Office for National Statistics

Article

Health, demographic and labour market influences on economic inactivity, UK: 2019 to 2022

Estimates of the links between work-limiting ill health, demographic and labour market changes, and recent rises in economic inactivity, using Annual Population Survey data. Experimental Statistics.

Contact:
Donald Houston, Jane Evans and Vahé Nafilyan
health.data@ons.gov.uk
+44 1633 455046

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1 . Main points

- Between 2019 and 2022, the economic inactivity rate among the population aged 16 to 64 years rose by just under half (0.45) a percentage point, from 21.23% to 21.68% (these figures are based on the Annual Population Survey, which smooths quarterly trends and therefore differs from headline labour market data).
- The percentage of people who report a long-lasting health condition that limits either the kind or amount of work they can do rose from 16.4% to 18.1% over the same period.
- A rise in the prevalence of work-limiting health conditions was the largest contributing factor to the rise in the economic inactivity rate over the period 2019 to 2022, as found by our decomposition analysis.
- The rise in work-limiting health conditions would have raised economic inactivity by an estimated 0.63 percentage points (138% of the actual rise) if the probability of being economically inactive by age and health status had remained at 2019 values, with the health category "other problems or disabilities" accounting for the majority of this effect.
- Changes in age structure are estimated to have contributed 0.29 percentage points (63% of the actual rise) to the rise in economic inactivity.
- Structural and behavioural changes in the labour market (for example, rising cost of living and plentiful job vacancies) are estimated to have brought inactivity down by 0.46 percentage points (negative 101% of the actual rise), leading to a lower rise than expected from changes in health and age alone.

These are Experimental Statistics. The analysis has been produced by the Office for National Statistics (ONS) for the first time and remains subject to testing of quality, volatility and ability to meet user needs. We advise caution when using the data.

2 . Trends affecting economic inactivity

This article investigates the impact on economic inactivity of the rising prevalence of poor health observed since the coronavirus (COVID-19) pandemic, while taking account of the parallel effects of population ageing. Economic inactivity describes people not in employment who have not been seeking work within the last four weeks, or are unable to start work within the next two weeks, or both. This section describes changes in the circumstances and characteristics of the working age population (people aged 16 to 64 years) living in private households in the UK between 2016 and 2022. We cover the years 2016 to 2022 in order to provide context on the trends running up to the 2019 to 2022 period used in the decomposition analysis. It also explains how this analysis differs from, but also consolidates and extends, previous Office for National Statistics (ONS) articles in this area.

Previous research on trends in economic inactivity

Previous articles have reported on health, age and population changes affecting economic inactivity since the coronavirus pandemic. Specifically, our Worker movements and economic inactivity in the UK: 2018 to 2022 article found that poor health brings a considerably greater probability of economic inactivity, but that this probability has not increased since the coronavirus pandemic. The article did not examine changes in the prevalence of older groups or health conditions, although it did note a large increase in the number of people citing long-term disability or sickness as the reason for being economically inactive.

A later article, Population changes and economic inactivity trends, UK: 2019 to 2026, examined the impact on economic inactivity of changing population age structure. The article found that ageing within the population aged 16 to 64 years had a substantial effect in raising economic inactivity since the coronavirus pandemic, as the last of the "baby boomers" move into their late 50s and early 60s. The article did not examine the impact of the rising prevalence of poor health.

In this article, we consolidate and extend these earlier findings by separating the relative contributions to rising economic inactivity of both changes in age structure and the rising prevalence of poor health since the coronavirus pandemic. Another extension to existing work is that we specifically focus on change over the coronavirus pandemic period in the prevalence of work-limiting health problems, rather than how they affect economic inactivity at given points in time. We use annual, rather than quarterly, data to gain a wider sense of underlying trends since the coronavirus pandemic. Published headline labour market indicators are based on quarterly data and therefore differ from annual data.

Trends in inactivity, health and age

Only around two out of every three economically inactive persons aged 16 to 64 years with a work-limiting health condition say that long-term sickness or disability is the main reason for their inactivity (although they may say it is a contributory reason). Many respondents state other factors as the main reason for their economic inactivity. For example, 13.1% say they are looking after family or home, and 6.8% describe themselves as retired. Therefore in our analysis, we use data on self-reported health conditions, rather than reason for inactivity, in order to capture the full impact of health on economic inactivity.

