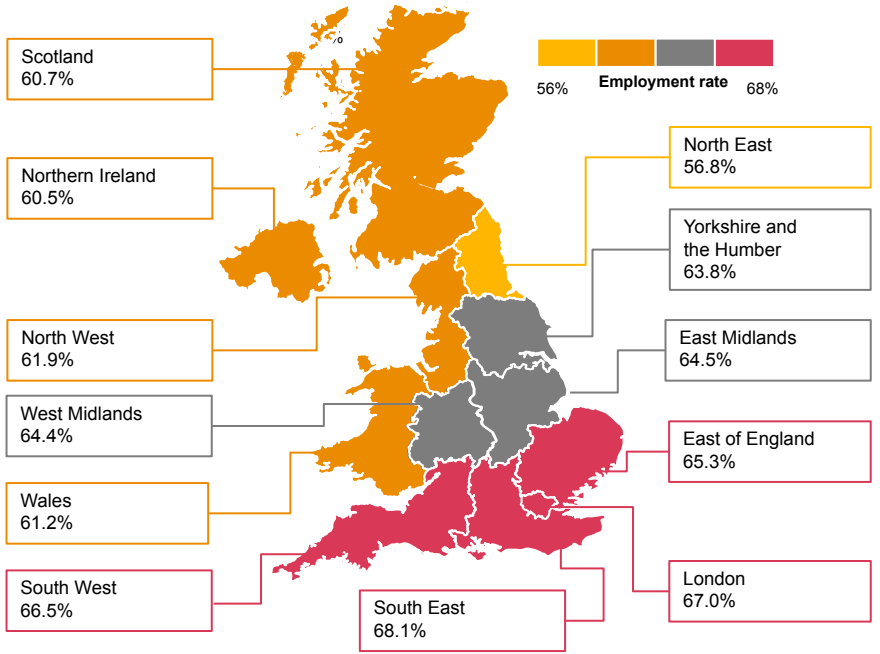
The large regional disparities in employment outcomes of older workers across the UK is driven by a variety of factors, including varying educational outcomes.

On balance, we find a correlation between regions with higher employment rates and those with higher education degrees or diplomas for the 55-64 age group. In the South East, more than half of older workers hold a higher education degree, compared to around 43% in the North East.

Older workers in the South East are also more likely to work in sectors such as financial services, real estate and professional services. Meanwhile, the education, health and manufacturing sectors account for larger shares of these workers in the North East than the South East.

Jobs in the professional services sector typically allow more flexibility in terms of working locations and tend to be less physically demanding. On the other hand, jobs in sectors such as manufacturing are likely to be more physically demanding. Healthcare jobs are also more likely to require physical presence (and are therefore less flexible). The industrial mix of the regions could therefore also explain the differing activity rates across the UK.

Figure 11: Employment rate by region, 55-64 year olds, 2022



Sources: PwC analysis, NOMIS

In contrast to most of the G7, the UK's post-pandemic inactivity level for older workers remains persistently above pre-pandemic levels

Economic inactivity levels amongst 55-64 year olds rose during the pandemic for most G7 countries (UK, US, France, Germany, Italy, Japan, Canada). However, as shown in Figure 12, inactivity levels in this age group have since recovered to pre-pandemic levels in virtually all of these economies. Moreover, in Germany, France, Canada and Japan, at the end of 2022, inactivity levels amongst 55-64 year olds were even lower than what was observed at the start of the pandemic.

In the UK, a large proportion of the UK's older workers continue to remain inactive. Inactivity levels amongst 55-64 year olds in the UK have remained stubbornly above pre-pandemic levels since 2020. This comes at a time when the UK economy is grappling with high inflation, stagnating economic growth and fierce competition for skilled labour.

Policy developments in the UK

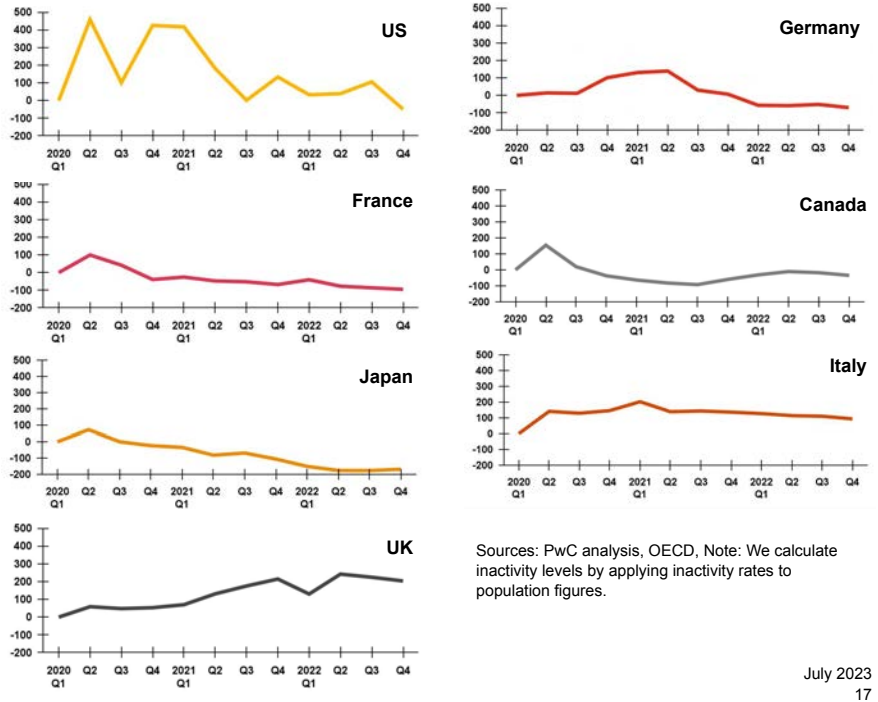
The latest measures announced in the March 2023 Spring Budget reflect the government's commitment to boost participation rates across most age groups, including older workers. For example, in March, the government announced the abolition of the lifetime allowance on pensions.

