Policy Briefing Note: Rising Inactivity in the Over 50s post-COVID*

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Research Highlights

- The rise in inactivity in the over 50s is huge, and marks a reversal of two decades of declining inactivity. In this note, we investigate the rise in inactivity in the over 50s using the UK Labour Force Survey. We investigate the trends, changes during COVID, demographics, the role of specific industries and occupations, and implications for shortages across industries.

Basic facts:

- The rise in inactivity is much larger and faster than the Great Recession. This applies to both men and women, but the rise in inactivity for women is slightly larger.
- Most worrying, all of the rise comes from people who say they do not want a job, and think that they are "definitely not" likely to work again in the future. That is, they are likely not "discouraged workers" who would like a job but have stopped searching due to lack of success. The rise in the number of inactive who say they explicitly do not want to work is the largest seen on record. This is in contrast to the Great Recession, where the rise in inactivity was more likely due to a rise in discouraged workers.
- This is backed up by a flows analysis, which shows that the rise in inactivity post COVID is coming mostly from workers transitioning straight from employment to inactivity. That is, these workers have not suffered through a period of unemployment and become discouraged, but have instead left jobs (many because they were made redundant) and immediately decided that they do not want to work. This is the opposite of the Great Recession, where the rise in inactivity is driven by inflows of workers coming from unemployment, who therefore are more likely to have had time to become discouraged.

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- The largest rises in inactivity in the over 50s come from **retirement** and **sickness**.
  - Of all the reasons inactive workers gave for not searching for a job, sickness is the reason that rose the most following COVID. However, some of this might reflect pre-existing trends in worsening sickness for women pre-COVID.
  - Increasing retirement is the second most important reason that inactivity is rising, roughly as important as sickness. The increases in retirement might be related to policy changes coming from the pausing of the rising state pension age for women.
  - Rising sickness is the most important reason that men are not looking for a job, while rising retirement (relative to trend) is the most important reason that women are not looking for a job.

Demographics of the newly inactive:

- The increase in inactivity is broadly equally split between men and women, with a larger increase for women. There are significant increases for both younger (age 50-60) and older (age 60+) workers, with the increase for older workers being larger.
- The rise in inactivity appears to be largest in workers who are most likely towards the middle or lower end of the income/wealth scale. This is evidenced directly by looking at wages and earnings, where we see the largest rise in the employment to inactivity flow for workers in the second-lowest quartile of both the *weekly earnings* and *hourly wage* distribution (25-50th percentile). Looking at hourly wages, the rise is more equally split across the whole "middle class" (25-75th percentile), and the difference between earnings and hourly wages suggests that it is workers who had already reduced their hours who were more likely to exit to inactivity. This is also evidenced indirectly through other questions in the LFS. For example, the increase in inactivity is larger for low and medium educated workers than for highly educated workers. The increase in inactivity is also larger in industries and occupations which are lower paid on average.
- At the same time, the rise in inactivity does not seem to be concentrated in workers who are low enough income to be interacting with the state benefits system on a regular basis (state pension excluded). For example, the rise is larger for workers who are not claiming any housing benefits than for workers who do claim. There is not a rise in inactivity in the group of workers claiming government benefits in general.
- The exception is sickness benefits, where there has been a large rise in workers claiming sickness benefits. This likely corresponds to the increase in workers who inactive due to sickness, which is one of the largest drivers of inactivity overall. Around 1/3 of the increased inactivity is workers who are claiming sickness benefits, while the remaining 2/3 are from workers not claiming sickness benefits.
- The causes of the rise in inactivity between men and women appear to be different. A large issue is the pause in the rising state pension age for women, which rose from 60 to 65 years (to be in line with men) between 2010 and 2020. The pause in the rising pension age appears to have pushed more women into retirement during COVID. This makes retirement the largest reason for increasing inactivity for women. For men, the largest rise in inactivity comes from sickness.
- The above raises the question of how individuals are financing their consumption while inactive. The rise in inactivity does not seem to be from people who have income coming from a partner

who is working. In fact, the increase in inactivity is larger among people who are single or whose partner is not currently working. Given the recent rises in the state pension age, older workers are therefore likely to be financing their inactivity either via savings or private pensions.

Industry and occupation analysis:

- We then move on to looking at inactivity by past industry and occupation of work. The long term trend downwards in inactivity is broad based, so workers from all industries and occupations were retiring later pre-pandemic.
- Looking at COVID, we then ask if the rise in inactivity is coming from all areas of the economy. We identify two forces driving the inactivity rise: 1) a broad rise in inactivity across all industries and occupations, 2) exacerbated by a few very badly hit industries and occupations.
- The industries with the largest percentage rises in inactivity among the over 50s are: Administration and Support (40%) Wholesale and Retail (27%), Manufacturing (24%), and Accommodation and Food Services (23%).
- The occupations with the largest percentage rises in inactivity among the over 50s are: Process Plant and Machine Operatives (40%), Elementary occupations (29%), Sales and Customer Services (26%), and Caring, Leisure and customer services (24%).
- An analysis of these badly hit industries and occupations suggests a tentative explanation for their extreme rise in inactivity. For the most part, these sectors all have two things in common: 1) they are sectors which were in long term decline, and 2) they were then additionally hit during COVID. This suggests that older workers in these industries might have chosen to "retire rather than reallocate" when their industries were hit during COVID. Since these sectors were in decline, workers might have find it unlikely they would get their job back. As these workers are older, they may have chosen to retire rather than paying the costs of retraining or reallocating.
- The different rises in inactivity by industry and occupation call into question a pure "sickness" explanation of rising inactivity in older workers, as it is then not clear why certain industries and occupations have different rises in inactivity. Instead, it is likely a combination of sickness, retirement, and shocks to people's employment prospects in their area of employment which are driving rising inactivity.

Implications for labour shortages:

- The rise in inactivity in older workers has mixed implications for the key shortage sectors of the economy. Labour shortages appear to be relatively widespread across industries, but are particularly high in certain key sectors such as Accommodation and Food, Manufacturing, and Administration and Support.
- The over 50s make up around 30% of employment on average in the economy. However, in the Accommodation and Food sector they make up only 17% of workers, suggesting limited roles for older workers in that industry. It is therefore not clear that getting the over 50s back to work would help ease shortages in the food sector.
- On the other hand, older workers make up a normal share of the Manufacturing and Administration and Support industries, and there were large increases in inactivity of over 50s workers whose last job was in these two sectors. Therefore, reducing inactivity in the over 50s is likely to help ease shortages in these two sectors.

Comparison with other work

- The ONS' Over 50s Lifestyle Study
  - Our results are broadly consistent with the findings of the Over 50s Lifestyle Study, available here.
  - One difference between our methods is that they perform a survey of new inactive workers following the pandemic. We instead compare the stocks (and flows) of inactive workers both following *and before* the pandemic. We are thus interested in how the pool of inactive workers has changed since the pandemic, while their survey (which was only performed after the pandemic) is able to ask more detailed questions about inactive workers, but without reference to how their answers have changed relative to before the pandemic. Both approaches are important, and bring different benefits.
  - Our results are not directly comparable since we focus on changes and they focus on levels. However, our finding that older inactive workers mostly do not want to return to work is in line with their findings.
- IFS "The rise in economic inactivity among people in their 50s and 60s"
  - Our results are broadly consistent with the findings of a recent IFS study from June 2022, published here (IFS Briefing Note BN345).
  - Our work uses the LFS data, as does theirs. Our analysis of the stocks and flows of inactive workers finds similar results. They conclude that their has been a very broad based rise in inactivity across demographic groups, in line with our findings, although we emphasise that their has been a larger increase for lower-middle income workers and certain industries and occupations.
  - They argue that "it does not seem as if poor health is the primary driver of these increases in economic inactivity rates", because the employment to inactivity flow due to sickness has not increased. We also find that this flow has not increased, but emphasise that sickness does appear to be an important driver of increased inactivity. This is because the stock of inactive workers who say they are not looking for work because of sickness has increased significantly, even if these workers say that they did not leave their job due to sickness. This partly reflects data updates, with sickness seeming to become more important in the last waves of data. Overall, this is very complementary work which is in broad agreement, with both pieces of research taking deeper looks into different parts of the data.

Data sources

All data are from the UK Labour Force Survey (LFS). Stocks, such as the number of inactive people, are sourced from the one quarter (1Q) datasets, and flows, such as the flow from employment to inactivity, from the two quarter (2Q) datasets. For the wage analysis, we use the five quarter (5Q) dataset. All data are seasonally adjusted using a stable seasonal filter. All detrended variables (unless otherwise stated) are detrended relative to the growth trend in the five years pre the recession in question.

In this note, we restrict our sample to individuals aged between 50 and 65 years. The main results are very similar when considering all individuals over 50, or between 50 and 70. We restrict to 50-65

since the LFS 2Q flows dataset only considers workers aged below 65, and so this ensures that our 1Q and 2Q datasets have a consistent sample. We consider both men and women.

We assign all inactive individuals a last industry and occupation of work. This comes directly from the LFS questionnaire, which asks all non-employed workers what industry/occupation their last job was in. The question is asked to all workers who report that they have worked in the last eight years.

1 Basic facts: Inactivity stock and flows, reason for inactivity

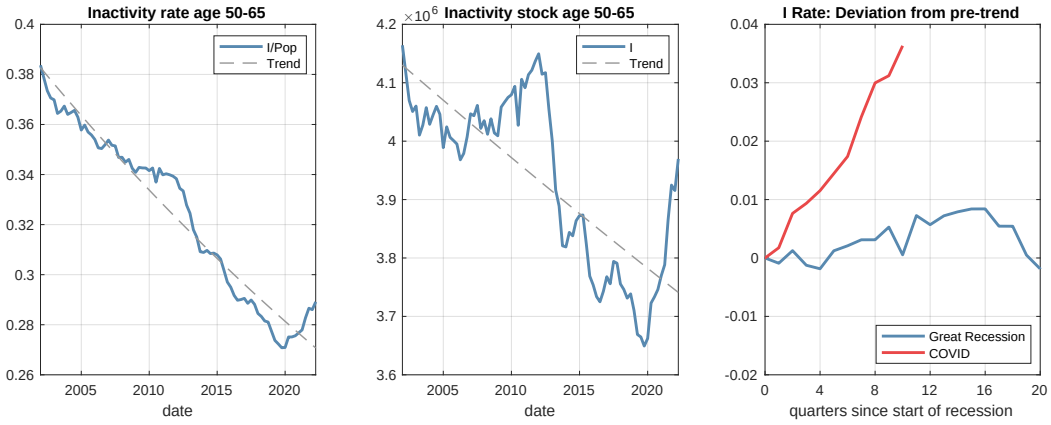
In this section we set up the basic facts relating to the rise in inactivity in the UK following the COVID pandemic.

1.1 Trends and Great Recession Comparison

We start by looking at the basic data, trends, and a comparison with over-50s inactivity during the 2008 Great Recession.

1.1.1 Inactivity stock and rate for over 50s

Figure 1: Inactivity stock and rate for 50-65 year olds

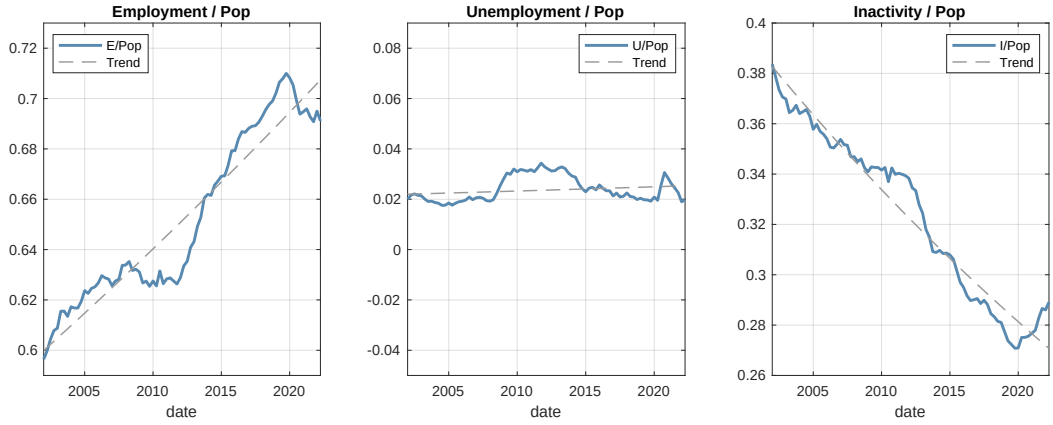


Source: Labour Force Survey. Trend lines in the first two pictures are for the whole sample. The right panel gives the deviation from the five year pre-trend for each recession. Time $t = 0$ refers to 2008Q1 for the Great Recession, and 2019Q4 for the COVID recession.