Only around half of people with a lasting health condition (that is, the condition has or is expected to last over 12 months) say their health limits either the kind or amount of work they can or could do. Therefore, we only include work-limiting health conditions in our analysis, which allows us to focus specifically on the impact of health conditions on the labour market.

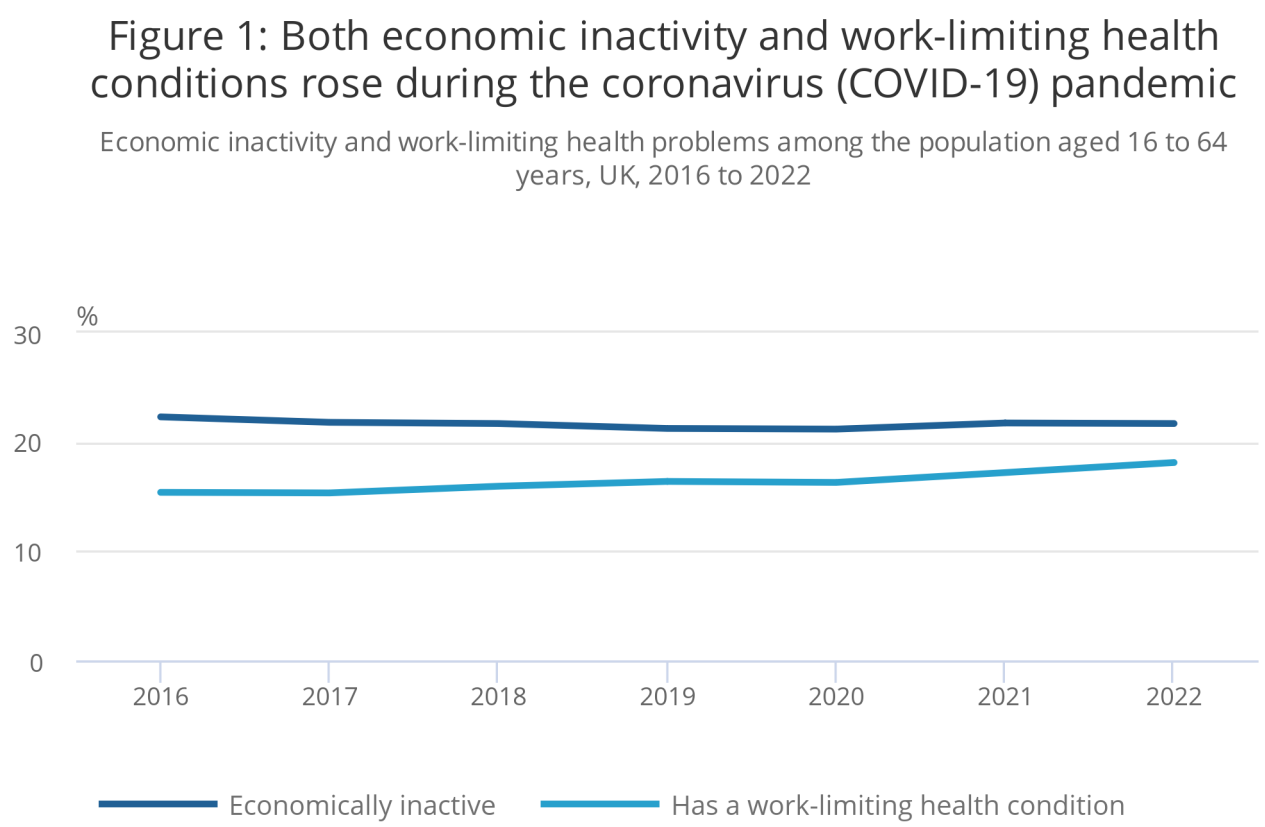
Figure 1 shows that economic inactivity among the population aged 16 to 64 years was falling in the years running up to the coronavirus pandemic, down by more than a percentage point between 2016 and 2019, from 22.3% to 21.2%. In contrast, during the coronavirus pandemic period, inactivity recorded by the Annual Population Survey rose by around 217,000 people, or just over half of a percentage point, between 2019 and 2021, from 21.2% to 21.7% of the population aged 16 to 64 years.