However, the Office for Budget Responsibility (OBR) expects that the measures intended for older workers are expect to boost employment by around 15,000 workers by 2027.[16] On this basis, economic inactivity amongst the 50-64 age range is expected to return to pre-pandemic levels by 2027.[17]

These projections suggest that there are a variety of reasons that explain the persistently higher economic inactivity rate for older workers in the UK. We address some of this issues in the next section of our report.

The UK economy is unique in its persistently high inactivity amongst older workers post the pandemic

Figure 12: Cumulative inactivity levels amongst 55-64 year olds since Q1 2020 ('000s)



Sources: PwC analysis, OECD, Note: We calculate inactivity levels by applying inactivity rates to population figures.

Our partial analysis of recently released data shows that the UK is likely to slip even further in the Golden Age Index ranking

As mentioned previously, we use the latest complete set of data released by the OECD to generate the Golden Age Index. The latest complete data is for 2021.

To better understand how the Golden Age Index could track in the future, we have used newly released data for 2022 on two of the seven indicators – the employment rate and gender gap in employment for the 55-64 age group. These indicators drive around half the results of the Golden Age Index (see our Technical Appendix for more details). While we cannot present the updated rankings for the Golden Age Index, we are able to use more recent data to form our best guess of what the UK's position could be in future.

> "Labour market participation for workers aged above 55 in the UK lags behind most other advanced economies and could deteriorate further."

The UK's future position on the Golden Age Index is likely to worsen.

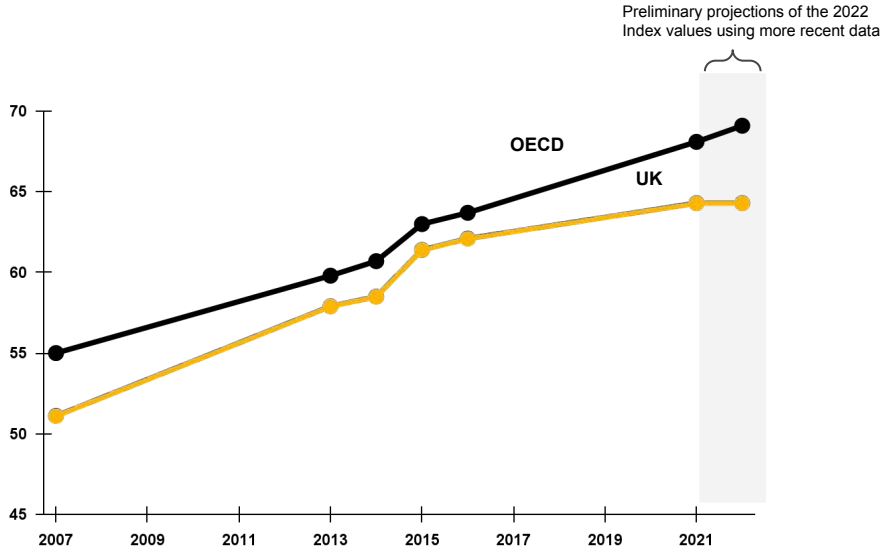
Our analysis shows that **the UK's future position on the Index is likely to worsen relative to the OECD.** This is predominantly driven by the fact that the employment rate of 55-64 year olds improved across most OECD economies between 2021 and 2022, but fell slightly in the UK.

We must understand what is driving poor employment rates of older workers in the UK.

The UK's performance on our Golden Age Index reveals a complex reality experienced by older workers. Specifically, it indicates that labour market participation for older workers lag behind most other advanced economies and that it could be at risk of worsening even further.

In the next section we look at what it is that drives employment rates of older workers in the UK to get a better understanding of the drivers of and potential solutions to integrating older workers better in the UK labour force.

Figure 13: Forecast Index score for the UK and the OECD



Sources: PwC analysis, OECD

3

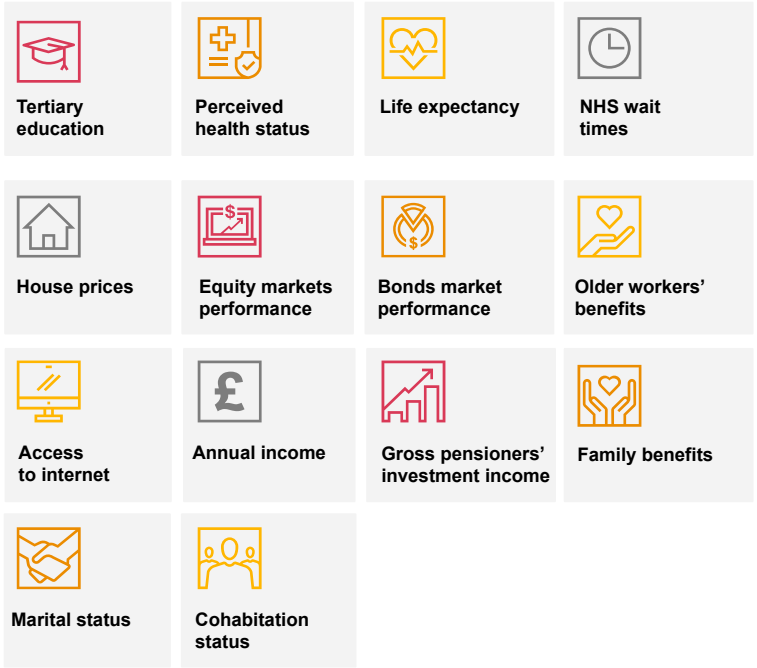
What drives employment decisions for the over 55s?