- Trend: Inactivity level and rate in the over 50s age group have been trending downwards over time, mostly reflecting that people are retiring later.
- But inactivity increases in recessions: both during COVID and in the previous 2008 Great Recession. During the Great Recession the increase was relative to trend, while after COVID the number of inactive over 50s actually increased even in absolute terms.
- Inactivity recovered back to trend following GR after 5 years, which gives hope it will recover again after COVID.
- But, 5 years is already a long time, and the rise in Inactivity following COVID is much worse. The increase in Inactivity during COVID is already three times worse than the worst increases during the Great Recession. This can be seen in the right panel, where there is a 3.5p.p. increase in Inactivity during COVID two and a half years from the start of recession, versus a less than 1p.p. maximum increase following Great Recession.

1.1.2 Employment, Unemployment, and Inactivity

Figure 2: Fraction of 50-65 year olds in each labour market state

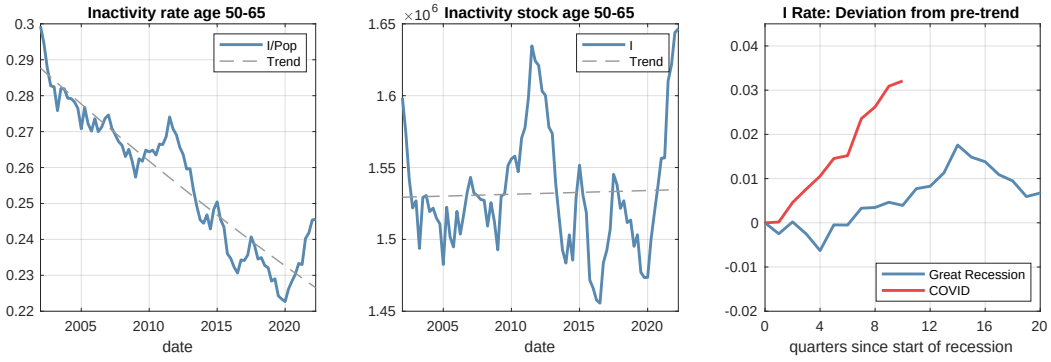


Source: Labour Force Survey. Trend lines are for the whole sample. All figures give the stocks divided by the total population in the bracket, so the three lines sum to one in any given quarter. The y-axis range of each panel is the same at 0.14, so visual changes are comparable across all three panels.

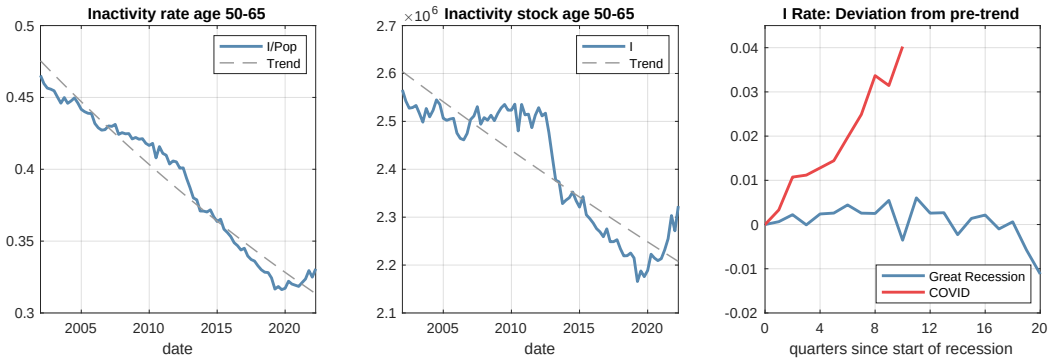
- These panels plot the employment, unemployment, and inactivity stocks for the over-50s for reference. All data are given as a fraction of the over-50s population.
- During COVID, employment fell due to a rise in both unemployment and inactivity. Unemployment (middle panel) peaks in 2020Q4 and has been recovering all of 2021 and 2022, but crucially, employment (left panel) is not recovering. Employment in 2022Q2 is near the lowest it has been in all of the COVID recession. Since unemployment is low, this is because of the rise in inactivity (right panel).
- Since employment never recovered, the fall in unemployment is probably workers moving from unemployment to inactivity. These workers might be "discouraged workers", who might return to the labour force if the economy improves.

1.1.3 First look by gender

Figure 3: Inactivity stock and rate for 50-65 year olds by gender



(a) Men



(b) Women

Source: Labour Force Survey. Trend lines in the first two pictures are for the whole sample. The right panel gives the deviation from the five year pre-trend for each recession. Time $t = 0$ refers to 2008Q1 for the Great Recession, and 2019Q4 for the COVID recession. The inactivity rate for each gender refers to the inactivity stock divided by the population of that gender.

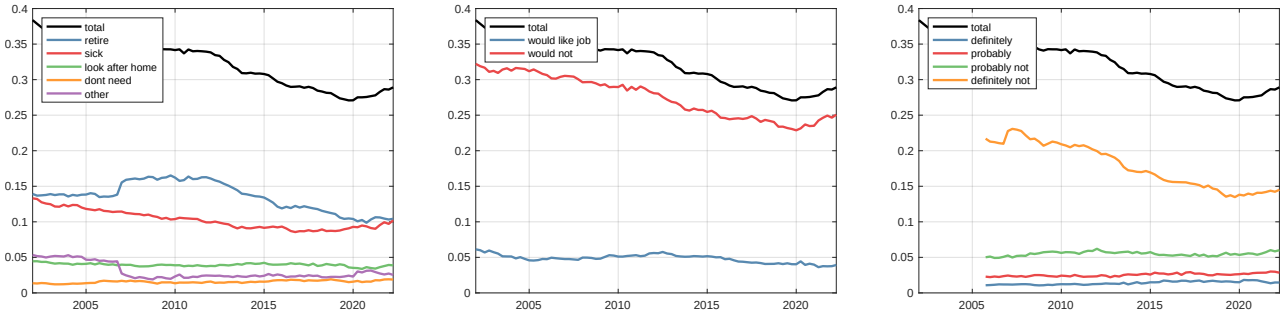
- In these plots we repeat our basic analysis of inactivity for men (panel a) and women (panel b) separately.
- The basic facts hold for both men and women: there is a general downwards trend in the inactivity rate, and inactivity rose more during the COVID recession than the 2008 recession.
- The downwards trend in the inactivity rate pre-COVID is there for both, but is stronger for women, due to rising female labour force participation.
- The rise in the inactivity rate during COVID is similar for both, but larger for women: 4pp increase for women, 3.2pp for men, as can be seen in the right panels.

1.2 Reasons for Inactivity

In this section we look behind the overall inactivity numbers, and look at the reasons workers give for being inactive.

1.2.1 Inactivity by reason: long view on the data

Figure 4: Inactivity rate by reason/job desire over whole sample



(a) Reason for inactivity (b) Would like a job? (c) Think will ever work again?

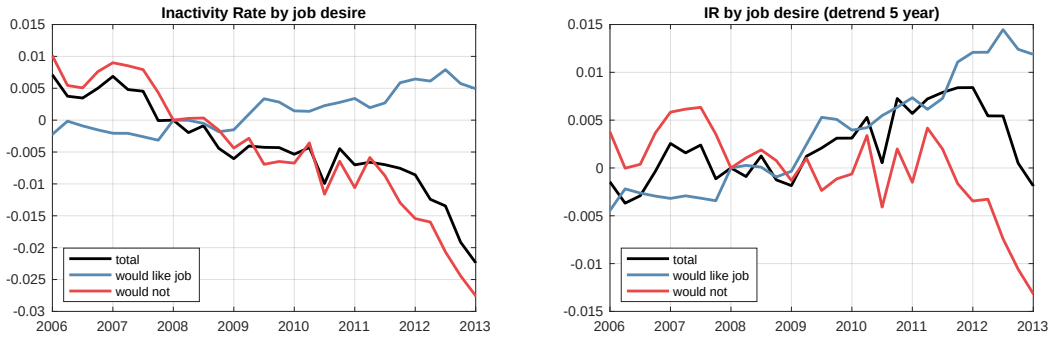
Source: Labour Force Survey. The left panel gives the most common reasons that inactive workers give for not searching, and groups less common responses into "other". All lines are divided by the same overall population total for this age group.

In the figure above we plot inactivity split by three different questions relating to the reason for inactivity. We plot the data over our whole sample for reference. In the sections below, we dig into each question in turn.

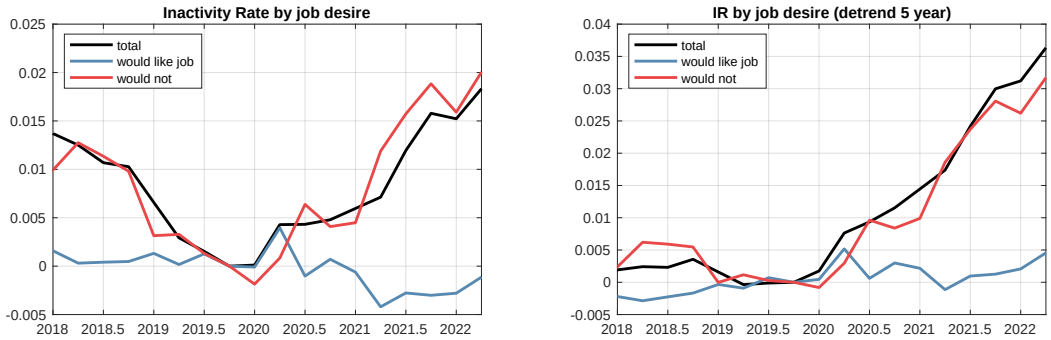
Unfortunately, there is missing data pre 2006 (right panel) and a data discontinuity (left panel) which make comparisons with the Great Recession difficult for all but the "would you like a job" question (centre panel).

1.2.2 Inactivity by whether want a job or not

Figure 5: Inactivity rate by whether want a job or not



(a) Great Recession



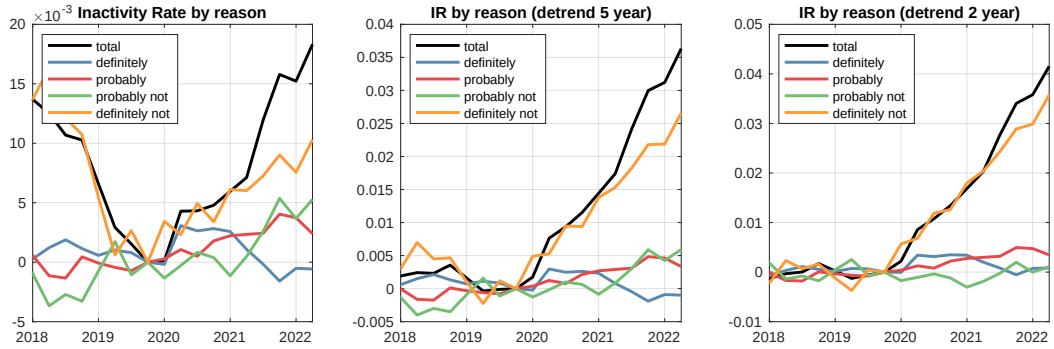
(b) COVID

Source: Labour Force Survey. All lines are divided by the same overall population total for this age group. Left panels give the values relative to the quarter pre recession, $X(t) - X(0)$, where $X(0)$ is the value in 2008Q1 and 2019Q4 for the two recessions respectively. Right panels do the same, but with all lines detrended with their five year pre-recession trends.

- These plots split the inactive stock into workers who say they would like a job and those who say they would not like a job. Recall that inactive workers by definition are not searching, so those inactive who say they would like a job are not searching, despite wanting a job. The black lines give the percentage point change in the inactivity rate (inactive stock / population) from the start of the recession, and the remaining lines decompose this into the individual groups. Panel (a) plots the Great Recession and panel (b) COVID, with each plot starting two years before the recession.
- All of the increase in the inactivity rate during COVID is from those who say they do not want a job, as we can see in panel (b). This rise is completely unprecedented in the whole sample, and is true for the raw data (left panel) and if you detrend each series with their 5-year pre-recession trend (right panel).
- The big (worrying) difference relative to Great Recession is that during the Great Recession, the rise in inactivity comes from those who say that they do want a job (panel a). That is, the rise in inactivity during the Great Recession feels more like "discouraged workers" who want a job but are inactive because they have given up on searching. During COVID it is the opposite, as the rise in inactivity is in workers who explicitly say they do not want a job. This suggests that inactivity might be harder to deal with this time.