Between 2021 and 2022, the inactivity rate remained broadly stable at 21.7%, and has recorded falls in quarterly data since the summer of 2022, as shown in our Employment in the UK: May 2023 bulletin. Nevertheless, the focus of our analysis is on understanding the main causes of the rise in economic inactivity during the coronavirus pandemic period, which is important for understanding what may help to bring it down further.

Rising work-limiting health problems predate the coronavirus pandemic. Figure 1 shows an increase from 15.4% (6.3 million people) of the population aged 16 to 64 years reporting these in 2016 to 16.4% (6.8 million people) of this population in 2019. Since the coronavirus pandemic, work-limiting health problems rose further, reaching 7.5 million in 2022, representing 18.1% of the population aged 16 to 64 years.

Figure 1: Both economic inactivity and work-limiting health conditions rose during the coronavirus (COVID-19) pandemic

Economic inactivity and work-limiting health problems among the population aged 16 to 64 years, UK, 2016 to 2022



Source: Annual Population Survey from the Office for National Statistics

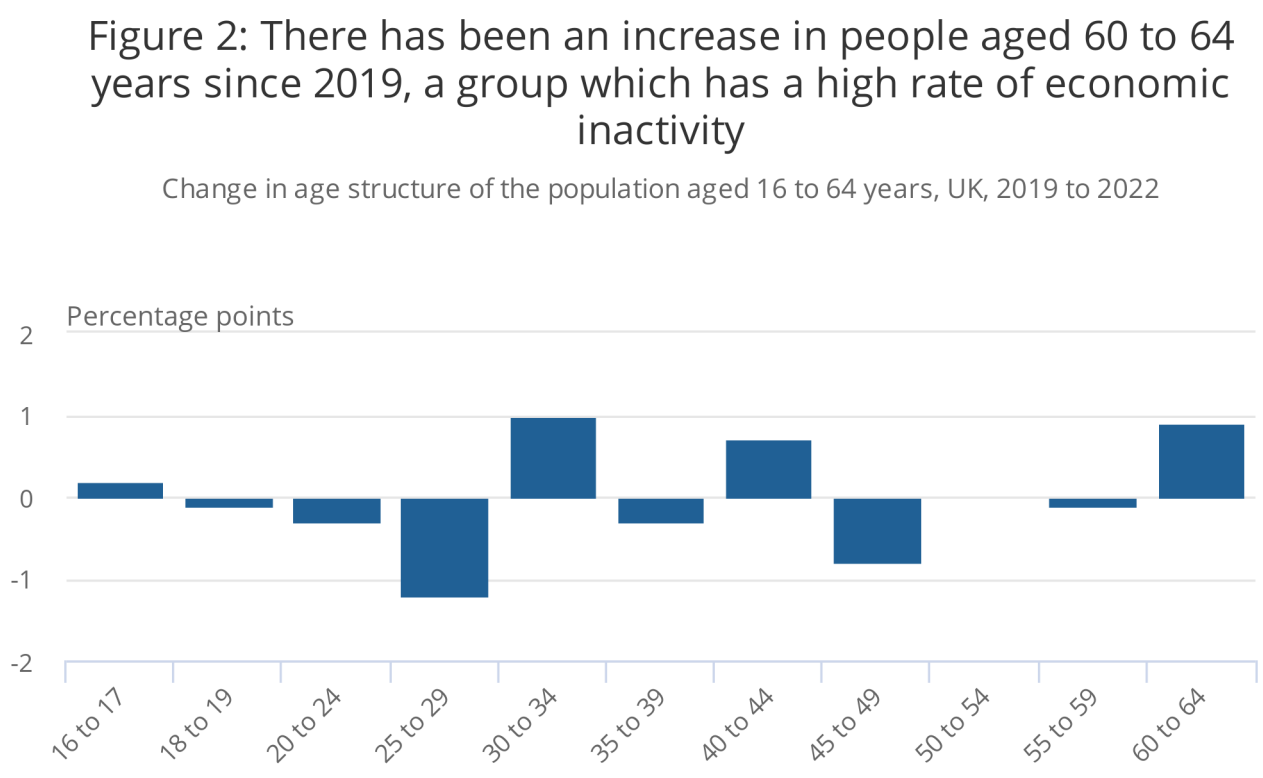
Economic inactivity is around three times higher among people with a work-limiting health condition, than among those without: 48.2% compared with 15.9% in 2019, and 48.4% compared with 15.8% in 2022. Although the economic inactivity rate has not increased by much for either group, Figure 1 shows that the prevalence of work-limiting health conditions in the population has risen, and this group's substantially higher inactivity rates serve to increase the overall inactivity rate among the population as a whole.

