BANK OF ENGLAND

Speech

Supply and demand during and after the pandemic

Speech given by

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As well as reducing economic activity sharply over the last year, the pandemic has also had large effects on the economy's potential output. [1] In this speech, I want to discuss some issues in measuring potential output and the amount of spare capacity in the economy at present, and some risks around the outlook for supply and demand.[2] I will then turn to some considerations for monetary policy. I will make several main points.

- The pandemic and associated restrictions have significantly reduced potential output over recent quarters, but the majority of these effects are likely to be fairly temporary.

- I put more weight on the risk that the central forecast in the February MPR overstated the temporary drop in potential output over the last year (and hence understated the extent of spare capacity in the economy at present) and was overly pessimistic on the path for potential output in the year ahead.

- In coming months, swings in energy prices are likely to lift CPI inflation, while the easing of restrictions is likely to boost economic activity. With potential output also likely to be recovering, increases in activity and headline inflation by themselves may not signal much either way as to whether spare capacity is rising or falling.

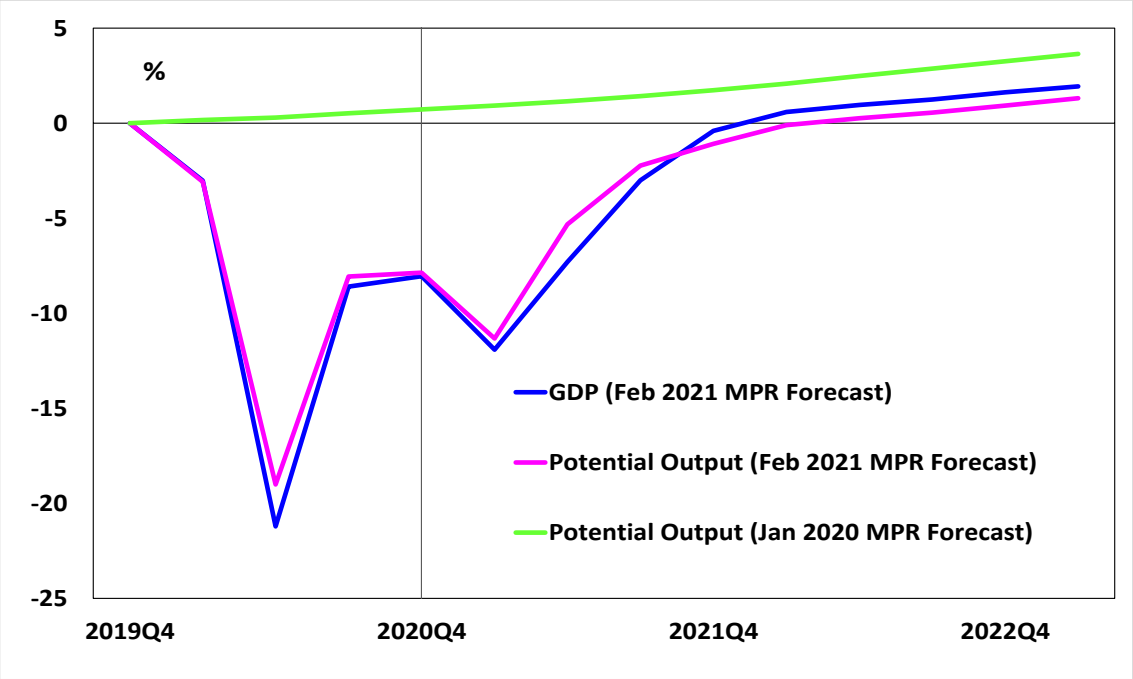
- The recent level of activity is well below the likely post-pandemic path of potential output, in other words its efficient level once temporary adverse effects on potential output of the pandemic fade.[3]

- In order for the output gap to close sustainably and return inflation to target on a sustained basis, activity needs to close the shortfall with post-pandemic potential output.[4] In my view, the MPR forecast for unemployment three years ahead (4½%) is likely to be a useful benchmark in judging the extent to which this has been achieved.

Let's start with the economy's current position. The pandemic and associated restrictions have caused economic activity to fall sharply, and the level of real GDP in Q4-2020 was 8% down from Q4-2019. GDP in Q1 this year probably has fallen further below the Q4-19 level. These declines are much bigger than in any recession of recent decades. But the pandemic (and associated restrictions) have also reduced potential output. Some parts of the economy have been shut or restricted and, in many others, workers and firms have been unable to operate as normal. In the February MPR, the MPC judged that the recent drop in GDP has been largely matched by a drop in potential GDP, and hence would not put commensurate downward pressure on inflation.