Identifying the key drivers of employment for the 55-64 age group in the UK

Identifying the drivers of employment rates for older workers can help policymakers and businesses create an ecosystem that attracts and retains talent. This is even more important in the current economic climate, where bringing our oldest and arguably most experienced workers back into jobs can help ease labour shortages. In this section of our report, we use economic modelling using historical data to better understand the key drivers of the employment rate of older workers in the UK. We complement this with a national survey across the UK.

We use a time series model to estimate the key drivers for the annual employment rate[19] of workers aged 55-64 in the UK. Our dataset spans the past 22 years (2000-2022) and leverages data on a variety of indicators that capture skills, health outcomes, income, wealth, government expenditure and family structure. We investigate a range of variables to include in our initial stage of our economic modelling and subsequently shortlist these drivers based on their significance. We also include additional control variables to account for one-off events including Global Financial Crisis and COVID-19. Our Technical Appendix provides a more detailed overview of the approach we use to design the economic model.

Figure 14: Explanatory variables we tested in our model



NHS wait times

In order to measure NHS wait times, we use monthly wait times data from NHS England for 'incomplete RTT (Referral to Treatment) pathways'. This is also called waiting list times and refers to the waiting times for patients waiting to start treatment, as at the end of each month. The data is reported in terms of median number of weeks. This is the measure of waiting times used by the NHS Constitution in their operational waiting time standards. We understand that there are various measures of NHS waiting times and we do not assume our variable to be a representative measure of all types of wait times. However, we hope it will be a useful data series to identify whether there is any statistically significant relationship between NHS wait times in general and employment rates of older workers.

Furthermore, we decide to use NHS wait times in our model instead of the number of people on waiting lists because the waiting list statistics risk could suffer from duplicates (i.e. people waiting for the treatment of more than one condition) hence risking overestimating waiting list numbers.

Access to healthcare, house prices and return on investments are some of the key drivers for employment amongst 55-64 age group in the UK

In our finalised economic model, we used the following variables based on statistical significance, the 'goodness-of-fit' of the model (measured using the adjusted R-squared) and economic intuition. We provide further details on our results in the Technical Appendix.

Key drivers of employment rates for older workers

Pensioners' annual gross investment income

Gross pensioner's investment incomes have a statistically significant negative effect on employment rates amongst 55-64 year olds.

A 10% increase in annual gross investment incomes for pensioners is associated with a 0.20 percentage point decrease in the employment rate of 55-64 year-olds.

As older individuals earn additional sources of income from other sources of income, such as investments, they may choose to retire earlier or cut back their work hours since they are less financially dependent on their salaries.

House prices

House prices also have a statistically significant negative effect on the employment rates of 55-64 year olds. This is important because three out of four people between 55 and 64 years in the UK own their own house.

We find that a 10% increase in house prices is associated with a 0.13 percentage point fall in the employment rate for 55-64 year olds. This means that as house prices appreciate, homeowners are likely to feel more financially secure because of the equity build up and thus less likely to continue to work. In the UK, average house prices increased by more than 20% between 2019 and 2022, potentially incentivising older homeowners to retire early and leave the labour force.

NHS wait times

More than one in three people over 50 who quit their job during the pandemic due to poor health were on an NHS waiting list.[21] Our analysis finds that median NHS wait times for patients waiting for either outpatient or inpatient treatment have a statistically significant negative impact on the employment rate of 55-64 year olds.[22]

Specifically we find that for each additional week in the median waiting times for patients leads, on average, to a 0.25 percentage point fall in the employment rate of 55-64 year-olds, all things remaining equal.

This means that delays to be treated could potentially reduce or eliminate the ability of older members of society to gain employment.

Other

The share of 55-64 year olds with a tertiary education has a positive association with higher employment rates but it is not statistically significant. While skills could be an important driver, attainment of a university degree may not accurately capture the full impact associated with having specific skills in the workplace.

For example, fast-paced developments in technology means digital skills are an increasingly valuable asset in the labour forces. This might not be fully captured with whether a person has a degree or not.

We explore these themes further in our survey.

Long-term sickness remains one of the main reasons why post-pandemic economic inactivity remains relatively high

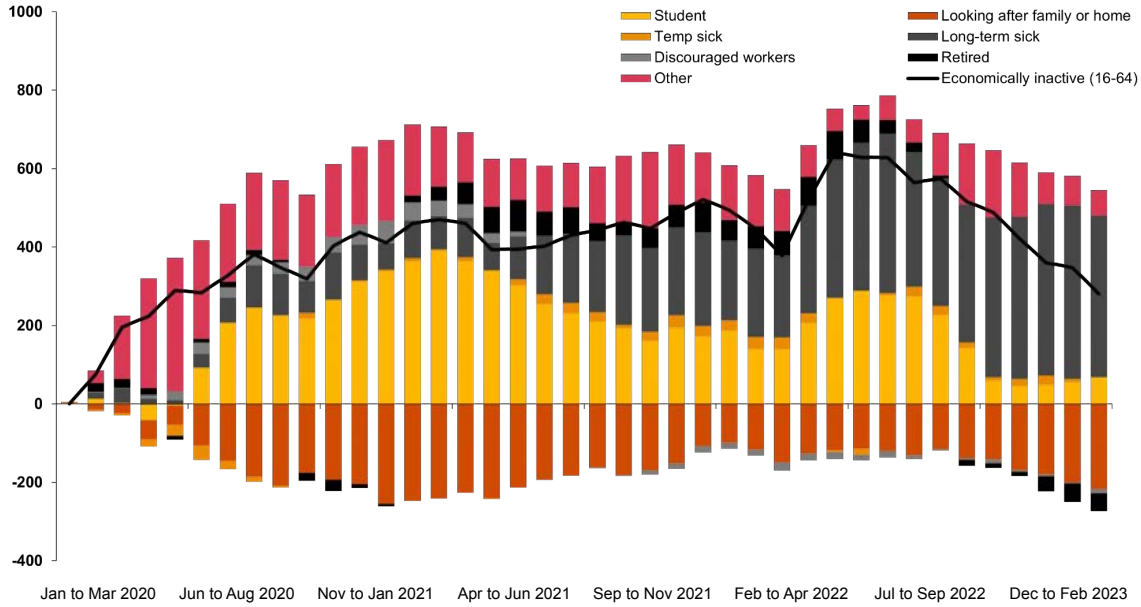
Despite falling economic inactivity levels overall, the number of people aged 16 to 64 in the UK who are inactive because of long-term sickness remains high. ONS analysis late last year found that one in two people who were economically inactive due to long-term sickness in 2022 were between the ages of 50 and 64.