Economic inactivity is strongly related to age, with both younger and older people displaying markedly higher inactivity rates. Therefore, the changing age structure of the population aged 16 to 64 years, particularly an increase in the proportion of people aged 60 to 64 years between 2019 and 2022 as the last of the "baby boomers" enter their early 60s (as shown in Figure 2), could be expected to increase inactivity independent of any coronavirus pandemic-induced behaviour changes. This was found in our Population changes and economic inactivity trends, UK: 2019 to 2026 article, which was based on quarterly Labour Force Survey and population estimates.

The effect on economic inactivity of increases in other age groups is offset by decreases in other groups with similar economic inactivity rates (for example, the increase in 30 to 34 year olds is offset by the decrease in 25 to 29 year olds).

Figure 2: There has been an increase in people aged 60 to 64 years since 2019, a group which has a high rate of economic inactivity

Change in age structure of the population aged 16 to 64 years, UK, 2019 to 2022



Source: Annual Population Survey from the Office for National Statistics

Notes:

1. These changes are based on data from the weighted Annual Population Survey (APS), which may vary from published population estimates because of reweighting to better represent population sub-groups during the coronavirus pandemic when the APS went online. APS is used here for consistency with the decomposition analysis reported later in this article.

2. Note that the decomposition analysis reported later in this article used finer-grained age categories under 20 years and over 55 years than those shown in this figure. This is to capture large differences in inactivity within younger and older workers (see Section 6: Data sources and quality).

3 . Separating the contributions of health and ageing to the rise in economic inactivity, 2019 to 2022

In this section, we use statistical modelling techniques (decomposition analysis), to explore the relationship between changing population age structures, the rise in work-limiting health conditions, and rising economic inactivity among the working age population between 2019 and 2022.

In the Annual Population Survey, economic inactivity rose by just under half (0.45) a percentage point between 2019 and 2022, from 21.23% to 21.68% of the population aged 16 to 64 years. We decompose this rise according to the contributions from the rise in work-limiting health problems and changes to the age structure of the population. The decomposition analysis aims to understand the factors associated with the change in economic inactivity between 2019 and 2022 and does not provide information on the factors associated with the level of inactivity at a point in time. For more information on the modelling techniques used, please see Section 6: Data sources and quality.

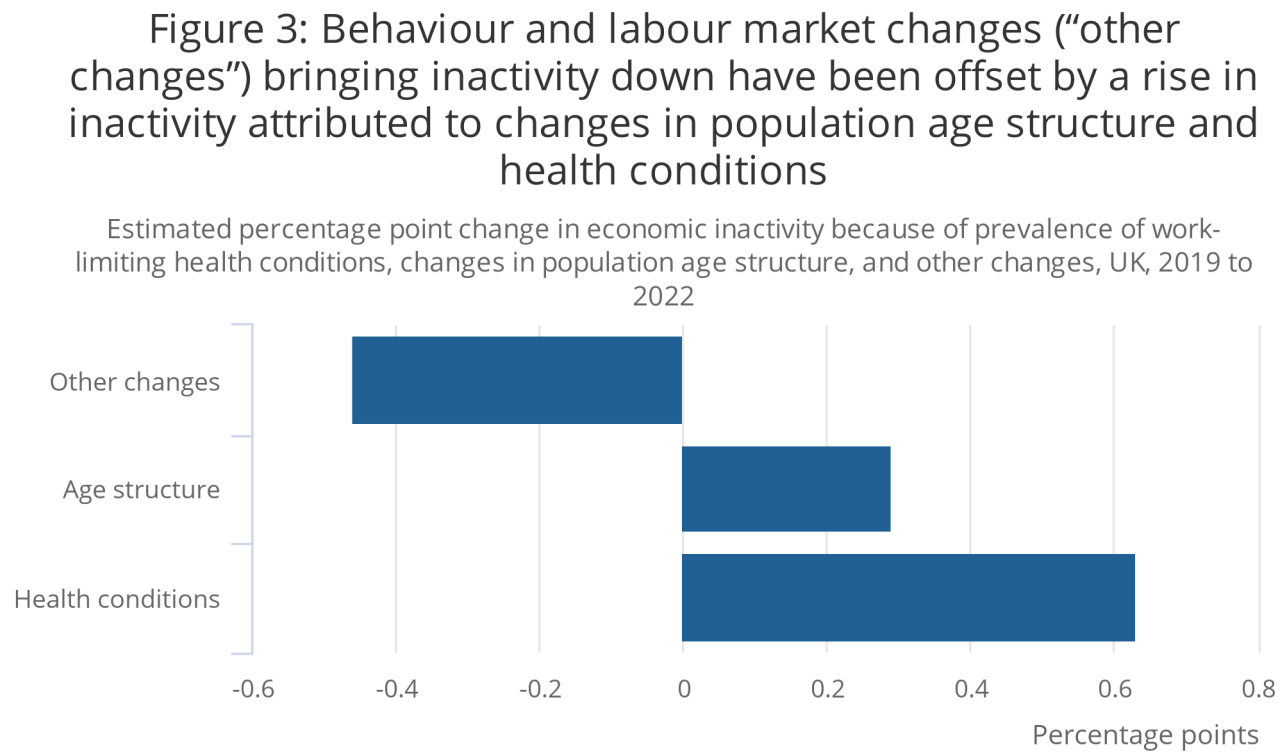
The relative contribution of health, age and other factors in rising inactivity