1.2.3 Inactivity by whether think will ever work again

Figure 6: Inactivity rate by whether think will ever work again

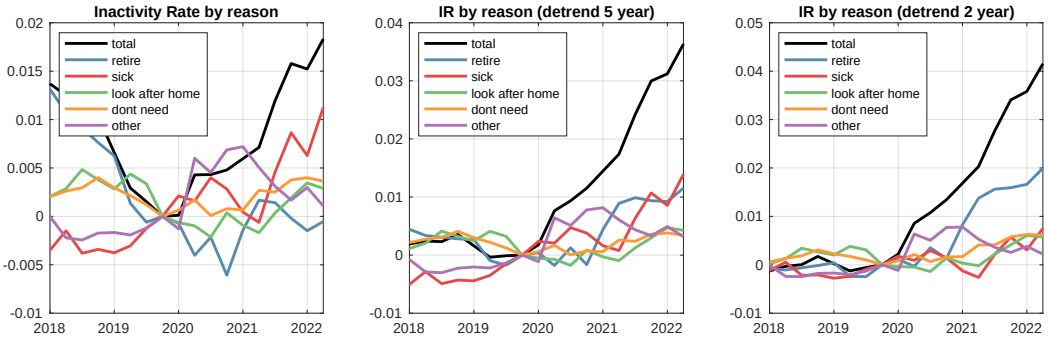


Source: Labour Force Survey. All lines are divided by the same overall population total for this age group. Left panel gives the values relative to the quarter pre recession, $X(t) - X(0)$, where $X(0)$ is the value in 2008Q1 and 2019Q4 for the two recessions respectively. Middle (right) panels do the same, but with all lines detrended with their five year (two year) pre-recession trends.

- These plots split the inactive stock based on worker's assessments of whether they think they will ever work again. Workers can answer that they think they will "definitely" will work again, down to they will "definitely not" work again. The black lines give the percentage point change in the inactivity rate (inactive stock / population) from the start of the recession, and the remaining lines decompose this into the individual groups.
- Almost all of the rise in inactivity is from workers who think that they will "definitely not" work again. This is true for the raw data (left panel) and when detrending by 5 year (centre panel) and 2 year (right panel) pre-recession trends.
- This suggests that the rise in inactivity is from workers who have decided to permanently leave the labour force, meaning that the rise in inactivity could be permanent. This also agrees with the results from the previous section.

1.2.4 Inactivity by stated main reason for inactivity

Figure 7: Inactivity rate by reason during COVID



Source: Labour Force Survey. All lines are divided by the same overall population total for this age group. Left panel gives the values relative to the quarter pre recession, $X(t) - X(0)$, where $X(0)$ is the value in 2008Q1 and 2019Q4 for the two recessions respectively. Middle (right) panels do the same, but with all lines detrended with their five year (two year) pre-recession trends.

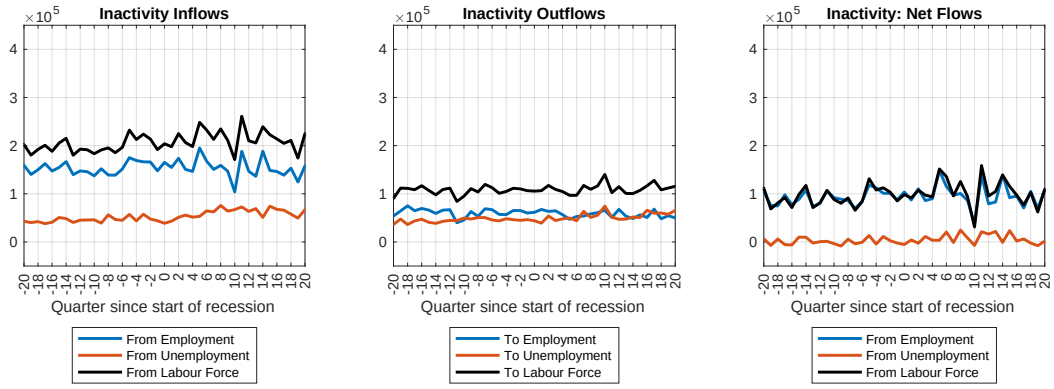
- These plots split the inactive stock based on worker's stated main reason that they are not searching for a job. Workers can give many responses, and we focus on the four largest here: not searching due to retirement, sickness, because they are looking after their home, and because they say they do not need a job. The purple line groups all other responses into "other". The black lines give the percentage point change in the inactivity rate (inactive stock / population) from the start of the recession, and the remaining lines decompose this into the individual groups.
- Trend: The long run decline in Inactivity rate for over 50s is driven by a decline in people saying they are retired, as can be seen in the left panel. Over the longer run, there is a decline in people not working because of sickness (see Figure 4). However, in the two years pre-COVID, sickness begins increasing as a reason for not searching.
- During COVID, what reason "caused" the rise in inactivity is a little subtle, and depends on how you think about trend vs COVID shock.
  - If you do not detrend then retirement is barely higher than it was in 2019Q4, so retirements cannot explain the non-detrended rise in Inactivity (left panel). But, retirement also sees a massive change relative to the pre-COVID trend, since retirements were declining before COVID. If you detrend in the 2 or 5 years pre-COVID, retirements explain around 30-70% of the increase in inactivity (centre and right panels).
  - On the other hand, sickness looks important if you do not detrend, explaining more than half of the raw rise in inactivity in the left panel. But, it loses importance as you detrend. Especially relative to two-year trend, sickness has barely increased as a reason for inactivity (right panel). This suggests that some of the rising inactivity due to sickness is not sickness due to the coronavirus itself, but due to recents trends in sickness that started in the last few years.
  - Taking the five year detrend as a middle ground, sickness and retirements are the two most important factors driving rising inactivity, roughly equally important with sickness ever so slightly more important.

1.3 Flow analysis

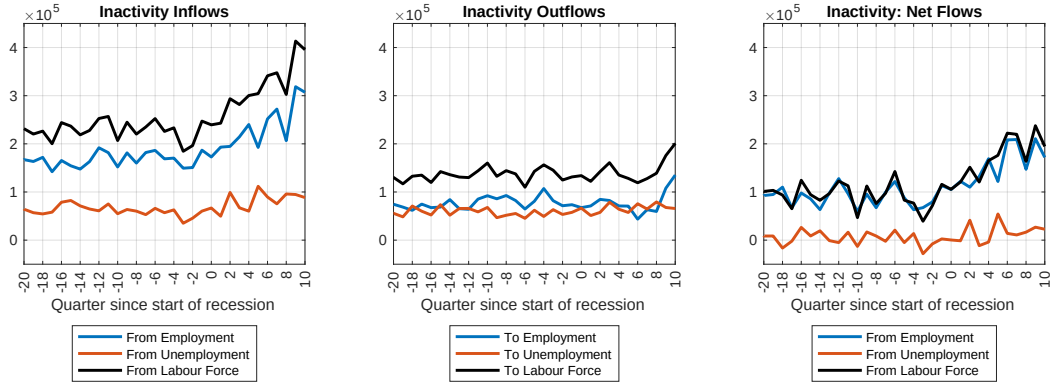
In this section we move past the inactivity stocks, and look at the flows in and out of inactivity. This allows us to see if inactivity increased due to (for example) increased inflows into inactivity from employment, versus reduced outflows from inactivity into other labour market states.

1.3.1 Aggregate flows in and out of inactivity

Figure 8: Aggregate flows to and from Inactivity



(a) Great Recession



(b) COVID

Source: Labour Force Survey. Time $t = 0$ refers to 2008Q1 for the Great Recession, and 2019Q4 for the COVID recession. Flows are computed from the LFS 2Q sample, with $X2Y(t)$ giving the number of individuals flowing from state X to Y between time $t-1$ and t.

- Plotting the flows shows the dominant role of inflows to inactivity in driving the rise in over-50s inactivity during COVID. Looking at panel (b), the inflows into inactivity (left panel) dramatically rose, which drives up the number of inactive people. The flows out of inactivity (centre panel) did not fall much early in the recession.
- So are workers flowing in to inactivity more from employment, or unemployment? The left panel of panel (b) shows that inflows from both employment and unemployment rose, but the rise was larger from employment. The inflows from unemployment actually occurred in two large spikes, corresponding to the first two national lockdowns.[1]

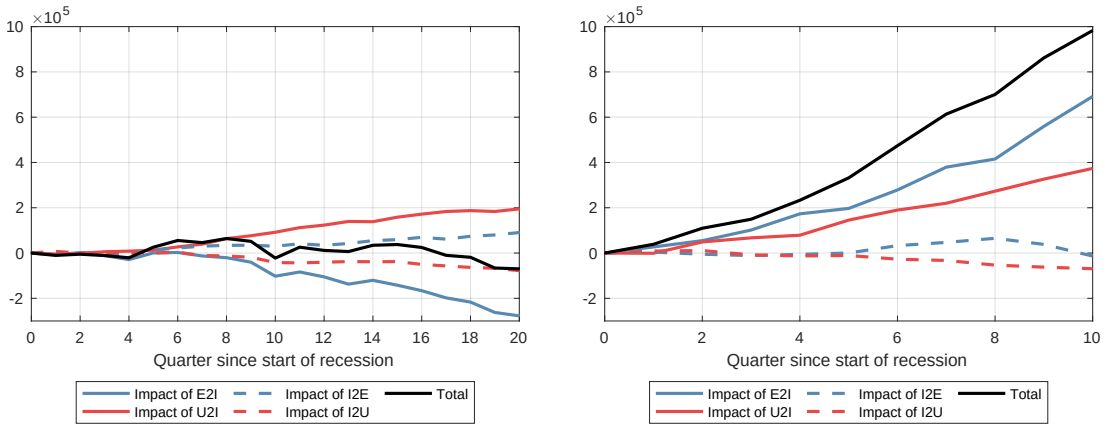
[1]These spikes are then followed by spikes in the outflow from inactivity back to unemployment one quarter later when

- Later in the COVID recession, we see that the outflows from inactivity to employment have started significantly rising (panel (b) centre panel). This shows that some inactive workers are now returning to work, giving hope that the rise in older worker inactivity might not be permanent. However, the inflows to inactivity are also still elevated, so what we are currently seeing is increased "churn" between employment and inactivity, but with the net inflow into inactivity still higher than it was pre-pandemic.

the lockdowns lifted, as can be seen in the centre panel. These spikes are smaller though, suggesting that many of the older workers who were pushed from unemployment to inactivity during lockdowns did not later come back.

1.3.2 Cumulative excess flows

Figure 9: Cumulative inactivity flows



(a) Great Recession (b) COVID

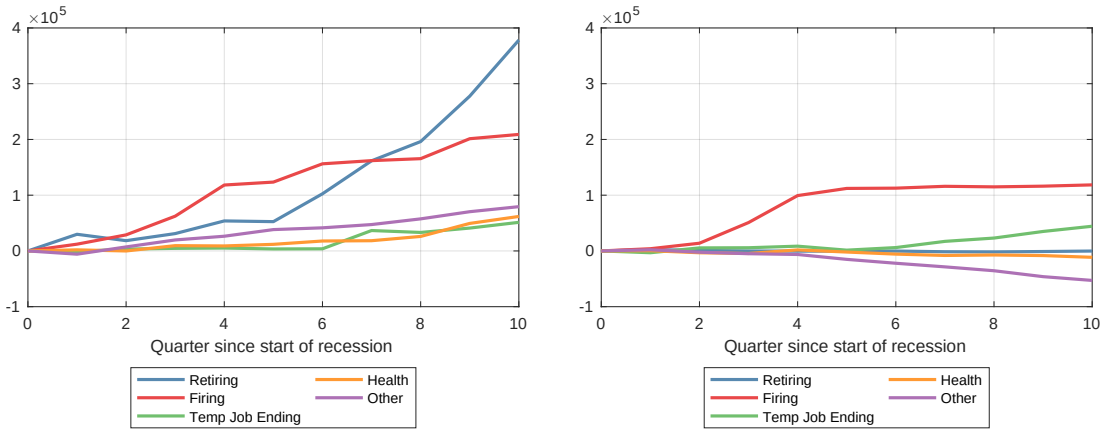
Source: Labour Force Survey. Time $t = 0$ refers to 2008Q1 for the Great Recession, and 2019Q4 for the COVID recession. Flows are computed from the LFS 2Q sample, with $X2Y(t)$ giving the number of individuals flowing from state X to Y between time $t-1$ and t. Cumulative excess flows at time s are computed as the sum from $t = 1$ to $t = s$ of the deviation of the flow from its average value in 2019. The flows are first detrended using the five year pre-recession trends.