Therefore, inactivity is likely to continue to remain above pre-pandemic levels if long-term sickness levels do not start to drop. The significant level of long-term sickness amongst all age groups reveals both an increase in physical and mental illness issues since the pandemic.

Our econometric analysis also found that there is statistically significant link between the employment rate of older workers in the UK and NHS waiting times. Meanwhile, median NHS wait times rose by 76% between 2019 to 2022, with **the average individual now having to wait for more than 13 weeks to start treatment**.[25]

Reversing the trend in long-term sickness amongst the population could be one of the key policy levers to bring workers, and particularly older workers, back into jobs.

Figure 15: Cumulative change in economic inactivity in the UK (16-64 year-olds) by reason, 000s



Sources: PwC analysis, ONS

On the other hand, falling house prices over the short term may incentivise early retirees to rejoin the labour force

Alongside health-related challenges, another key driver often cited for inactivity amongst older workers is early retirement. The decision to retire early could be driven by wealth effects. Three out of four people between the ages of 55 and 64 in the UK own their own house. As such, the steady increase in house prices between 2019 and 2022 would have particularly impacted sentiments of financial security amongst these older individuals. Our econometric analysis also found that there is statistically significant negative link between the employment rate of older workers in the UK and average house prices - as house prices go up, all else remaining equal, employment rates for 55 to 64 year olds go down.

Trends in house prices have taken a turn since the end of last year. Latest ONS data shows that average house prices fell by 3% between November 2022 and March 2023.

The Office for Budget Responsibility (OBR) expect house prices to continue to fall till the end of 2024, before they start to show signs of recovery. This will be largely driven by high interest rate environments, with the potential for future interest rate hikes by the Bank of England before the end of the year, coupled with tight real incomes.

As such, early retirees who enjoyed the wealth effects during a period of house price appreciation over the past few years may begin to rethink their financial security and return to the labour market.

We complement our econometric analysis with a national survey to gain deeper understanding on what could influence older workers' appetite to enter the labour force

Limits to our economic modelling:
While our economic analysis sheds light on some of the key drivers of employment amongst older workers in the UK, it is limited by the themes that statistical data captures. For instance, our model does not capture the impact of flexibility on employment, which is likely to be a key driver. Our Cost of Living Tracker survey found that nearly one in four respondents aged 55-64 claimed flexible working hours to be the most effective factor to encourage people to rejoin the labour force. The latest wave of the Over-50s lifestyle survey, conducted in August 2022 by the Office for National statistics, also found flexible working hours to be one of the most frequently cited reasons to return to work amongst older workers who left their job during the pandemic and were considering returning to work. However, due to the lack of a dataset which measures flexibility across jobs in the UK over time we have not been able to include this in our economic modelling.

Additionally, as discussed earlier, there is unlikely to be a 'one-size-fits-all' policy that will boost employment of older workers across the UK. Labour market experiences **vary significantly by region, industry sector and educational qualification.**

We complement our economic model with a survey.
To overcome the limits of our economic modeling, we complement and validate our findings from our economic modelling using findings from a nationally-representative survey we ran. The survey was designed to better understand the drivers of employment amongst older workers. This allows us to account for flexibility, regionality, and to uncover previously unexpected answers. As the survey is run on an individual level, it helps uncover how drivers such as skills gaps, NHS wait times and flexibility influence the employment outcomes of older workers. The survey also cuts across all age groups, allowing us to compare responses of older workers with other age groups in the country.

Our survey…

- Has 1000+ respondents who are nationally representative
- Covers various age groups, gender, regions, industries, etc.
- Captures current sentiments – the survey was conducted in April 2023

Survey results: Three in five 55-64 year-olds want to participate, continue or start working in the next year

1 Employment plans

65% of respondents aged 55-64 want to either stay in paid employment or return to paid employment over the next 12 months. This compares with more than 80% of respondents aged 25-54.

Respondents who own their own house outright are less likely to stay in paid work over the next 12 months (44%) compared to those who had mortgages (79%) across all age groups.

Figure 16: Proportion of respondents who plan to stay in the labour force in the next year, by age

65% of survey respondents between the ages of 55-64 expect to participating in the labour force over the next 12 months. This compares with more than 80% respondents for younger age groups.

Sources: PwC analysis

2 Desired job characteristics

Most of the respondents aged 55-64 cited **pay, increased living costs, and flexibility in working hours and working location** as the most important factors keeping them in paid employment.

The **65+ age group had the largest share of respondents (54%) citing flexibility in working hours** as a factor most likely to keep them in paid employment.