This analysis estimates that, if the probability of inactivity by age and health status had remained at 2019 values, the rise in the prevalence of work-limiting health problems would have raised economic inactivity by 0.63 percentage points (138% of the actual rise). Additionally, changes to the age structure of the population would have raised inactivity by 0.29 percentage points (63% of the actual rise). Alongside these influences, there are unobserved structural and behavioural changes which are estimated to have brought inactivity down by 0.46 percentage points (negative 101% of the rise). These figures sum to the observed rise of 0.45 percentage points (subject to rounding error), which is lower than predicted by changes in health and age alone because of this downward effect from unobserved structural and behavioural changes.

The downward effect of structural and behavioural changes is consistent with the pre-coronavirus (COVID-19) pandemic downward trend in inactivity continuing, which may have been enhanced since the pandemic by labour shortages and cost of living pressures acting to keep people in the workforce. This underlying downward trend, however, has been more than offset by the larger effects of rising work-limiting health conditions and changes to the age structure of the population, as shown in Figure 3.

Figure 3: Behaviour and labour market changes (“other changes”) bringing inactivity down have been offset by a rise in inactivity attributed to changes in population age structure and health conditions

Estimated percentage point change in economic inactivity because of prevalence of work-limiting health conditions, changes in population age structure, and other changes, UK, 2019 to 2022



Source: Annual Population Survey from the Office for National Statistics

Notes:

1. These figures do not sum exactly to 0.45% because of rounding.

2. "Other changes" is the remaining “unexplained” component and is assumed to be attributable to unobserved structural changes (for example, employment and educational opportunities), behavioural changes, and changing economic and labour market conditions.

The contribution of specific health conditions in rising inactivity

The rise in work-limiting health conditions between 2019 and 2022 is not equal among all health conditions. The largest rise was among people who reported their main condition to be "other health problems or disabilities", meaning their main condition was not covered by the specific categories available in the survey. In 2019, 2.0% of the population reported that they had a work-limiting health problem and chose "other health problems or disabilities" as their main condition. In 2022, this had risen to 2.8%. Conversely, some conditions showed small decreases. For example, there was a decrease in people reporting work-limiting health problems and choosing "problems with arms and hands" as their main condition. This fell from 1.1% to 0.9% between 2019 and 2022.

The decomposition analysis was expanded to understand the contribution of specific health conditions to the rise in economic inactivity. For the purpose of the decomposition analysis, health conditions were grouped into four categories, more details of which can be found in Section 5: Glossary. The four categories included:

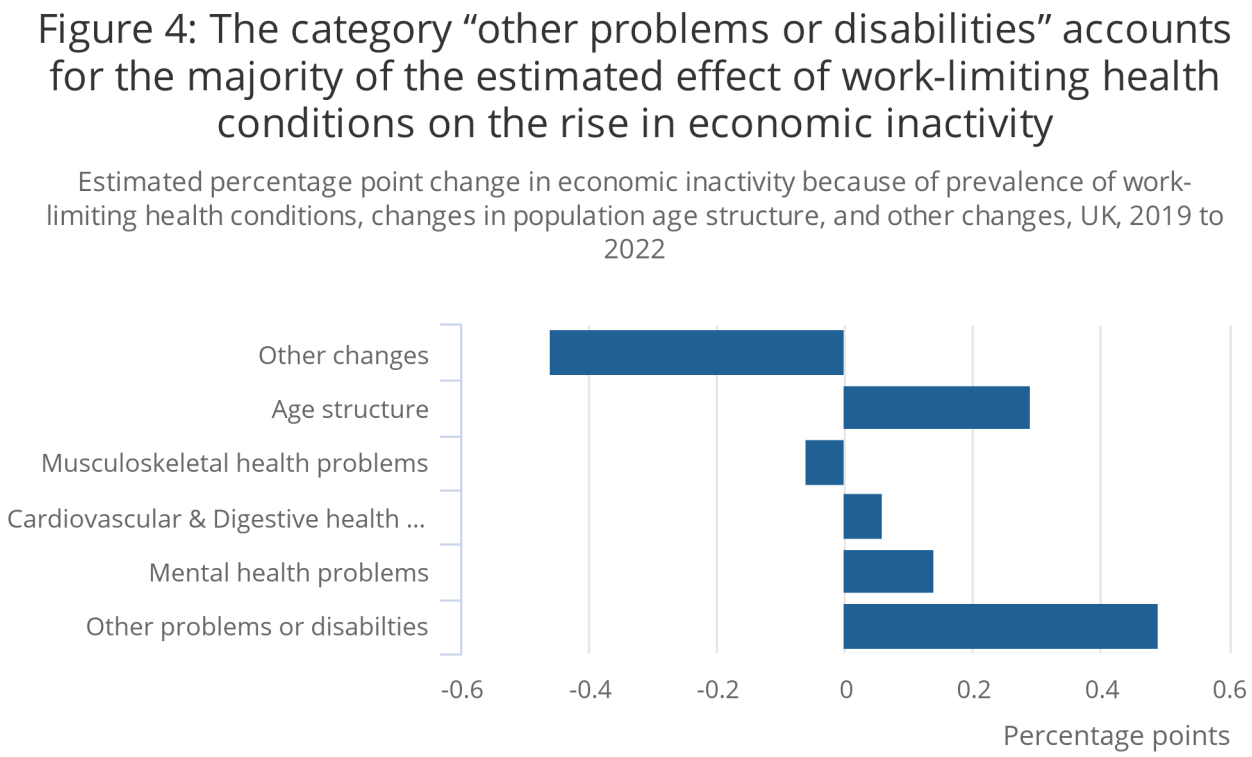
- cardiovascular and digestive problems
- mental health problems
- musculoskeletal problems
- other problems and disabilities (including various small categories)

In line with the rise in its prevalence, "other health problems or disabilities" accounts for the majority of the health effect on economic inactivity. The rise in this category is estimated to produce a rise in economic inactivity of 0.49 percentage points (107% of the total rise in inactivity). Within the decomposition analysis, this category was grouped with some other categories, including progressive illness not elsewhere classified, and learning difficulties and autism (see Section 5: Glossary for more information), meaning the size of the effect is also influenced by these categories.

Smaller portions of the rise in inactivity were attributed to mental health problems (0.14 percentage points, representing 31% of the total rise in inactivity) and cardiovascular and digestive problems (0.06 percentage points, representing 13% of the total rise in inactivity). Changes in the prevalence of musculoskeletal problems were estimated to have brought inactivity down slightly (by 0.06 percentage points, or negative 13% of the total rise in inactivity).

Figure 4: The category “other problems or disabilities” accounts for the majority of the estimated effect of work-limiting health conditions on the rise in economic inactivity

Estimated percentage point change in economic inactivity because of prevalence of work-limiting health conditions, changes in population age structure, and other changes, UK, 2019 to 2022



Source: Annual Population Survey from the Office for National Statistics

Notes:

1. “Other problems or disabilities” includes those who responded “other problems or disabilities” as well as other categories, including progressive illness, learning difficulties and autism. For more information see Section 5: Glossary.

2. These figures do not sum exactly to 0.45 because of rounding.

3. "Other changes" is the remaining “unexplained” component and is assumed to be attributable to unobserved structural changes (for example, employment and educational opportunities), behavioural changes, and changing economic and labour market conditions.