- To understand the impact of these flows, it is helpful to give the "cumulative" flows, that is the sum of all the flows up to a given time. In these pictures, we plot the cumulative excess flows, which give the sum of how much each flow is above average from the start of the recession up to a given date. In a perfect world, adding up the four cumulative flows at any time t would give the change in the inactivity stock between the start of the recession and time t.[2]
- Panel (b) shows that the rise in inactivity during COVID was entirely driven by increased inflows from the labour force, and mostly driven by increased inflows of people coming straight from employment.
- Panel (a) shows that COVID was different from the Great Recession. In the Great Recession, the rise in inactivity is mostly driven by increased inflows from unemployment, while inflows from employment actually fall.
- This again suggests that this time is different. The increase in inactivity during the Great Recession was mostly driven by discouraged workers coming from unemployment. But the COVID recession is the opposite, with older workers moving straight from employment into inactivity. The flows analysis agrees very much with our stocks analysis, where the rise in inactivity in COVID is driven by people saying they do not want a job and are retired, while in the Great Recession the rise is driven by people who say they do want a job. What the flows analysis shows us is that during COVID, the new inactive have flowed directly from being employed, to immediately being inactive and not wanting to work.

[2] In practice, since the flows are computed on the smaller 2Q sample and the stocks the larger 1Q sample, the flows do not exactly add up to the change in the true 1Q stocks.

1.3.3 Cumulative excess inflows by reason left last job:

Figure 10: Cumulative flows from employment by reason left work (during COVID)



(a) E2I by reason left

(b) E2U by reason left

Source: Labour Force Survey. Time $t = 0$ refers to 2008Q1 for the Great Recession, and 2019Q4 for the COVID recession. Flows are computed from the LFS 2Q sample, with $X2Y(t)$ giving the number of individuals flowing from state X to Y between time $t-1$ and t. Cumulative excess flows at time s are computed as the sum from $t = 1$ to $t = s$ of the deviation of the flow from its average value in 2019. The flows are first detrended using the five year pre-recession trends.

- These pictures further break down the inflows into inactivity during COVID, by the reason that workers left their job. Specifically, panel (a) breaks down the cumulative excess employment to inactivity (E2I) flow, which is the blue line in panel (b) of the last section. The LFS asks people why they left their job, and we group the answers into five intuitive categories. For comparison, in panel (b) we also plot the cumulative excess employment to unemployment (E2U) flow.
- By the end of the sample (2022Q2) the largest cumulative reason for people to flow from employment to inactivity is people retiring (taking early retirement or at retirement age) (panel a).
- But the second largest reason is people being fired and then going straight into inactivity (panel a), which was the largest reason for E2I flows early in the pandemic. Here the label "Fired" includes both being made redundant or dismissed, which we informally refer to as being fired. Notice that firing is the largest contributor to the E2U flow (panel b). So older people fired during the pandemic naturally fall into two camps: those who are fired and then do not want a job go straight to inactivity, and those fired who do want a job go into unemployment. Comparing the two panels, an interesting fact is that more over 50s people who were fired went straight into inactivity than unemployment, suggesting that even older people pushed out of jobs by firing would rather not work.
- Since many inactive were therefore pushed out of a job by firing, there might seem to be a chance they could be pulled back into work when economy improves, since they did not voluntarily leave their last job. This is a hope, but remember that the aggregate inactivity stock results imply that these workers must immediately say that they do not want a job, definitely think they will not work again, and are retired. So, despite being forced out, at least for now they do not appear to want to go back to work.
- Interestingly, very few extra workers say they left their job for health reasons, despite inactivity due to ill health being one of the largest drivers of the increase in the *stock* of inactive workers. It

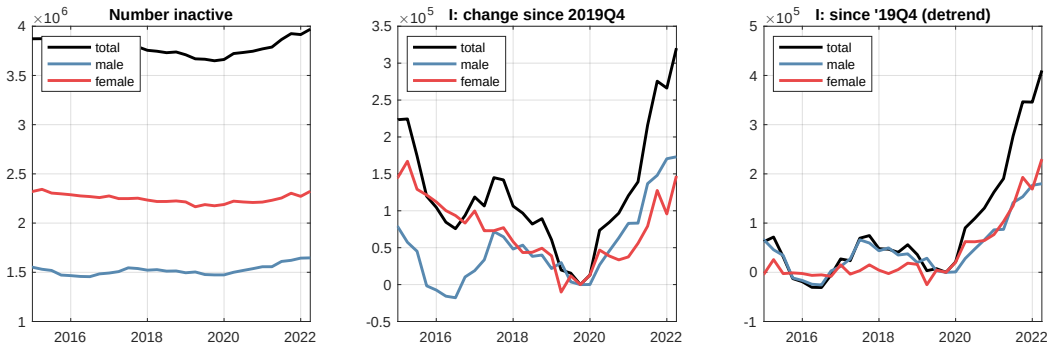
is possible that the workers who left work due to retirement, being fired, or other reasons now find themselves too sick to search for work.

2 Demographics of the newly inactive

In this section we turn to analysing the demographics of the rise in inactivity of the over 50s, to work out which groups of people are becoming inactive.

2.1 Men vs women

Figure 11: Inactivity by gender during COVID

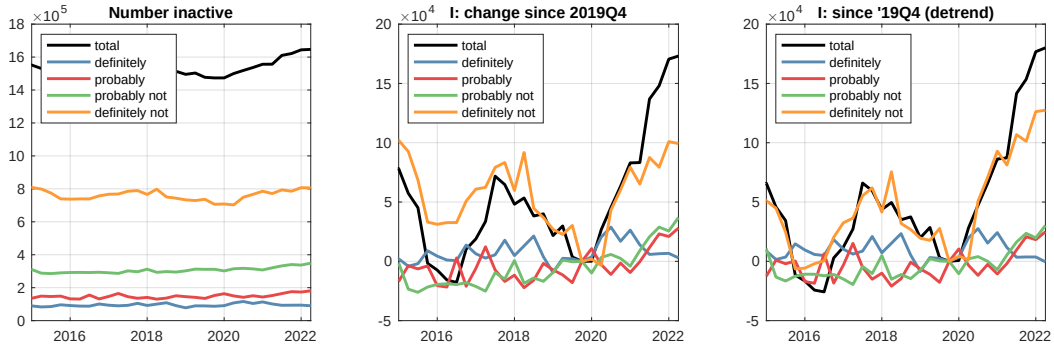


Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends.

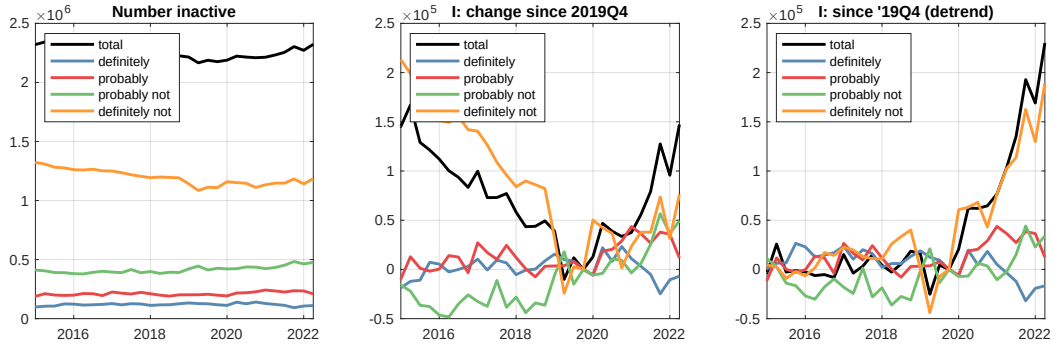
- These plots split the inactive stock based on worker's gender. The black lines give the change in the number of people inactive from the start of the recession, and the remaining lines decompose this into the individual groups.
- The total rise in inactivity comes roughly equally from increases in inactivity in men and women, regardless of whether you detrend (right panel) or not (left panel). Detrended, the increase is slightly larger for women than for men, but overall this is not a phenomenon driven only by one gender.
- Note that the difference between men and women is slightly more pronounced if we look at the inactivity rate, not just the number of workers, as we did in Figure 3. However, the broad patterns are similar.

2.2 Men vs women: whether think will work again

Figure 12: Inactivity by whether think will ever work again: Men vs Women



(a) Men



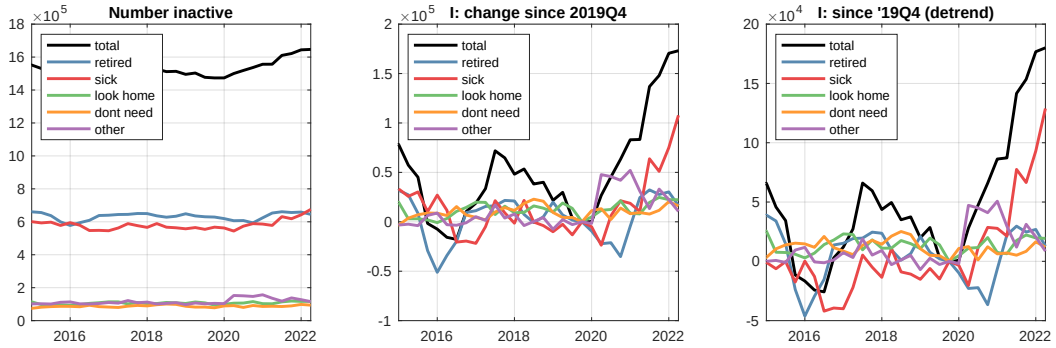
(b) Women

Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends.

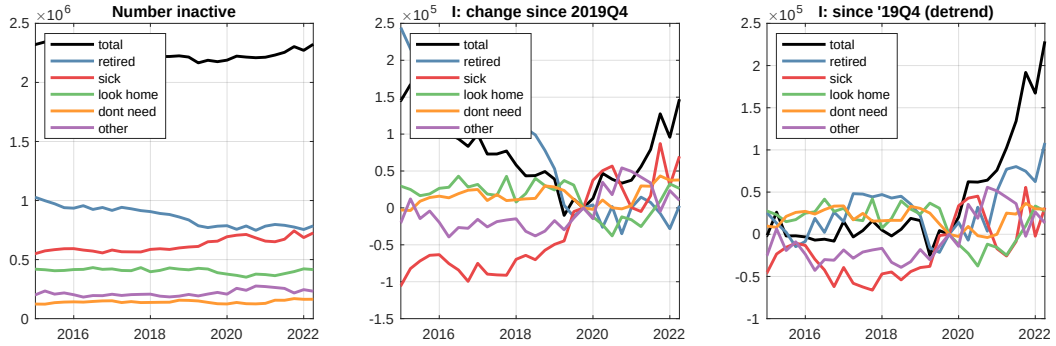
- These plots split the inactive stock based on worker's assessments of whether they think they will ever work again, but now done for each gender separately. Workers can answer that they think they will "definitely" will work again, down to they will "definitely not" work again. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual groups. Men are in panel (a), and women are in panel (b).
- For both men and women, most of rise in inactivity is people saying that they think they will "definitely not" work again. This suggests that workers themselves think that they will not be coming back to work, and so the rise in over-50s inactivity might be permanent.

2.3 Men vs women: stated main reason for inactivity

Figure 13: Inactivity by reason for not looking: Men vs Women



(a) Men



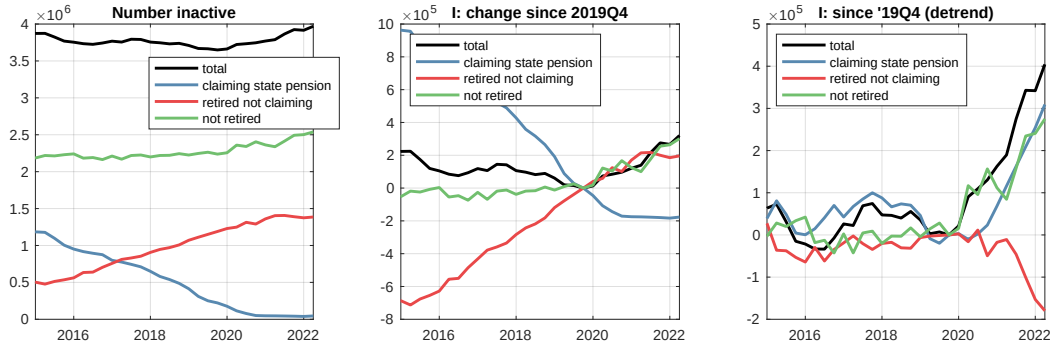
(b) Women

Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends.

- These plots split the inactive stock based on worker's stated main reason for not looking for a job, but now done for each gender separately. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual reasons. Men are in panel (a), and women are in panel (b).
- When not detrending, for both men and women people not looking for a job due to sickness is the largest contributor to rising inactivity (centre panels). For men, this is also true when detrending (right panel), where sickness explains nearly all of the rise in inactivity. For men, there is no rise in workers in this age group saying they are inactive due to being retired.
- However, for women the story is more complicated. After removing the pre-pandemic trends, *rising retirement is actually the most important driver of increased inactivity for women* (right panel). This is for two important reasons. Firstly, the number of retired women was trending down pre-pandemic. Secondly, the number of women saying they were inactive due to being sick was trending up pre-pandemic. We discuss this in more detail in the next section, but for now note that there is clearly an interesting different between inactive older men and women, with rising sickness being important for men, and rising retirement being more important for women.