Figure 17: Proportion of 55-64 aged respondents stating that the following factors are important to keep them in work

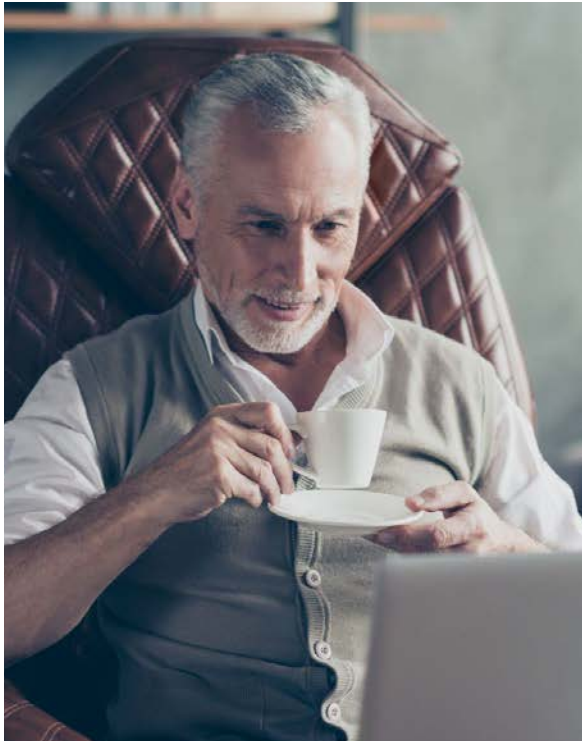
70%
Pay

35%
Flexibility in working hours

45%
Increased living costs

32%
Flexibility in working location

Sources: PwC analysis

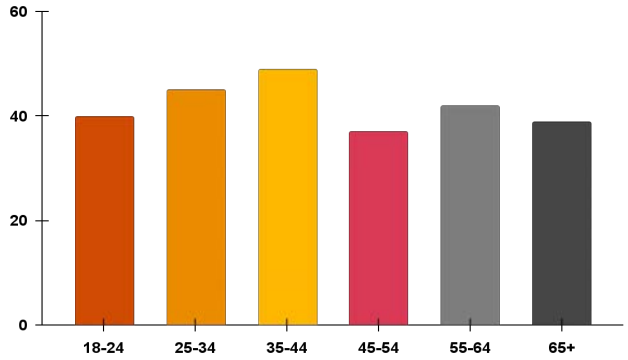


Survey results: Long-term sickness is restricting people's ability to work. Many older workers do not believe that the Budget's measures will get them back to work

3 Health

Long-term health conditions prevent two out of five people from working full-time or pursuing their preferred careers across all age groups. The age cohort that is suffering the most from long-term sickness is the 35-44 age group followed by the 55-64 and 65+ age groups. This means health-related concerns and issues are holding back both the current and future generation of golden age workers.

Figure 18: Impact of long-term health conditions on labour force participation, by age



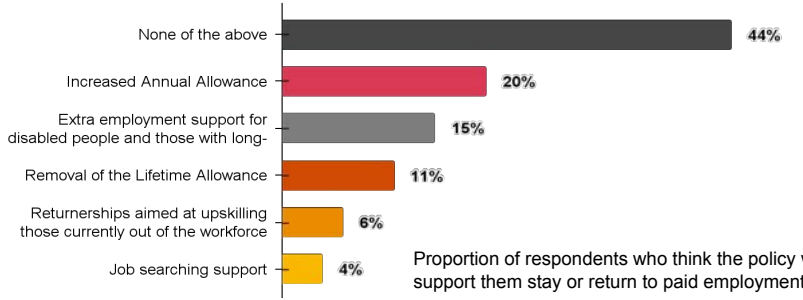
Number of people whose labour force participation is limited because of long-term health conditions, per 100 persons.

Sources: PwC analysis

4 Government and businesses' role

Around 40% of 55-64 year olds respondents state that the 2023 Spring Budget has not affected their decision to keep them in work. Around one in five of the 55-64 year olds have said that the increased annual pension allowance could help keep them into work.

Figure 19: Sentiments on the effectiveness of 2023 Spring Budget policies to keep older workers in work



Sources: PwC analysis

When asked about facing discrimination from employers, **37% of 55-64 year olds state that they have felt discriminated** against based on their age when applying for jobs.

According to our survey, health conditions, age discrimination and skills mismatch are key barriers to work for 55-64 year olds in the UK

People aged 55-64 described the greatest barriers they faced when looking for a job as…

I'm a carer for my elderly mother who lives with me. I have multiple health issues which I struggle with daily."

– a woman looking after family from the East of England.

If I left my current job, my age and lack of computer skills would be against me."

– a woman working in public services from the South East.

My age in what is an increasingly youth centric culture."

– a man working in public services from Yorkshire & The Humber.

After I retire in September I don't foresee applying for new jobs."

– a man working in transportation and logistics from West Midlands.

I am not well and wouldn't be able to work in a stressful environment. I would need part time and to be able to work from home."

– a 55-64 year old woman from London.

I am waiting for a lung transplant."

– a man from Wales suffering from long-term sickness.

4

What can we do?

What are the implications to businesses and policymakers from the insights generated in the Golden Age Index?

Health

Health conditions and access to healthcare emerged as key drivers of employment amongst 55-64 year olds from both our econometric modelling and survey results. I**mproving access to treatment is fundamental to allow more older workers to participate in the labour force.** Improving the state of the healthcare system may also reduce caring responsibilities for older workers, freeing up more time for them to engage in other activities, including paid work. This may even benefit the healthcare sector itself by increasing its labour supply.