[1] See Bailey (2021) and Haldane (2021). Potential output can be loosely defined as the level of output consistent with keeping inflation on target over time.
[2] The MPC publishes a full assessment of the economic outlook four times per year in the Monetary Policy Report. This speech uses the February MPR (the most recent) as the reference point in discussing issues relating to potential output and spare capacity. The next MPR will be published in early May.
[3] See Gali (2015).
[4] See Vlieghe (2020).

Figure 1. UK – Change in Real GDP and Potential GDP since Q4-2019



Sources: ONS and Bank of England.

Estimates of potential GDP are inherently uncertain. In normal times (eg pre-pandemic), potential output and its growth rate are often estimated from a production function approach, using trends in the growth of the workforce, capital stock and total factor productivity. Or they can be derived as the residual from output gap estimates and the level of GDP.[5] The resultant estimates for potential GDP growth usually do not change much from year to year, and are usually not affected much by short-term swings in economic activity. However, the pandemic has affected potential output through various channels that may be hard to model using those traditional approaches. The February MPR includes a range of estimated effects.[6]

- **Furlough**. The approach in the MPR is to treat furloughed workers as largely removed from the workforce, except to the extent that they are actively looking for another job (and hence pushing down on pay growth).[7] Hence, with this approach, a rise in furloughed workers largely represents a temporary drop in potential output via reduced labour supply, rather than spare capacity.

- **Public sector measurement**. The output of government services that are consumed by individuals is often measured using volume indicators, such as the number of hospital operations and the number of school pupils taught. During the last year, and especially during the first lockdown, a lot of

[5] There are various methods of deriving output gap estimates, including filters and bottom-up estimates based on measures of capacity use in firms, the labour market and so forth. See Tenreyro (2019).
[6] The November 2020 MPR and Ramsden (2020) include extensive discussion of these issues.
[7] In the LFS, the share of furloughed workers who were looking for another job was 5% in Q2, rising to 10% in Q3 – the latest data at the time of the February MPR.

routine healthcare was postponed. Schools have been temporarily closed during some of the lockdowns and have recently reopened. All this affects measured real government output. Provided schools stay open as planned, education output is likely to recover significantly in March and in Q2 this year (although it may continue to be affected by quarantine and self-isolation). In the MPR, these swings are treated as potential GDP and do not affect the output gap.

- **Temporary effects on productivity**. It is likely that the pandemic (and associated restrictions) has affected productivity through various channels, some positive and some negative. The MPR assumes that people newly working from home because of government restrictions and social distancing are materially less productive than usual. Moreover, there has been some Covid-related disruption to trade (especially in early 2020), and additional Covid-related costs and workplace inefficiencies which may also have had some temporary adverse effects on productivity. Against this, there is a large positive composition effect on aggregate productivity – akin to a "batting average" effect – because the drop in hours worked has been relatively concentrated in sectors with low average productivity levels. In the MPR, these effects largely offset each other in Q4 last year.

- **Temporary effects on structural unemployment**. Increases in medium- and (especially) long-term unemployment may put upward pressure on the NAIRU (the short-term equilibrium jobless rate) and hence reduce potential output.[8] Thus far, long-term unemployment has risen only slightly, but it is likely to rise further as the overall jobless rate increases in coming quarters, and then decline later than the overall jobless rate (so that the long-term unemployed will account for a rising share of total unemployment). In the MPR, this significantly reduces potential GDP for a period late this year and in 2022. But this effect is likely to be temporary. Unless the jobless rate subsequently rises again, medium- and long-term unemployment will gradually fall during next year, such that the NAIRU declines again. In the MPR forecast, this effect is largely unwound at a two-year horizon.

- **Longer term effects on productivity**. The drop in business investment during the pandemic, and some future drag on investment from wider credit spreads, are likely to reduce innovation and the capital stock (relative to pre-pandemic expectations). In addition, those who have been unemployed or furloughed during the pandemic are assumed to suffer some loss of human capital compared to those in continuous work.

- **Longer term effects on structural unemployment**. Changes in the pattern of demand in the economy are likely to lead to some reallocation of resources that may increase labour market mismatch, albeit much less than in the 1980s. In the MPR, this adds slightly to the structural unemployment rate over time.

[8] See pages 17-29 of Inflation Report of February 2018.