This article has shown a strong link between the observed deterioration in health among the population aged 16 to 64 years and a rise in economic inactivity since the coronavirus pandemic between 2019 and 2022. The impact of health on economic inactivity has not been driven by a marked increase in the inactivity rate of people with work-limiting health problems, confirming the findings of our Worker movements and economic inactivity in the UK: 2018 to 2022 article. Rather, there are simply many more people with work-limiting health problems, a group that already had a much higher economic inactivity rate than those without a work-limiting health problem.

Changes in age structure between 2019 and 2022 have also increased the economic inactivity rate, even after taking account of the effect of worsening health among older people. Finally, structural and behavioural changes in the labour market have brought inactivity down (for example, the rising cost of living and plentiful job vacancies), leading to a lower rise than expected from changes in health and age alone.

4 . Health, demographic and labour market influences on economic activity data

Health, demographic and labour market influences on recent rises in economic activity, UK: 2019 to 2022
Dataset | Released 19 May 2023 Estimates of the links between work-limiting ill health, demographic and labour market changes, and recent rises in economic inactivity, using Annual Population Survey data. Experimental Statistics.

5 . Glossary

Economic inactivity

People not in employment who have not been seeking work within the last four weeks, or are unable to start work within the next two weeks, or both.

Working age population

People aged 16 to 64 years.

Work-limiting health condition

People who self-reported to have a health condition that has lasted or is expected to last 12 months or more, and which limits either the kind or amount of work they can carry out. These questions are asked of all persons aged 16 to 64 years, including those who are economically inactive.

Musculoskeletal health problems

Includes problems or disabilities with arms, hands, legs, feet, back or neck.

Cardiovascular and digestive health problems

This includes:

- problems with chest or breathing
- heart problems, blood pressure, asthma, or bronchitis
- stomach, liver, kidney or digestive problems
- diabetes

Mental health problems

This includes:

- depression, bad nerves or anxiety
- mental illness, phobias, panics

Other problems and disabilities

This includes:

- progressive illness not elsewhere classified, such as some cancers and Parkinson's disease
- epilepsy
- severe or specific learning difficulties
- autism
- speech impediment
- severe disfigurement, skin condition
- difficulty in seeing
- difficulty in hearing
- other problems or disabilities
- people who did not disclose their health problem

6 . Data sources and quality

Our analysis is based on Annual Population Survey (APS) data for 2019 and 2022. The year 2019 represents the year before the start of the coronavirus (COVID-19) pandemic, while 2022 is the most recently available APS data at the time of analysis. The purpose of the analysis reported here is to separate the underlying effects of health, age structure and behaviour change on inactivity over the coronavirus pandemic period, rather than to report on the most recent quarterly trends. For this reason, we chose annual data as opposed to more recent quarterly Labour Force Survey (LFS) data. Using annual data smooths some quite large changes between quarters and provides a larger sample for analysis by age bands and work-limiting health problems. Published headline labour market indicators are based on quarterly data and therefore differ from annual data.

We used statistical modelling techniques to explore the relationship between the age and health of the population and rates of economic inactivity. Specifically, we performed decomposition analysis of the rise in economic inactivity between 2019 and 2022. We used a form of decomposition analysis based on logistic regression. Decomposition analysis can be used with many types of regression. Logistic regression was used, as it is suitable when looking at categorical outcomes (such as whether someone is economically inactive or not).

Decomposition analysis

Decomposition analysis is a statistical modelling technique used to understand the difference between two groups (for example, men and women, as in gender pay gap studies). In this case, the "groups" are 2019 and 2022, and the technique decomposes the influences on the difference in the inactivity rate in 2022 compared with 2019. The analysis estimates how much of the difference in inactivity rate can be explained by changes in the population's health and age structure between the two years.

Decomposition analysis in this context works by applying the probability of being inactive in 2019 by health status and age group to the health and age structure of the 2022 population aged 16 to 64 years. This identifies the relative contribution of deteriorating health and of changes to the age structure to the rise in economic inactivity. The remaining "unexplained" component of change in economic inactivity over this period is assumed to be attributable to:

- unobserved structural changes (for example, employment and educational opportunities)
- behavioural changes arising from the coronavirus (COVID-19) pandemic and changing economic and labour market conditions (for example, cost of living, plentiful job vacancies and changes to working practices).