Skills

In a fast-paced world of technological change, our survey revealed that some older workers do not feel confident that they have the right digital skills to contribute in today's jobs. Digital upskilling is also crucial to let older workers benefit from increased flexibility in work location. **Therefore, both governments and businesses should ensure that our older workers get training and career guidance to gain additional skills.**

Luxembourg, for example, has established a **Digital Skills Bridge Programme** intended to building a toolbox to facilitate and upskilling and labour force mobility. Generation Singapore, a global nonprofit organisation, has been retraining older workers for a few years now. Businesses can also contribute to this by running **targeted skills campaigns for older workers** by providing clear skills requirements for different roles and subsequently provide training and career guidance to gain those skills.

Flexibility

Our survey found that flexibility in terms of working hours and working location is important to older workers. Long-term health conditions amongst this age group also means that flexibility is key to help them to work in a way that suits their personal well-being needs. **Businesses should capitalise on the progress made to flexible working during the pandemic so that older workers are able to effectively participate in the labour market despite mobility and/or health constraints.**

Diversity

Finally, even **if our older workers are well-prepared to take on jobs of today and of the future, we will not see any real change in their employment outcomes** unless employers create opportunities for these workers. Our survey revealed the realities of age-based discrimination. Another survey of managers working across both the public and private sector found that only 42% of managers are willing to hire people aged between 50 and 64.[1] These biases must change for older workers to re-enter the labour force and contribute effectively.

Demographic change means that the median workers in the UK and other advanced economies are becoming older. Businesses and governments have a responsibility to harness the power of older workers using tools at their disposal. **These tools include access to healthcare, supporting older workers to reskill and have access to the right opportunities.** While we have not further explored the regional or sectoral implications of our econometric modelling and survey results, this cannot be ignored. The variation in employment rates across different groups of the population means that the solution to getting a 60 year-old banker back into work may not work for a 60 year-old builder living in another part of the country. Understanding what drives employment amongst older workers across the UK as a whole is a step in the right direction, but certainly not the final one.

Contacts and services

Our UK economics team is part of Strategy&, PwC's strategy consulting practice. Strategy& is a global team of practical strategists committed to helping you seize essential advantages. Our economics practice offers a wide range of services, covering competition and regulation issues, litigation support, public policy and project appraisals, financial economics, behavioural economics and macroeconomic advisory services.

Specifically, we provide a range of macroeconomic consulting services for clients, including:

- Revenue and cost forecasting
- Scenario design and analysis (including stress testing and IFRS 9 support).
- Risk horizon scanning.
- Macro strategy analyses and devise growth plans for countries and regions.
- Economic impact analyses, including Computable General Equilibrium modelling.

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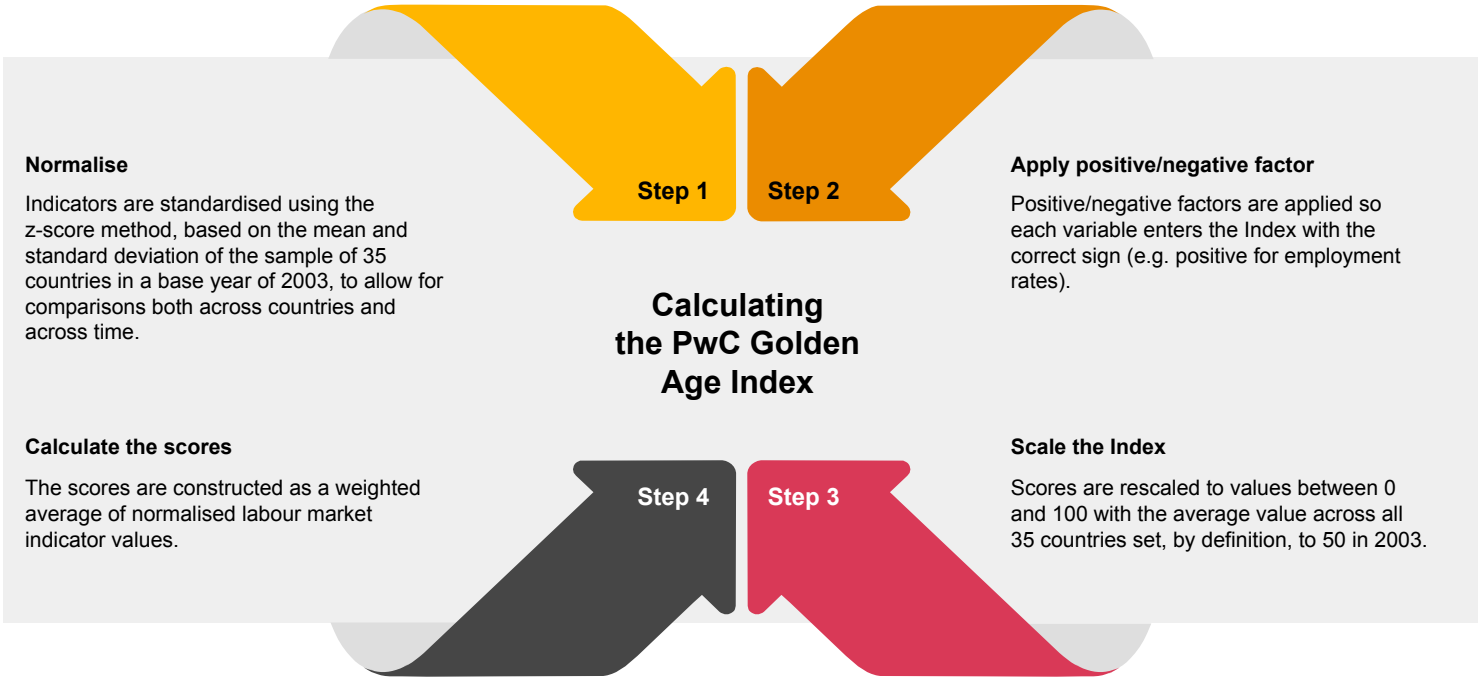
Technical Appendix

A

Index methodology

Index methodology: Construction of the Index

We used a standard method to construct this Index, similar to the one used in the PwC Women in Work, Youth Employment and ESCAPE indices, and by many other researchers constructing such indices.