Based on this, the February MPR estimated that potential GDP in Q4-2020 was 7-8% below the Q4-2019 level and (given the further rise in restrictions and furlough) that potential GDP in Q1 would be about 11% down from Q4-19.[9] The MPR forecast implies that these adverse effects on potential GDP are likely to be largely temporary. Some of the adverse effects should diminish quite quickly (eg furlough, disruptions to trade, effects on health and education output). Others were expected to fade over the next year or two as the economy recovers (eg WFH effects on productivity, upward pressure on NAIRU from medium- and long-term unemployment).[10] Others were judged likely to increase over the coming year and persist for longer (eg labour market mismatch, lower capital stock). In the MPR, these persistent effects reduce potential output by 1¾% two or three years ahead compared to the pre-pandemic path.

Given this estimated path for potential output, the February MPR estimated the output gap (ie gap between GDP and potential output) was ½%-¾% of GDP in Q4-2020. With GDP in Q1-2021 forecast in the February MPR to be 12% down from Q4-2019, the MPR projected the output gap in Q1 this year would be about 1% of potential GDP. That output gap, while material, is actually not much more spare capacity than the estimated pre-pandemic level of Q4-19 (¼%-½% of GDP).

Table 1. UK – February 2021 MPR Projections

	Projections			
	Q1-2021	Q1-2022	Q1-2023	Q1-2024
GDP growth	-9.2	14.2	1.3	1.3
CPI inflation	0.8	2.1	2.1	2.0
LFS unemployment rate	5.5	5.7	5.0	4.5
Excess supply/Excess demand	-1	+¼	+¼	0
Bank Rate (market path)	0.1	-0.1	-0.1	0.0

Note: modal projections for GDP, CPI inflation, LFS unemployment and excess supply/excess demand. GDP projection is four quarter growth. CPI inflation projection is the four-quarter inflation rate. The path for Bank Rate is the market path at the time, which is the usual conditioning assumption for the MPC's forecasts. Source: Bank of England.

The February MPR assumed that restrictions would gradually ease between end-March and end-September, which would lead to a recovery in activity, alongside a boost from the substantial monetary and fiscal policy stimulus in place at the time. In that forecast, GDP and potential output started to recover in Q2, and the recovery would be strong enough to close the output gap – and indeed to lift the economy slightly into excess demand – late this year. In the central forecast, the jobless rate was projected to rise over the summer as the furlough scheme ends, but fall back to about 5¾% in Q1 2022 and to about 4½% three years

[9] The MPR forecast for potential GDP also includes estimates for effects of Brexit, both temporary and persistent. These did not change much over the period, other than the assumption of greater trade frictions in early 2021, which lower actual GDP and potential GDP by 1% in that quarter. This effect reverses subsequently.

[10] The adverse effect on productivity from those newly required to work from home was assumed to fade by the end of this year, as effects from government restrictions and social distancing end. This could be consistent with either less WFH or a lower impact on productivity from WFH. The effect on the equilibrium unemployment rate from higher medium- and long-term unemployment was projected to largely fade at a two-year horizon.

ahead.[11] In that central forecast, swings in energy prices cause headline CPI inflation to rise close to the 2% target in Q2 this year. Thereafter, the closing of the output gap would lift core inflation such that headline inflation stayed around the 2% target next year and subsequently.

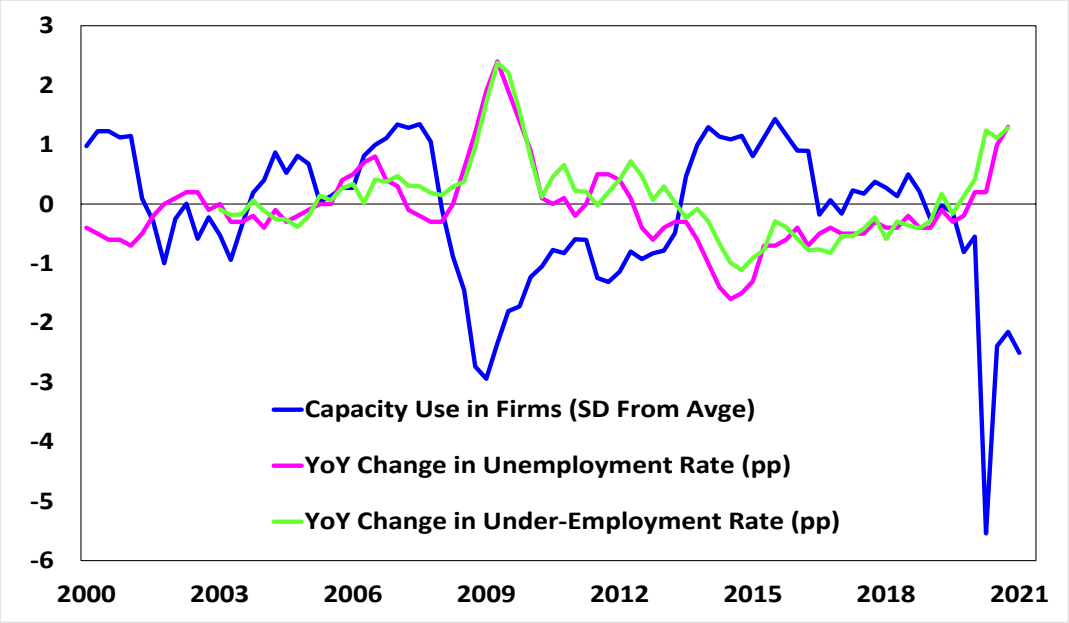
Risks Around the Path and Outlook for Potential Output