The decomposition analysis was based on the mvdcmp command in Stata, using logistic regression models for each year with a binary dependent variable capturing economic inactivity (yes equals 1, no equals 0). The code used for this analysis is available on github. Independent variables were:

- a series of binary (1 or 0) dummy variables capturing work-limiting health status (cardiovascular and digestive problems; mental health problems; musculoskeletal problems; other problems and disabilities; no work-limiting health condition)
- a series of age range or single-year binary (1 or 0) age dummy variables (reflecting people in the age bands 16, 17, 18 to 19, 20 to 24, 25 to 29, 30 to 34, 35 to 39, 40 to 44, 45 to 49, 50 to 54, 55 to 57, 58 to 59, 60, 61, 62, 63, 64 years)

The reference categories (against which changes are compared) included not having a work-limiting health problem and being aged 30 to 34 years. This age range was used as the reference category because it has the lowest economic inactivity rate. Further information on how these variables were derived is outlined below. The sex composition of the population has changed very little over the three-year period of interest, so it is not included in the analysis.

Logistic regression

Logistic regression is a type of statistical modelling that estimates the probability of an event occurring (such as being economically inactive), based on the observations in a dataset. In this context, logistic regression models were used to predict the probability of being economically inactive based on age and work-limiting health status, based on the Annual Population Survey (APS) 2019 and 2022. These probabilities were used as the 2019 and 2022 inactivity rates in the decomposition analysis described above.

Measuring inactivity

The decision to withdraw from the labour market (or, for younger people, not to enter it) has many contributing factors, including employment and education opportunities, caring responsibilities, and health and financial situation. Therefore, there are limits in what can be inferred from the stated main reason for economic inactivity. For example, health could be an important factor for some who nevertheless report their main reason as retired. To provide a comprehensive picture, we base our analysis on inactivity for any reason.

Measuring health

Not all health problems affect ability to work (or only marginally so). Since our focus is on economic inactivity, we base our analysis on whether or not people say they have a health problem that limits either the kind or amount (or both) of work they can do. The work-limiting questions are asked of all respondents aged 16 to 64 years who say they have a health condition that has or is expected to last over 12 months, including the economically inactive.

In 2020, the Annual Population Survey added "autism" as an additional option when asking respondents about their health conditions. This means people who reported autism in 2022 may have listed another condition prior to this option being available. This means that the effect of "other health problems or disabilities" on economic inactivity between 2019 and 2022 may be overstated, and the effect of the other health categories may be understated. However, the net effect is zero, that is, the overall number of people reporting a work-limiting health condition is not affected. In order to mitigate this issue, we have kept the "other health problems and disabilities" category as broad as possible, by including learning difficulties, for example (for more information see Section 5: Glossary).

Measuring age

Economic inactivity changes rapidly with age for young and older adults. Economic inactivity diminishes rapidly through the age range 16 to 19 years as young adults move from education to economic activity, and again over the age of 55 years as health, financial and family circumstances change. We therefore use single-year ages for 16, 17, and 60 to 64 years when inactivity varies significantly between single ages, and slightly larger bands for 18 to 19 years, 55 to 57 years, and 58 to 59 years. Other age ranges are in five-year bands from 20 to 54 years. We have chosen these age categories to capture age-variation in inactivity, while avoiding comparing single years at age ranges where there is little difference in inactivity between single-year ages.

More quality and methodology information on strengths, limitations, appropriate uses, and how the data were created is available in our Annual Population Survey Quality and Methodology Information (QMI) report.

7 . Related links

Population changes and economic inactivity trends, UK: 2019 to 2026
Article | Released 3 March 2023
Experimental statistics estimating how the changing age-composition of the population is affecting economic inactivity.

Worker movements and economic inactivity in the UK: 2018 to 2022
Article | Released 19 December 2022
Commentary on UK worker movements and increased inactivity during the coronavirus (COVID-19) pandemic compared with other countries.

Half a million more people are out of the labour force because of long-term sickness
Digital content article | Released 10 November 2022
Trends in the number of people economically inactive because of long-term sickness between 2019 and 2022 by health problem, age, previous economic status, previous industry and previous occupation.

Employment in the UK: May 2023
Statistical bulletin | released 16 May 2023
Estimates of employment, unemployment and economic inactivity for the UK

8 . Cite this article

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