Index methodology: Variables included in the Index

Indicator	Weight	Factor	Rationale
Employment rate, 55-64 (% of the age group)	40%	1	The proportion of 55-64 year old workers in employment is the most important measure in our Index and so has the highest weight of 40%.
Employment rate, 65-69 (% of the age group)	20%	1	The proportion of 65-69 year old workers has half the weighting of that of 55-64 year old workers assuming the 65-69 age group is roughly half as large in terms of population.
Gender gap in employment, 55-64 (ratio women/men)[35]	10%	1	Gender equality in employment is included here as lower employment rates among older women tend to be a particular feature of many OECD countries.
Incidence of part-time work, 55-64 (% of total employment)	10%	- 1	Part-time employment does not carry the full benefits of full-time employment (e.g. with respect to job security) which explains why we penalise for the purposes of the Index.
Full-time earnings, 55-64 relative to 25-54 (ratio)	10%	1	Earnings equality would represent equal pay across age groups and could also be an indicator of the relative labour productivity of older workers. But it has a lower weight in the Index as higher relative earnings could also price some older workers out of jobs in certain cases.
Average effective labour force exit age (years)	5%	1	This measures the length of time a worker stays in the labour force before they become economically inactive. However, there is some overlap with other variables such as employment rates so we do not give it too high a weight in the Index.
Participation in training of 55-64 age group (ratio, relative to employed persons aged 25-54)	5%	1	This is an indication of how far older workers keep learning beyond age 55, which will be important in keeping them employable and renewing their skills. But data are lacking for several countries, so we do not give this too high a weight in the Index.

Index methodology: Data sources

Indicator	Source
Employment rate, 55-64 (% of the age group)	Employment rate by age group, OECD (2021)
Employment rate, 65-69 (% of the age group)	Employment/population ratio, OECD (2021)
Gender gap in employment, 55-64 (ratio women/men)[36]	Older Worker Scoreboard, OECD (2021) Variable: Gender gap in employment
Incidence of part-time work, 55-64 (% of total employment)	Share of employed in part-time employment, by sex and age group, OECD (2021)
Full-time earnings, 55-64 relative to 25-54 (ratio)	Older Worker Scoreboard, OECD (2021) Variable: Full-time earnings, 55-64 relative to 25-54 (ratio)
Average effective labour force exit age (years)	Older Worker Scoreboard, OECD (2021) Variable: Effective labour force exit age (years)
Participation in training of 55-64 age group (ratio, relative to employed persons aged 25-54)	Older Worker Scoreboard, OECD (2021) Variable: Participation in training, relative to employed persons aged 25-54 (ratio)

B

Econometric analysis methodology

Econometric analysis methodology: Our approach

Our approach
We use a time series model to estimate the key drivers of the annual employment rate of older workers (aged 55-64) in the UK. Our dataset spans across the past 22 years (2000-2022) and leverages annual data on a variety of indicators that capture skills, health outcomes, income and wealth, government expenditure and family structure. We use academic literature in this area to inform our specification of the drivers that could explain the employment rate of 55-64 year olds in the UK. The explanatory variables we investigate are listed in the table opposite. The regression results are presented on the next page.

	Explanatory variable	Data source
Skills	**Tertiary education**	Educational attainment and labour-force status, OECD
	Internet usage	ICT Access and Usage by Households and Individuals, OECD
Health outcomes	**Perceived health status**	Health status, OECD
	Life expectancy	Life expectancy, OECD
	NHS Referral to Treatment Wait Times for patients waiting to start treatment	Referral to Treatment (RTT) Waiting Times, NHS England and NHS Improvement
Income and wealth	**Annual income**	Average annual wages, OECD
	Gross pensioners' investment income	Pensioners' Income Series: Financial Year 2021 to 2022, ONS
	House prices	Housing market: simple average house prices, ONS
	Equity markets performance	FTSE 350, Refinitiv Eikon
	Fixed income investment performance	UK 10-yr Government Bond Index Value, Refinitic Eikon
Government expenditure	**Public expenditure on older individuals benefits**	Social Expenditure - Aggregated data, OECD
	Public expenditure on family benefits	Social Expenditure - Aggregated data, OECD
Family structure	**Marital status**	Marital status by age group and sex for all persons, ONS
	Cohabitation status	Living arrangements by age group and sex for all persons, ONS

Econometric analysis methodology: Regression results

- In our final model specification, we **shortlisted explanatory variables based on their statistical significance, the 'goodness-of-fit' of the model and economic intuition**. The final list of explanatory variables used in the model are shown in the table across, along with the estimated coefficients and standard error.
- The employment rate is also likely driven by structural factors - to account for this, **we include a lagged term for the employment rate** in our overall specification to account for the persistence in the employment rate over time.
- We also include **dummy variables for the Global Financial Crisis and COVID-19** to allow for the impacts of extraordinary events during our time horizon.
- Our model has an **adjusted R-squared of 97.7%**, thus reassuring us of a very high 'goodness-of-fit' of the model.
- We ran a series of diagnostic tests on our final specification to check the robustness of our results:
  - Durbin-Watson test for autocorrelation of residuals: Test statistic = 1.6 - falls within the acceptable range of 1.5 to 2.5 meaning there is no autocorrelation detected.
  - Breusch-Pagan test for heteroskedasticity: p-value = 0.31 - we do not reject the null hypothesis that the variance is homoskedastic.
  - Ramsey RESET test for omitted variable bias: p-value = 0.88 - we do not reject the null hypothesis of no omitted variables.
- A key limitation of our model is the small number of observations. We use annual data from 2000-2022. This adds uncertainty to our parameter estimation. However, we are constrained by data availability and hence use this model as a first step to understanding the key drivers of employment for 55-64 year olds.