The concept that the pandemic and associated restrictions have affected potential GDP (as well as actual GDP) is reasonable in my view. However, the potential GDP estimates in the MPR have large margins of error. This is in part because each component is measured with some uncertainty, and the channels included in the MPR may not cover all the supply-side effects of the pandemic. By varying slightly the estimates, it is not hard to produce potential output estimates that differ by several percentage points of GDP. With actual GDP currently also measured with considerable uncertainty, the resultant output gap estimates are likely to be very uncertain indeed.

For myself, I find it hard to reconcile the top-down estimates that the output gap is modest and little changed over the last year with a **range of other indicators which suggest that spare capacity in the economy has risen markedly over the last year**. For example, since Q4-2019, the jobless rate has risen by slightly more than 1pp (from 3.8% to 5.0%), while under-employment has also risen on a range of measures.[12] At the same time, business surveys suggest that capacity use in firms (weighted across manufacturing and services) is clearly below average. All this is consistent with a much greater rise (and a higher level) of spare capacity than implied by the estimate in the February MPR.[13]

[11] Since the MPR, the Budget 2021 included measures that will affect activity, potential output and unemployment in the near-term and over the three-year forecast period. The MPC will consider the effects of these measures in the May MPR.
[12] Various measures of under-employment – including part-time workers who cannot find a full time job, temporary workers who cannot find a permanent job, people outside the workforce who would like to work, and people who would like to work more hours (including among non-furloughed staff) – have all risen since Q4-2019.
[13] As an illustration, a 1.2pp rise in the jobless rate would, using an Okun style relation, normally be consistent with a rise in the output gap of roughly 2½% of potential GDP. The implied output gap would be greater if, as in the February MPR, we also regard part of those on furlough as effectively unemployed. The OBR's output gap estimate points to less spare capacity than the February MPR early this year but more spare capacity late this year. The OECD and IMF estimates also point to higher spare capacity (but are a bit less timely).