2.4 Retirement and Pensions

Figure 14: Inactivity by retirement status during COVID



Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends.

All workers:

- These plots split the inactive stock based on retirement status. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual groups. The blue line gives the stock of workers claiming the state pension. The red line gives workers who are retired but not claiming the state pension (specifically, the number saying retired subtracting the number saying they are claiming the state pension). The green line gives the remaining inactive who are not retired or claiming the state pension.

- The first panel reveals that changes in state pension laws during this period are important. Pre-COVID there was a trend decline in number of inactive workers in this age group claiming the state pension (blue line). The reason for this is that we study workers aged 50-65, and the state pension age was being raised during this period for women. The state pension age was raised from 60 to 65, and finally hit 65 in November 2018, just before COVID hit. Thus, the number of workers aged 50-65 claiming the state pension falls through this period, before finally hitting zero. For men, the state pension age was 65 during this period, and the retirement age for both men and women then rose to 66 in late 2020.[3]

- On the other hand, we see an upwards trend pre-COVID in the number of people retiring without claiming the state pension (red line). Recall that overall, total retirements were trending down pre COVID (see Figure 4).

- Relative to trend (right panel) all of the increase in inactivity due to retirement is driven by a rise in people claiming the state pension. This is simply the stopping of the downwards trend, as the state pension age for women stopped rising. **This suggests that the increase in retirements (relative to trend) during COVID might not be due to workers deciding that they suddenly want to retire, but simply due to changes in the state pension age.**

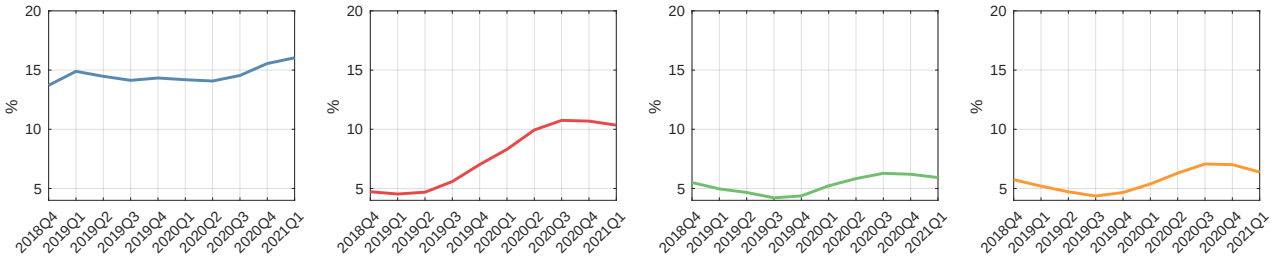
Men vs women:

[3] See, for example, the discussion by the Parliamentary and Health Service Ombudsman here for more details.

- The idea that the state pension age changes are an important driver of inactivity is further supported by looking at men and women separately, as we did in Figure 13. Since the changes in the state pension age applied more to women than men, if retirement is a more important driver of increased inactivity for women than men then this suggests that the policy had an effect on women's inactivity.
- Indeed, we saw that the detrended rise in inactivity for men is almost entirely due to rising sickness, and there was no rise in retirements for men post-pandemic. For women, we instead saw no rise in sickness, and that rising retirements were the most important driver of rising inactivity, relative to trend. This is consistent with the idea that the detrended rise in retirements is more due to the change in the state pension age for women than due to the pandemic itself.

2.5 Hourly wages and weekly earnings in last job pre-inactivity

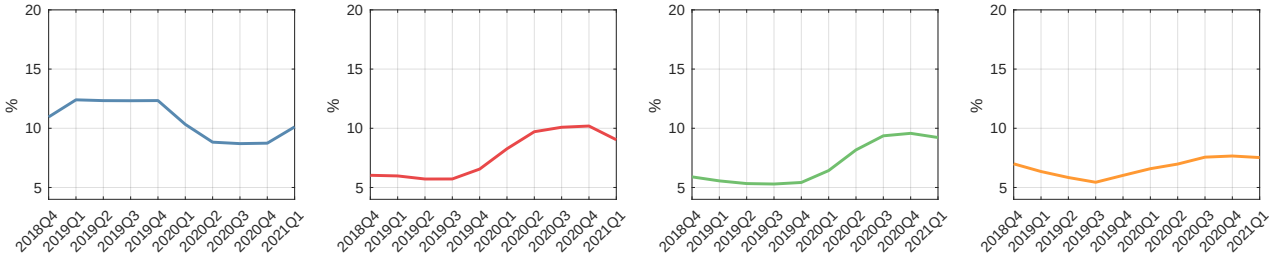
Figure 15: E2I flow by weekly earnings quartile during COVID



(a) Lowest wages (b) Lower-middle wages (c) Upper-middle wages (d) Highest wages

Source: Labour Force Survey. Data are from the 5Q panel, and are not detrended. Data at quarter t give the number of workers who were i) employed at quarter $t-4$ at a job in that weekly earnings quartile, and ii) inactive at date t, expressed as a percentage of total employment in that earnings quartile at time $t-4$. Each figure gives a different quartile of the earnings distribution, computed using the earnings distribution in that quarter of data.

Figure 16: E2I flow by hourly wage quartile during COVID



(a) Lowest wages (b) Lower-middle wages (c) Upper-middle wages (d) Highest wages

Source: Labour Force Survey. Data are from the 5Q panel, and are not detrended. Data at quarter t give the number of workers who were i) employed at quarter $t-4$ at a job in that hourly wage quartile, and ii) inactive at date t, expressed as a percentage of total employment in that wage quartile at time $t-4$. Each figure gives a different quartile of the wage distribution, computed using the wage distribution in that quarter of data.

- In this section we exploit the five quarter panel nature of the LFS to investigate inactivity by income. The challenge here is that wage is, by definition, only observed before they become inactive, so we need to use the panel data to link inactive workers to their last job before they become inactive. Additionally, individuals are only asked about their wages in the first and last quarter of the five quarters that they are followed in the LFS. For this reason, we turn to the five quarter panel dataset.
- We look at workers grouped both by hourly wages, and weekly earnings. These give different results because workers with the same hourly wage might work a different number of hours per week (for example, being part time) which would lead to different total weekly earnings.
- In the figures above, data at quarter t give the number of workers who were i) employed at quarter $t-4$ at a job in that wage or earnings quartile, and ii) inactive at date t, expressed as a percentage of total employment in that quartile at time $t-4$. Thus, we are computing the $E2I$ rate for workers by wage or earnings quartile. Note that we are focusing on a longer term flow here, as we check if the worker is inactive one year later, regardless of what happens in between $t-4$ and t. Figure 15 plots the flows by weekly earnings quartile and Figure 16 by hourly wage quartile.

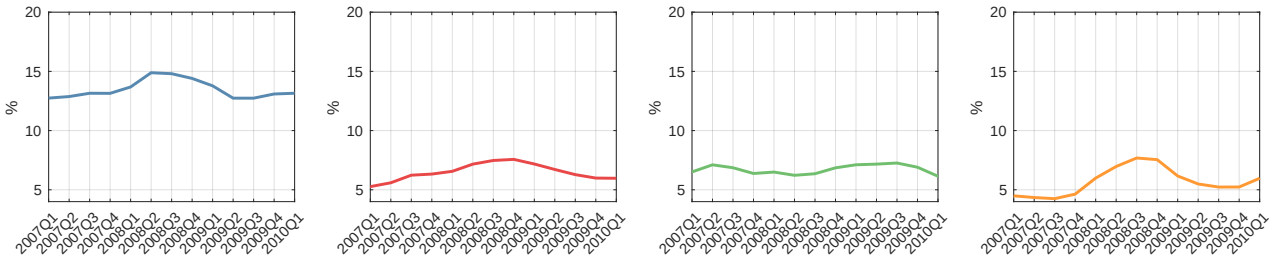
- In Figure 15 we see that the rise in inactivity post COVID is largest for workers in the lower-middle quartile (25-50th percentile, panel b) of the weekly earnings distribution, where the yearly $E2I$ rate rose from below 5% to above 10%. For the upper-middle and highest earnings quartiles, the rise is much smaller, only rising to less than 8%. For the lowest quartile of the earnings distribution, the $E2I$ rate was already much higher, at around 14%, and has also risen slightly during and after COVID.

- Focusing instead on hourly wages, we see a similar but slightly nuanced picture. In Figure 16 we see that the rise in inactivity post COVID is actually largest for workers both in the lower-middle (panel b) and upper middle (panel c) part of the hourly wage distribution. For the highest wage workers (panel d) the increase is smaller. For the lowest wage workers (panel a) there is actually a *decrease* in the $E2I$ rate during COVID.

- The difference between the results for the groups defined by hourly wage or weekly earnings is important. Since the $E2I$ rise is concentrated in the lower-middle weekly earnings group, but extends into upper-middle hourly wages as well, this suggests the following interpretation: The workers who are flowing most into inactivity: 1) come from both the lower-middle and upper-middle parts of the wage distribution, and 2) have lower hours worked, which pushes them into the lower-middle part of the earnings distribution. Whether these workers are working lower hours voluntarily or involuntarily is potentially important to investigate further.

- This shows that the rise in over-50s inactivity post-COVID appears to be largest for lower-middle earnings workers. This is an important result, as it shows that over-50s inactivity is not being driven by the richest workers, who would be the most able to use their wealth to fund retirement. At the same time, there are smaller rises for higher earnings workers, and the lowest earnings workers were already becoming inactive at a very high rate even before the pandemic hit. **At the very least, the rise in inactivity is very broad-based across the income distribution, and larger for lower-middle earnings workers.**

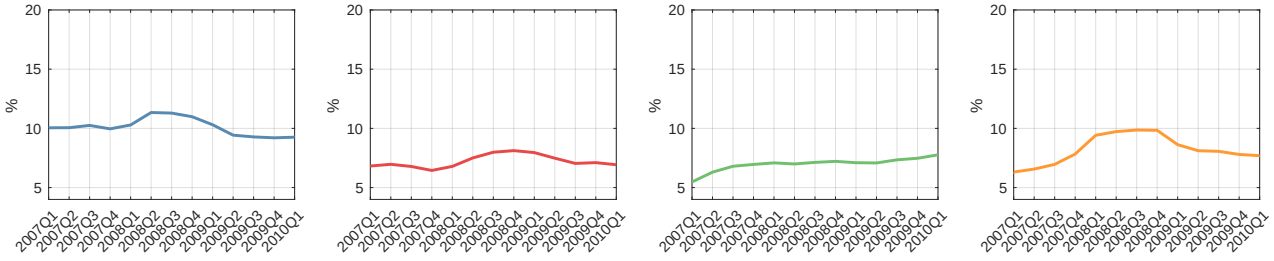
Figure 17: E2I flow by weekly earnings quartile during the Great Recession



(a) Lowest wages (b) Lower-middle wages (c) Upper-middle wages (d) Highest wages

Source: Labour Force Survey. Data are from the 5Q panel, and are not detrended. Data at quarter t give the number of workers who were i) employed at quarter $t-4$ at a job in that weekly earnings quartile, and ii) inactive at date t, expressed as a percentage of total employment in that earnings quartile at time $t-4$. Each figure gives a different quartile of the earnings distribution, computed using the earnings distribution in that quarter of data.

Figure 18: E2I flow by hourly wage quartile during the Great Recession



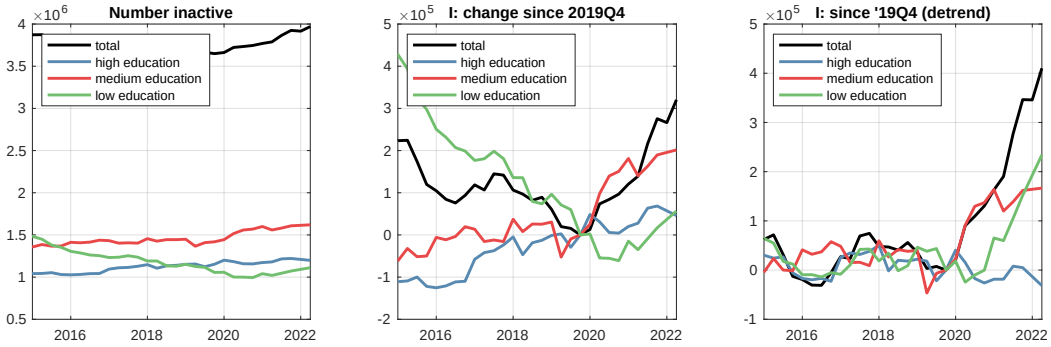
(a) Lowest wages (b) Lower-middle wages (c) Upper-middle wages (d) Highest wages

Source: Labour Force Survey. Data are from the 5Q panel, and are not detrended. Data at quarter t give the number of workers who were i) employed at quarter $t-4$ at a job in that hourly wage quartile, and ii) inactive at date t, expressed as a percentage of total employment in that wage quartile at time $t-4$. Each figure gives a different quartile of the wage distribution, computed using the wage distribution in that quarter of data.