Table of coefficients

Dependent variable: Employment rate, 55-64 year old	Coefficient (standard error)
Lagged employment rate, 55-64 age group	1.12 (0.12)***
Tertiary education	0.11 (0.09)
Median NHS wait times	-0.25 (0.10)**
Logarithm of pensioners' annual investment income	-4.93 (1.98)**
Logarithm of house prices	-3.17 (1.76)*
COVID dummy	-0.34 (0.71)
GFC dummy	2.27 (0.97)

Source: PwC analysis.

*significant at 10% level **significant at 5% level ***significant at 1% level.

Endnotes

[1] The data used in this report is based on the most recent data available at the time of our analysis. We have included sources with dates in the footnotes throughout the report, but caveat that the exact numbers might have changed with the release of more recent statistics.

[2] Japan Times, 2023. Japan to raise retirement age of civil servants April 1. Available here.

[3] HRM Asia, 2021. Japan approves law raising retirement age to 70. Available here.

[4] European Journal of Workplace Innovation, 2021. High and rising senior employment in the Nordic countries.

[5] Ibid.

[6] Beehive.Govt.NZ, 2022. New Government plan helps support older workers. Available here.

[7] Office for National Statistics, June 2023. **Employment, unemployment and economic inactivity by age**. Available here,

[8] Ibid. Note: We refer to 50-64 year olds here instead of 55-64 year olds because employment rates data published by the ONS at granular age groups does not include a 55-64 age bracket.

[9] House of Commons, March 2023. Spring Budget 2023. Available here.

[10] PwC, April 2023. **UK Economic Outlook**. Available here.

[11] Forbes, 2022. **Amid Healthcare's Great Resignation, Burned Out Workers Are Pursuing Flexibility And Passion**. Available here.

[12] Sky News, 2023. **NHS crisis: Why are so many staff leaving the health services?** Available here.

[13] We refer to 50-64 year olds here instead of 55-64 year olds because employment rates data published by the ONS at granular age groups does not include a 55-64 age bracket.

[14] Office for National Statistics, April 2023. **Employment, unemployment and economic inactivity by age**. Available here

[15] Office for National Statistics, April 2023. **Employment, unemployment and economic inactivity by age**. Available here,
[16] Office for Budget Responsibility, March 2023. Economic and fiscal outlook. Available here.

[17] House of Commons, March 2023. Spring Budget 2023. Available here.

[18] The remaining 5 indicators were held constant at their 2021 values.

[19] Individuals in the 55-64 age cohort can be classified as inactive (neither employed nor seeking employment), employed or unemployed. Since both the unemployment rate and immigration levels are low, an increase in the employment rate will likely be driven by people moving out of inactivity and into the labour market.

[20] We use data on the median Referral to Treatment (RTT) wait times (weeks) for patients waiting to start treatment at the end of the reporting period. This is defined as the median wait times for 'Incomplete RTT pathways' and is from NHS England and NHS Improvement's monthly RTT data collection. Available here.

[21] Ipsos, 2023. **NHS waiting lists – the other reason over 50s are withdrawing from the workforce**. Available here.

[22] We use data on the median Referral to Treatment (RTT) wait times (weeks) for patients waiting to start treatment at the end of the reporting period. This is defined as the median wait times for 'Incomplete RTT pathways' and is from NHS England and NHS Improvement's monthly RTT data collection. Available here.

[23] Office for National Statistics, November 2022. **Half a million more people are out of the labour force because of long-term sickness**. Available here,

[34] Ibid.

[25] We use data on the median Referral to Treatment (RTT) wait times (weeks) for patients waiting to start treatment at the end of the reporting period. This is defined as the median wait times for 'Incomplete RTT pathways' and is from NHS England and NHS Improvement's monthly RTT data collection. Available here.

[26] Office for National Statistics, November 2022. Half a million more people are out of the labour force because of long-term sickness. Available here.

[28] Ibid.

[29] Ibid.

[3-] We use data on the median Referral to Treatment (RTT) wait times (weeks) for patients waiting to start treatment at the end of the reporting period. This is defined as the median wait times for 'Incomplete RTT pathways' and is from NHS England and NHS Improvement's monthly RTT data collection. Available here.

[31] Ibid.

[32] We use data on the median Referral to Treatment (RTT) wait times (weeks) for patients waiting to start treatment at the end of the reporting period. This is defined as the median wait times for 'Incomplete RTT pathways' and is from NHS England and NHS Improvement's monthly RTT data collection. Available here.

[33] CityAm, 2023. Hunt can plead for older workers to go back to work, but businesses will need to hire them. Available here.

[34] OBR, 2023. Economic and fiscal outlook March 2023. Available here.

[35] In previous datasets from the OECD, this indicator was defined as the ratio of the difference between number of employed men and women aged 55-64 relative to the number of employed men aged 55-64. In the 2021 release of the dataset, the figures are reported as a percentage gap. We have assumed that this continues to measure the gap in employment relative to number men employed and converted percentage figures to ratios for the sake of consistency across years.

[36] In previous datasets from the OECD, this indicator was defined as the ratio of the difference between number of employed men and women aged 55-64 relative to the number of employed men aged 55-64. In the 2021 release of the dataset, the figures are reported as a percentage gap. We have assumed that this continues to measure the gap in employment relative to number men employed and converted percentage figures to ratios for the sake of consistency across years.

Thank you

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