- This contrasts with what happened during the Great Recession, as shown in Figures 17 and 18. There the largest rise in employment to inactivity flow appears to be in the highest wages and earnings (75-100th percentile, panel d). For the lower-middle and upper-middle wage quartiles, the rise is much smaller, if there at all. For the lowest quartile of the wage distribution, the $E2I$ rate was already much higher, and also rise slightly during and after the Great Recession. **Thus the pattern of inactivity in COVID is again different from the Great Recession. During the Great Recession, the highest and lowest earning workers become inactive, while during COVID the rise is broader based, and highest for middle earning and wage workers.**

2.6 Education

Figure 19: Inactivity by education during COVID

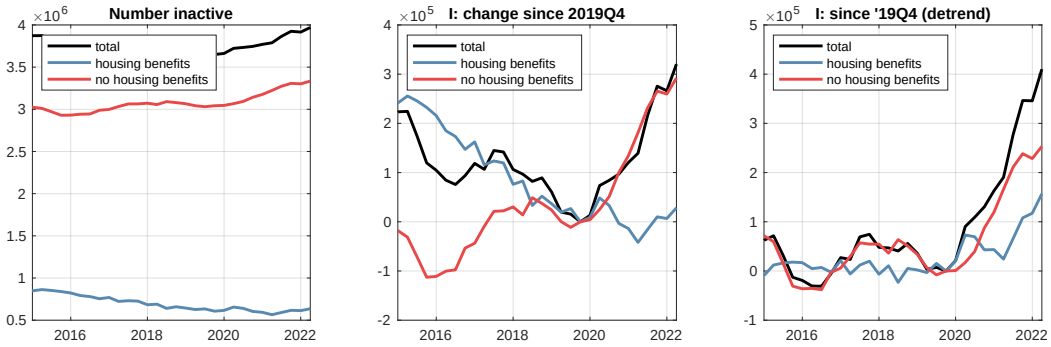


Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends. Note that there is a problem with the education data in 2022Q1 due to a change in the variable definition, and data for that year are interpolated as the average of the values in 2021Q4 and 2022Q2.

- These plots split the inactive stock based on education. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual groups: low, medium, and high education, being GSCE equivalent or below, A-Level equivalent, and university degree and above.
- In the right panel, we see that there has been no detrended rise in inactivity for the highest educated workers, and that all of the rise comes from workers with low or medium education. This backs up our findings from the wage data, that rising over-50s inactivity is highest in lower-middle income workers. However, it is also worth noting that for this age group university attendance was very low, and so most workers had low or medium education levels by this measure. Thus, the rise in inactivity was broadly split among workers with many education levels.

2.7 Whether claiming housing benefits

Figure 20: Inactivity by whether receive housing benefit during COVID

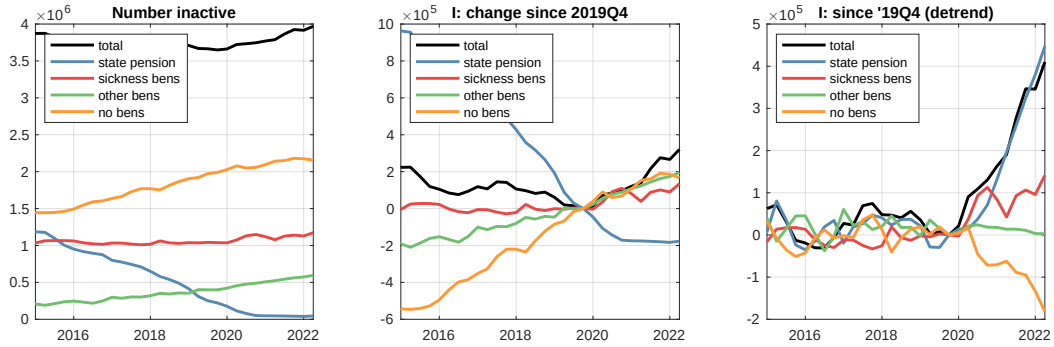


Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends.

- These plots split the inactive stock based on housing benefit receipt. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual groups: those receiving housing benefit, and those not.
- In the right panel, we see that the largest rise in inactivity is for workers who do not receive housing benefit. This backs up our findings from the wage data, that rising over-50s inactivity is highest in lower-middle income workers, but not in the lowest part of the income distribution where housing benefit receipt would be more prevalent.
- However, later in the sample the number of workers who are inactive and receiving housing benefit is starting to rise, and by 2022Q2 it is beginning to approach the rise in the number of inactive workers without housing benefit.

2.8 Benefits

Figure 21: Inactivity by benefit status during COVID

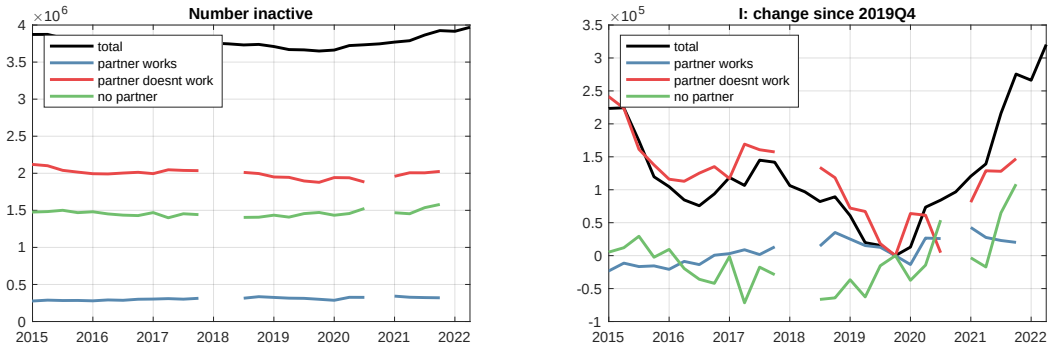


Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends.

- These plots split the inactive stock based on government benefit or pension receipt. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual groups: those receiving the state pension, those receiving sickness benefit, those receiving benefits *excluding* state pension or sickness benefits, and those claiming no benefits or state pension.
- In the right panel, we see that the largest detrended rise in inactivity is for workers who are claiming the state pension. This coincidentally explains essentially all of the rise in inactivity in this age group, and is due to the halt in the rise of the state pension age for women, as we previously discussed. This is unlikely to explain the whole rise in inactivity, which is also due to rising sickness, and so the fact that the blue and black lines overlap is likely a coincidence, and should not be interpreted as causally suggesting that all of the rise in inactivity is due to the changing pension rules.
- At the same time, there is a rise in people claiming sickness benefits, which is likely related to the rise in (mostly men) saying that they are inactive due to sickness. **Around 1/3 of the rise in inactive older workers is coming from inactive workers who are claiming sickness benefits.**
- There is no rise in inactivity from people claiming other government benefits, and a fall in inactivity in people claiming no benefits or pension. This backs up our findings from the wage data, that rising over-50s inactivity is highest in lower-middle (rather than the lowest) income workers, since there is no rise in inactivity in people claiming non-sickness-related benefits, who would tend to be the lowest income group.

2.9 Working partner

Figure 22: Inactivity by whether partner works during COVID

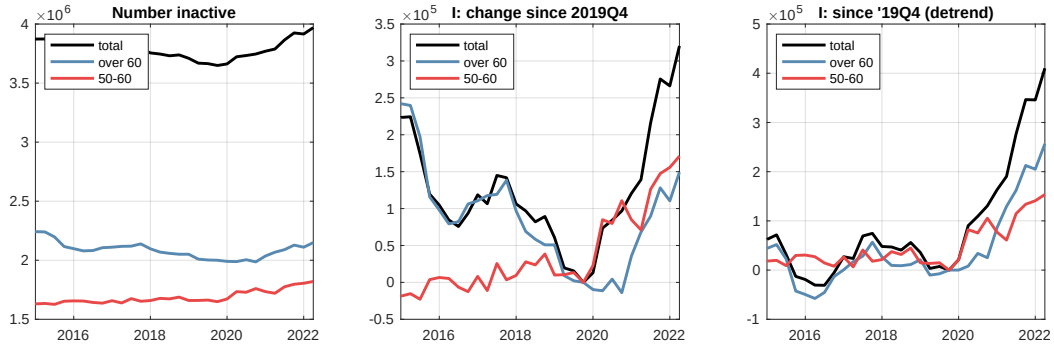


Source: Labour Force Survey. The left panel gives the total number of people in each group. The right panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$.

- These plots split the inactive stock based on relationship status, and whether their spouse is working. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual groups: those who are single (no partner), those with a partner who is working, and those with a partner who is not working (inactive or unemployed).
- To construct this data we match individuals in the LFS based on their household identifier. The data is somewhat speculative, and so we do not emphasise this result as much as the others in this paper. The gaps in the data are for waves of the LFS where we were unable to match individuals, and we performed this analysis only up to 2021Q4 and it has not been updated since.
- In the right panel, we see that there has been no rise in inactivity for those whose partner is working. Instead the rise comes from those who either have no partner, or whose partner is also inactive. This presents more evidence that the rise in inactivity is not coming from those who are using wealth, or alternative income sources, to finance their retirement. If that were the case, we might expect people whose partner is working to retire. Instead, the rise in inactivity is coming from groups who cannot be using a spouse's income to finance their inactivity.

2.10 Over 60

Figure 23: Inactivity by age during COVID



Source: Labour Force Survey. The left panel gives the total number of people in each group. The middle panel gives the values relative to the quarter pre recession, $X(t) - X(2019Q4)$. The right panel does the same, but with all lines detrended with their five year pre-recession trends.

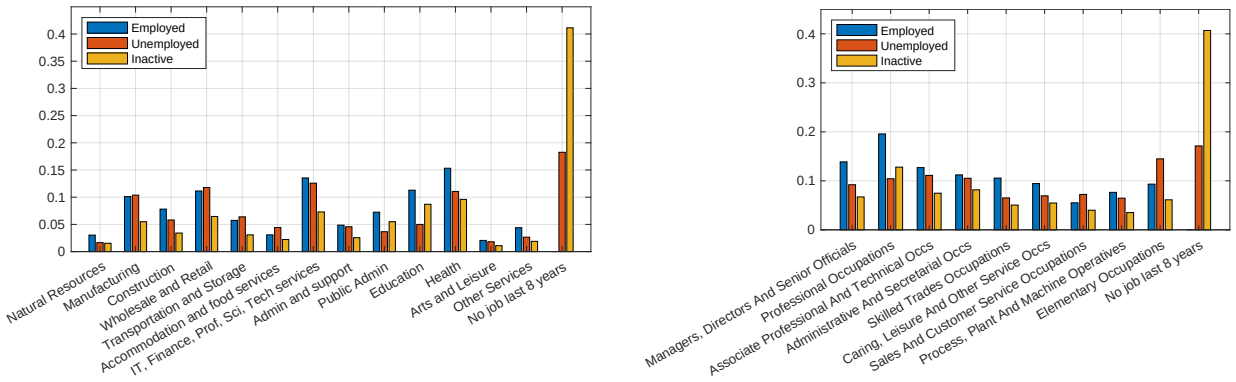
- These plots split the inactive stock based on age. The black lines give the change in the inactivity stock from the start of the recession, and the remaining lines decompose this into the individual groups: those aged 50-60 and those aged 60-65.
- In the right panel, we see that the largest rise in detrended inactivity is for workers aged 60-65, but that there are still large increases in the 50-60 group. This shows that the rise in inactivity is a broad phenomenon not just confined to the oldest workers.

3 Industry and occupation analysis

In this section we provide an analysis of over-50s inactivity by industry and occupation. Here we use questions in the LFS which ask inactive or unemployed workers what industry and occupation their last job was in. This allows us to assign inactive workers to a particular industry and occupation based on their last job. We first analyse what sectors the over-50s work in and became inactive from, and then discuss implications for labour shortages.

3.1 Background: Where do over 50s work?

Figure 24: What fraction of Over 50s worked in each sector in 2019?



(a) By industry

(b) By occupation

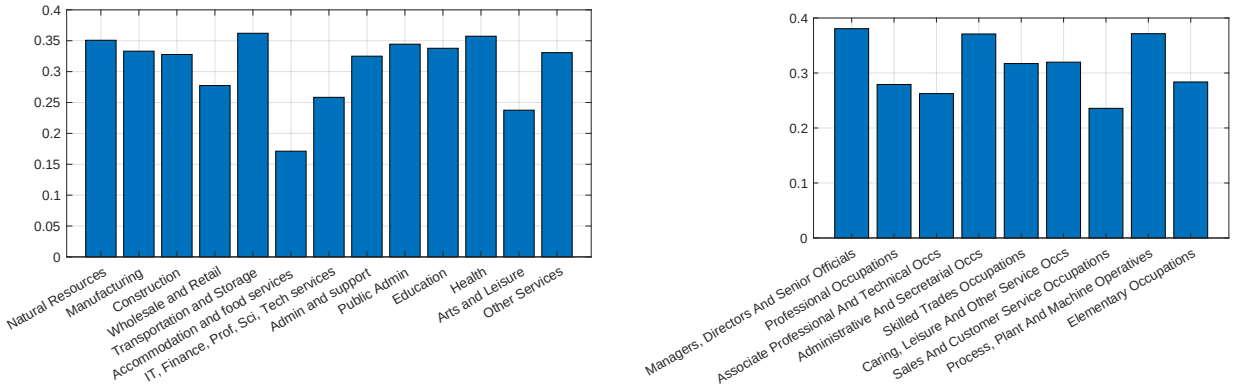
Source: Labour Force Survey. In the left (right) panel, the blue bars give the fraction of all employed over 50 year olds who work in each industry (occupation) in 2019. The red and yellow bars do the same for unemployed and inactive workers. All bars of the same colour sum to one within each plot.

- In panel (a) we plot the distribution of over-50s by industry. The blue bars give the fraction of employed over-50s working in each industry. The red (yellow) line plots the fraction of unemployed (inactive) over-50s whose last job was in each industry. For the unemployed and inactive, the bar "No job last 8 years" additionally denotes workers who report having not worked in the last 8 years, who the LFS does not ask what industry or occupation their last job was in.[4] Panel (b) does the same for occupations.
- What occupations do the over 50s work in? The over 50s are reasonably well split across occupations. The most common occupations are Managers, Professional, and Associate Professional. The least common is Sales and Customer Services.
- What industries do the over 50s work in? There is substantial variation across industries. The most common are Health, High Skill services, Education, Wholesale and Retail, abd Manufacturing. Many are less common, notably Accommodation and Food, and Arts.
- 40% of the over 50s inactive have not worked in last 8 years. 17% of the over 50s unemployed have not worked in last 8 years. The stock of Inactive and Unemployed by last sector tracks size of Employment in each sector reasonably closely.

[4] This line also includes workers with missing or invalid industry or occupation data for any other reason.

3.2 Background: What sectors usually hire over 50s?

Figure 25: What fraction of employees in each sector are aged 50-65?



(a) By industry

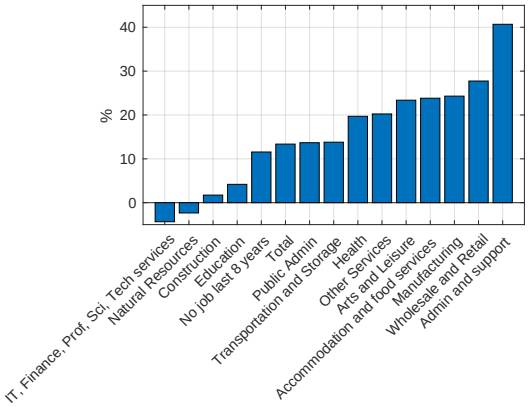
(b) By occupation

Source: Labour Force Survey. In the left (right) panel, each bar gives the fraction of employees in each industry (occupation) who are over 50 years old. Data are from 2019, and bars do not sum to one.

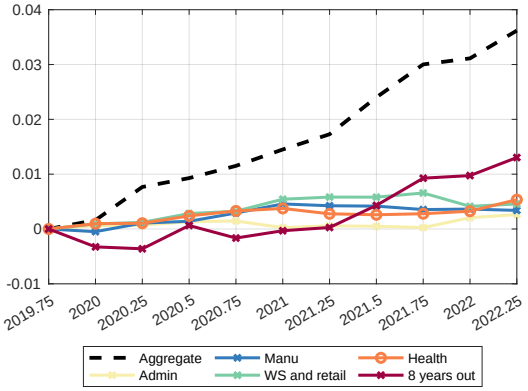
- In the last section we asked what fraction of the over 50s work in each sector. A different question is to ask what fraction of employees in each sector are over 50 years old. These need not align. 50-65 year olds make up around 30% of all employees in 2019, so this is an important age group for aggregate employment. But, there is variation across sectors, which means that changes in the willingness of the over 50s to work might be less important for shortages in some sectors than others.
- For industries, only 17% of employees in the Accommodation and Food industry are aged 50+. High skill services and Arts and (to a lesser extent) Wholesale and Retail also employ relatively few over 50s relative to other age groups.
- For occupations, the over 50s are overweighted in Plant and Machine Operatives, Administrative occupations, and Managers.

3.3 Changes in Inactivity by last Industry / Occupation worked during COVID

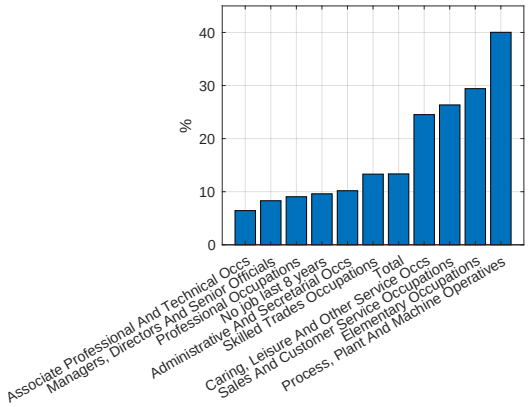
Figure 26: Inactivity rate by industry/occupation: COVID (detrended)



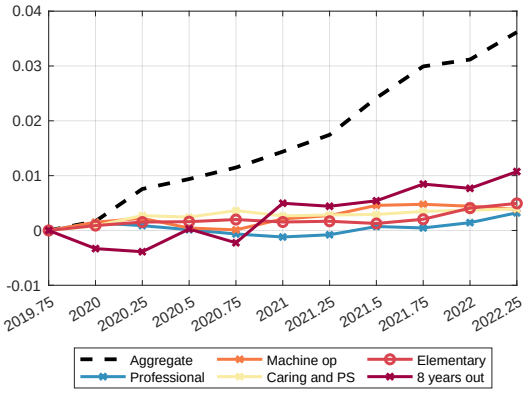
(a) % change in inactivity stock by last industry



(b) Contribution to total Inactivity Rate (industry)



(c) % change in inactivity stock by last occupation



(d) Contribution to total Inactivity Rate (occupation)

Source: Labour Force Survey. All data is detrended with five year pre recession trends. Panel (a) gives the percentage change in the stock of inactive by last reported industry between 2022Q2 and 2019Q4. Panel (c) does the same for last occupation. Panel (b) plots the change in the overall inactivity rate relative to 2019Q4 ($X(t) - X(2019Q4)$) as the dashed line. It then decomposes the change into its sources by industry, plotting the five largest contributors (the coloured lines would sum up to give the dashed line, were all industries plotted). Panel (d) does the same for occupations.

- In the left panels of the above figure, we plot the percentage change in the number of inactive over-50s workers by previous industry or occupation. For example, there has been a 40% rise in the number of inactive workers whose last job was in the Administration and Support industry, and a 27% rise in the Wholesale and Retail between 2019Q4 and 2022Q2 (relative to trend). For the whole economy, there has been a 12.5% rise in the stock of inactive over-50s workers.
- Since some sectors might have dramatic percentage rises in inactivity but be small, they could have less of an impact on the total inactivity stock. For this reason, in the right panels we plot the change in the aggregate inactivity rate (dashed black, 3.7pp increase) from 2019Q4, as well as the contributions of the five sectors which contribute most to the increase.

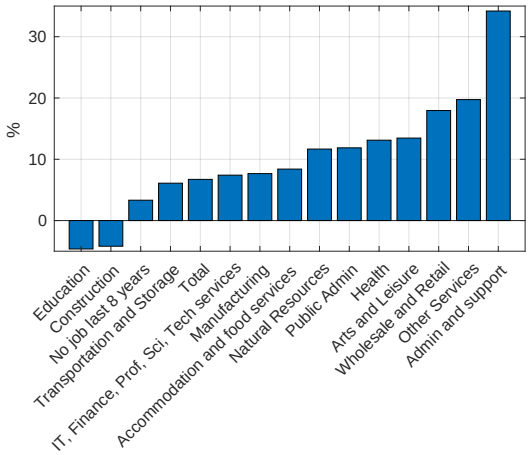
- Broad picture:
  - The rise in inactivity is relatively broad based, with most industries and occupations seeing large increases in inactivity in line with the national average increase of 12.5%. That is, this is not a problem originating only in one or two categories of job.
  - Nonetheless, there are a few industries and occupations which have had severe rises in inactivity, much above the average. These play an outsize role in driving the inactivity rise, and so are important for potential targeting.
- Inactivity by industry during COVID:
  - Panel (a) shows that the largest percentage rises in inactivity by last sector of work come from Administration and Support (40%) Wholesale and Retail (27%), Manufacturing (24%), and Accommodation and Food Services (23%).
  - Accounting for the size of each industry's inactivity stock, just four industries can explain 44% of the aggregate rise in inactivity. This is shown in panel (b), and the industries are Health, Wholesale and Retail, Manufacturing, and Administration and Support.
  - A further 36% is explained by the increase in the stock of inactive workers who have not worked for 8 years, and hence have no last industry assigned to them. The increase in this stock must be due to reduced outflows from long-term inactivity into employment, unemployment, or leaving the sample. This means that the remaining industries collectively directly account for only around 20% of the rise in inactivity.[5]
- Inactivity by occupation during COVID:
  - Panel (c) shows that the largest percentage rises in inactivity by last occupation of work come from Process Plant and Machine Operatives (40%), Elementary occupations (29%), Sales and Customer Services (26%), and Caring, Leisure and customer services (24%).
  - Accounting for the size of each occupation's inactivity stock, just four occupations can explain 44% of the aggregate rise in inactivity. This is shown in panel (d), and the occupations are Elementary occupations, Process Plant and Machine Operatives, Caring Leisure and Personal services, and Professional occupations. As a further 30% is explained by the increase in the stock of inactive workers who have not worked for 8 years, and hence have no last occupation assigned to them, the remaining occupations collectively account for only around 25% of the rise in inactivity.[6]
- Conclusions:
  - Is the rise in inactivity coming from all areas of the economy? Yes and no. A few key industries and occupations are driving more than 40% of the total rise in inactivity. At the same time, most other sectors are seeing smaller rises in inactivity.
  - Interestingly, the industries and occupations contributing the most (such as Wholesale and Retail, Manufacturing, Elementary, Machine Operatives) tend to be on the lower paid end of the spectrum. This agrees with our demographics results, where we found that the rise in

[5] They can also indirectly contribute more as a cause of the reduced outflow from long term inactivity. In the five years pre-pandemic, over-50s inactivity was declining across almost all industries. The largest contributors were Wholesale and Retail, Education, Manufacturing, Health, and Construction.

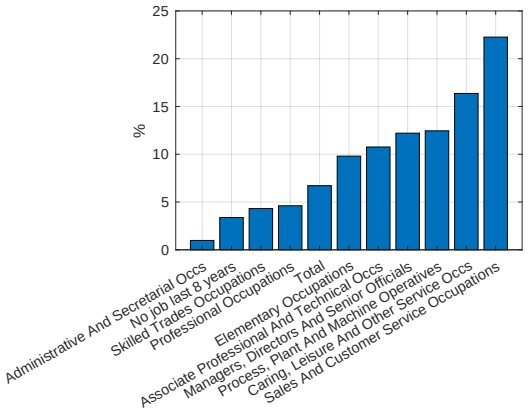
[6] They can also indirectly contribute more as a cause of the reduced outflow from long term inactivity. In the five years pre-pandemic, over-50s inactivity was declining across almost all occupations. The largest contributors were Elementary, Machine Operatives, and Professional.

inactivity is highest for the lower-middle income group. The exception is the Professional occupation, which is highly paid, and therefore likely captures the richer older workers who are choosing to retire early.

Figure 27: Inactivity rate by industry/occupation: COVID (not detrended)



(a) % change in inactivity stock by last industry



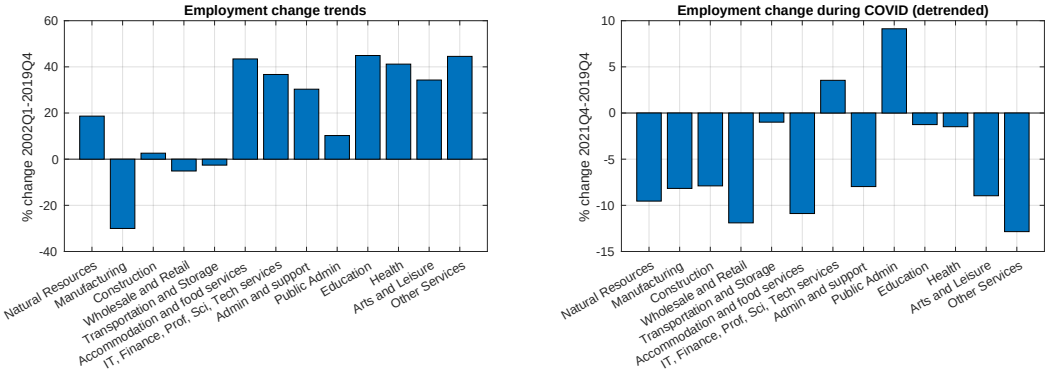
(b) % change in inactivity stock by last occupation

Source: Labour Force Survey. Data is not detrended. Panel (a) gives the percentage change in the stock of inactive by last reported industry between 2022Q2 and 2019Q4. Panel (b) does the same for last occupation.

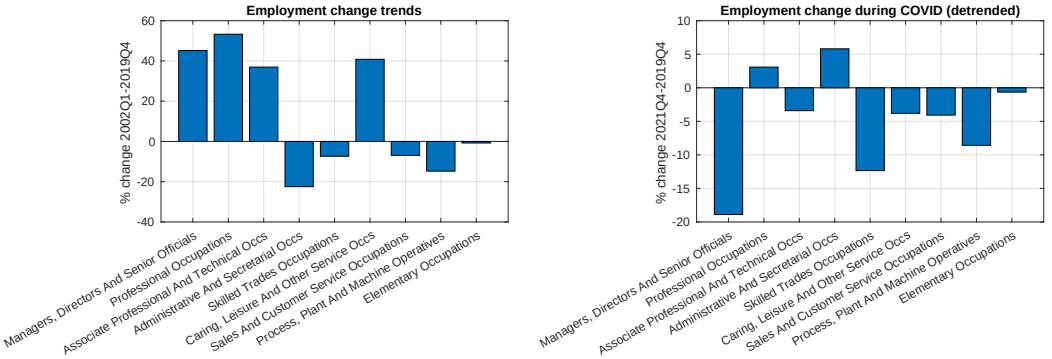
- For completeness, in Figure 27 we repeat the previous plot, but without detrending the inactivity stocks with their pre-recession trends. The results are similar in broad pattern, with some changes in the numbers and exactly which industries and occupations are the worst hit.

3.4 Why is inactivity responding in these sectors?

Figure 28: Employment trends and COVID impacts by sector (all age groups)



(a) Industries



(b) Occupations

Source: Labour Force Survey. Left panels give the change in employment in each industry and occupation in the decades pre-COVID (from 2002Q1 to 2019Q4). The right panels give the employment changes during COVID, relative to the five year pre-recession trend.

- Given that some industries and occupations contribute a large amount to the rise in over-50s inactivity, an interesting question is why these specific industries have seen such a large rise in inactivity. In this section we provide a discussion of potential causes.

- In the figure above, we plot the long term trend and change during COVID for each sector. The left panels give the percentage change in employment in the roughly 20 years pre-pandemic, and the right panels give the change in employment during the pandemic (relative to trend). This yields a tentative cause: The top 4 industries and occupations with particularly high rises in inactivity have two things in common. Firstly, they are mostly all in long run decline, with employment declining over the last 20 years. Secondly, they also were hit during COVID, with further employment declines, sometimes very severe. This suggests that workers from these sectors might have chosen to become inactive because their industry/occupation was in long run decline, and then they lost their job during the pandemic. The pandemic might have represented a final straw for them, where they chose to become inactive rather than look for a job again in a sector they know is in decline. Given that these workers are older, they might not find it optimal to aim to reallocate to a new sector, as the costs of transitioning or retraining might not be worth

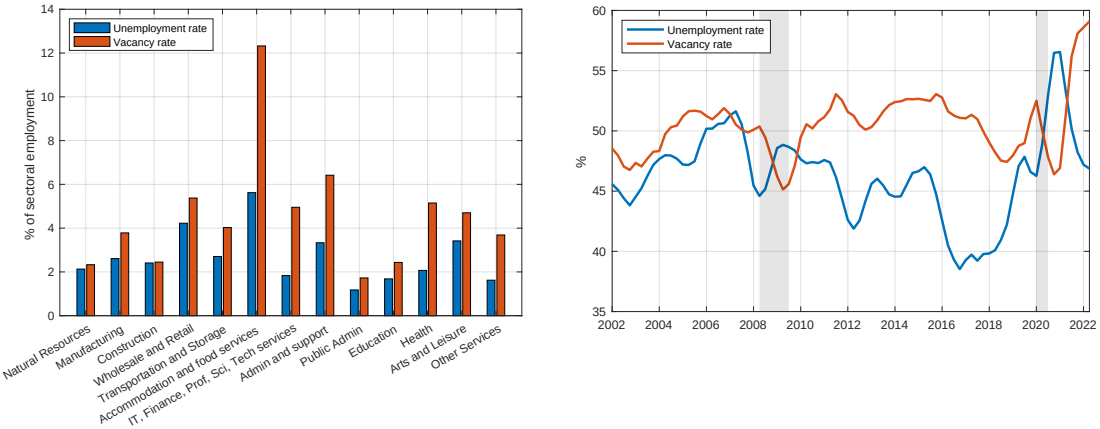
it as they approach retirement.[7]

- An exception to this is the Professional occupation, which are one of the top four contributors to rising inactivity. This is a highly paid occupation, which was in long run growth and grew even further during COVID. It is possible that this occupation represents the higher paid workers who chose to retire early after the pandemic because they are sufficiently rich to afford early retirement.
- Another potential explanation is that the industries and occupations with the highest rises in inactivity are those where it is hard to socially distance at work. For example, the industries Health, or Wholesale and Retail. Given that we are looking at older workers, it is possible that workers would rather be inactive than take the perceived risk to their health that comes from working in these sectors.

[7] This also helps rationalise a finding from the flows data: In the flows data, half of the E2I flow is people who were fired. But in the stock data all the rise in inactivity is people who say they are not looking for a job. It could be that these workers are not looking for a job because they were fired / made redundant from a declining sector, where they do not believe it is worth looking for work any more.

3.5 Shortage analysis by industry: background

Figure 29: Unemployment and vacancy rates by industry



(a) U and V rates: 2022Q2 (b) Across-industry coefficient of variation

The left panel plots the vacancy rate (vacancies in that industry divided by employment of that industry) and unemployment rate (number of unemployed workers whose last job was in that industry divided by employment in that industry) for each industry in 2022Q2. The right panel plots the coefficient of variation (standard deviation divided by mean) of the vacancy rate and unemployment rate by industry at each date (with 5Q moving average). Source: ONS VACS02 dataset and LFS.

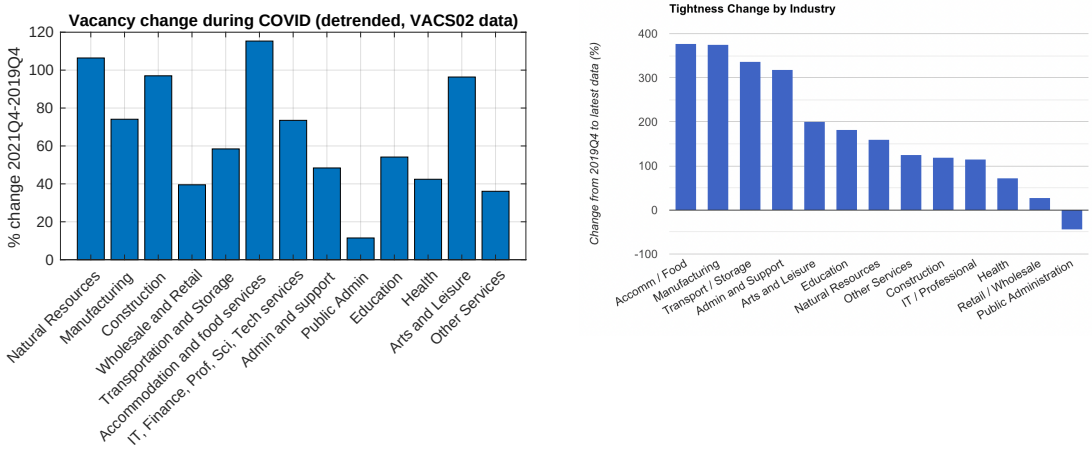
- It is well known that the UK economy is facing severe labour shortages following the pandemic, with aggregate vacancies at an all time high while unemployment is low. In our work, we show that a deeper issue is not just that we lack unemployed workers to fill these vacancies, but *where* workers want to work is misaligned from where firms are posting vacancies.

- For more details, see our project website, `covidjobsresearch.co.uk`. We present two basic facts here. Firstly, in the left panel above, we plot the vacancy rate and unemployment rate by industry in the latest date, 2022Q2 (this is for the whole economy, not just the over 50s). We see that where the vacancies are and where the unemployed workers last worked is not perfectly aligned. For example, Accommodation and Food, Administration and Support, and Health all have many more vacancies than unemployed workers whose last job was in those sectors.

- In the right panel we plot the coefficient of variation across industries for the unemployment and vacancy rates at each date. We see that the coefficient of variation for vacancies has been relatively stable over the years. Two episodes are important to highlight. The Great Recession (2008-2011) and the Pandemic (2020-2022). During the former the vacancy rates across industries became less dispersed, while in the latter have become more dispersed. This highlights that even though vacancy growth can be seen across a wide range of industries, some industries are posting much more vacancies than others. The coefficient of variation for unemployment instead trended downward since the Great Recession and spiked during the Pandemic. The latter can be attributed to the differentials in layoff rates and unequal recoveries across industries. However, dispersion appears to be falling, so that **in 2022Q2 the variation in unemployment rates across industries is back to its historical average level, while the variation of vacancy rates across industries is at an all time high.**

3.6 Shortage analysis by industry: role of the over 50s

Figure 30: Vacancies and tightness by industry



(a) By industry

(b) By occupation

The left panel plots the change in the stock of posted vacancies in each industry from 2019Q4 to 2022Q2, relative to trend (Source: ONS VACS02 dataset). The right panel plots the change in market tightness from 2019Q4 to 2022Q2 in each industry, with details available at covidjobsresearch.co.uk.

- We conclude this section with a discussion of how the over-50s have contributed to the rising labour shortages in the economy. The economy since the pandemic has seen a massive rise in vacancies. In the above figure, the left panel shows the detrended change in the number of open vacancies by sector from 2019Q4 to 2022Q2, from the ONS VACS02 dataset. Vacancies in 2022Q2 are higher than before COVID in all industries, with over half of industries seeing vacancies rise by 50% or more.

- This is also reflected in an increase in difficulty filling vacancies, which we measure via our new research and online tool, showcased at covidjobsresearch.co.uk. This gives us a measure of labour market tightness in each industry, with higher tightness meaning it is harder for firms to fill vacancies. We plot the change in tightness from 2019Q4 to the current data in the right panel above, with this figure also available online at our website. Using this measure, the sectors with the largest increases in tightness, and hence shortages, are Accommodation and Food, Manufacturing, Transportation and Storage, and Administration and Support.

- Our analysis above allows us to investigate which sectors would be helped the most by any policies which successfully encourage the over-50s back into work. The good news is that older workers tend to work in all industries of the economy, as shown in Figure 25. The exceptions are the Accommodation and Food and Arts and Leisure sectors, which tend to fewer older workers. Hence, older workers are an important input into the labour force of most industries, and getting older workers back to work could help with labour shortages in many areas of the economy.

- Getting older workers back to work would likely not directly help the Accommodation and Food sector as much, since this sector tends to employ younger workers. However, it might indirectly help, as the extra labour supply from older workers would free up younger workers to work in Accommodation and Food.

- However, convincing older workers to return from inactivity to the Manufacturing or Administration and Support industries could go a long way to directly solving shortages in these sectors. This is because both sectors employ plenty of older workers and saw large increases in older workers quitting the labour force post-pandemic. There are likely many older inactive workers who recently worked in both sectors, and would be good fits for filling jobs in those sectors, could they be convinced to return to work.