Figure 2. UK – Guides to Spare Capacity in the Economy

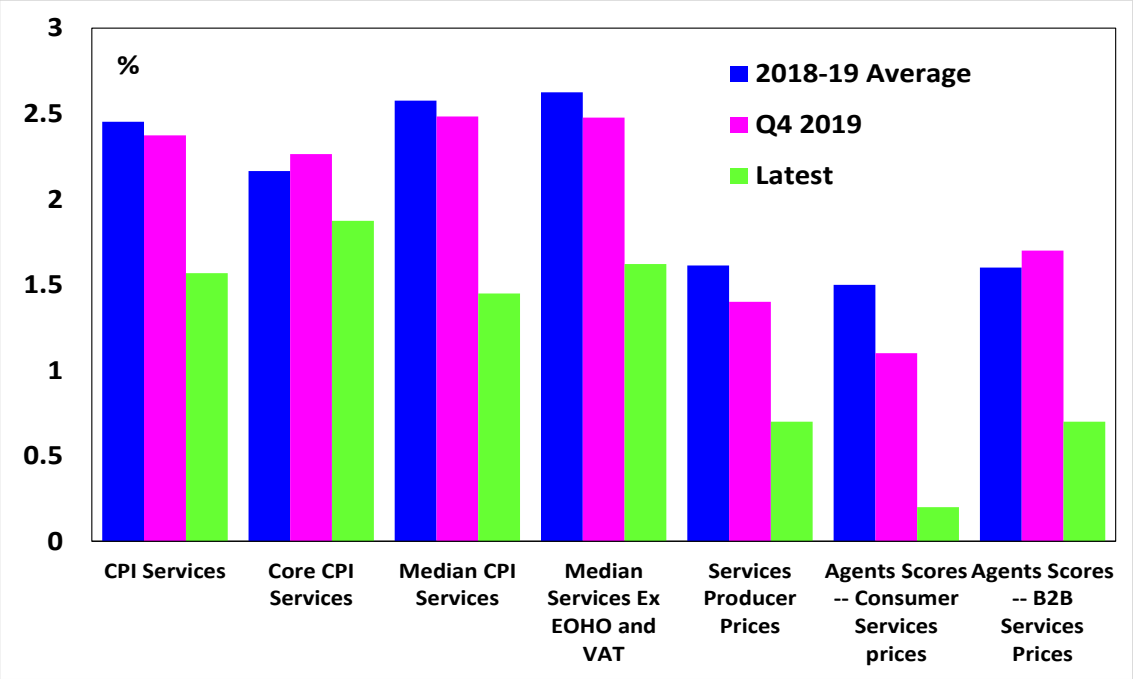


Note: Capacity use in firms is weighted across manufacturing, services and (where available) the retail sector. The series is an average of surveys from the CBI, British Chambers of Commerce, BoE Agents and Markit PMI. An increase in the pink and green lines implies a rise in spare capacity, as does a drop in the blue line. Sources: IHS Markit/CIPS, CBI, BCC, ONS and Bank of England.

It is hard to disentangle clear signals of spare capacity from recent price and cost data. This is partly because of lags.[14] It is also because some of the data are more noisy and uncertain than usual at present.[15] In addition, price data may currently be affected by various temporary factors (eg changes in energy prices, taxes, Covid-related health costs), while both prices and pay may be being affected by shifts in the composition of activity.[16] Nevertheless, there are hints of a material rise in spare capacity over the last year. For example, various measures suggest that services inflation, which tends to respond relatively closely to changes in the output gap, has slowed compared to Q4-2019 and compared to the 2018-19 average (a period in which the MPC judge the economy had a modest output gap of about ½% of GDP on average).

[14] BoE staff estimates suggest that a rise in the output gap of 1% of potential GDP has no significant effect on annual CPI inflation in the next quarter, reduces inflation by 0.2pp after three quarters and by 0.4pp after five quarters.
[15] For example, in February, the share of the CPI basket unavailable for collection was 10.7%, up from 3.9% in December.
[16] See Broadbent (2021). Slaughter (2021) highlights the importance of composition effects on recent data for pay growth.

Figure 3. UK – Measures of Services Sector Inflation



Note: Core CPI services excludes airfares, package holidays, education and the effects of VAT changes. The second median CPI services measure excludes the effects of the Eat Out to Help Out Scheme as well as changes in VAT. The Agents scores are not percentages but ordinal scores based on a range from -5 to +5; a score of 1 is stronger than 0 (no change) but weaker than 2 (average growth rate for that variable). The latest Agents scores are for the three months up to mid-February compared with the same period a year ago. The latest figures are Q4-2020 for services producer prices and the three months ended February 2021 for the CPI series. Sources: ONS and Bank of England.

So what is going on?

There are some measurement issues around the LFS at present. But, in my view, it is unlikely that the signals from these capacity use guides are all wrong.[17] In theory, it is possible that GDP really has fallen more than shown by the ONS data. But I think the most likely outcome is that potential output over the last year has not fallen as much as the estimate in the February MPR. There are several possible factors that could explain this.

One issue is that, while the pandemic and its side effects have probably hit potential output through some channels, they have also **prompted technological gains and accelerated the use of existing technologies in ways that have been (and will probably continue to be) positive for potential output**.[18] The Banks' Agents report that the shutdown or forced adjustment of many processes in response to Covid has enabled firms to reassess their efficiency, and to a greater extent than during the financial crisis and recession of 2008-09.

[17] If anything, the LFS data may understate the actual rise in unemployment, given that other indicators suggest greater declines in employment than the LFS data, and that the LFS employment data include a substantial number of people who say they are in work, but are working no hours and receiving no pay.
[18] See Haldane (2020b).

An example is the **shift to digital**. The DMP survey suggests that, across a wide range of businesses, the proportion of total sales that were delivered online rose from 46% in 2019 to 62% in Q1-2021. Over the long term (ie 2022 and beyond), firms expect more half of total sales (53%) to be delivered online, an increase of 7pp on 2019.[19]

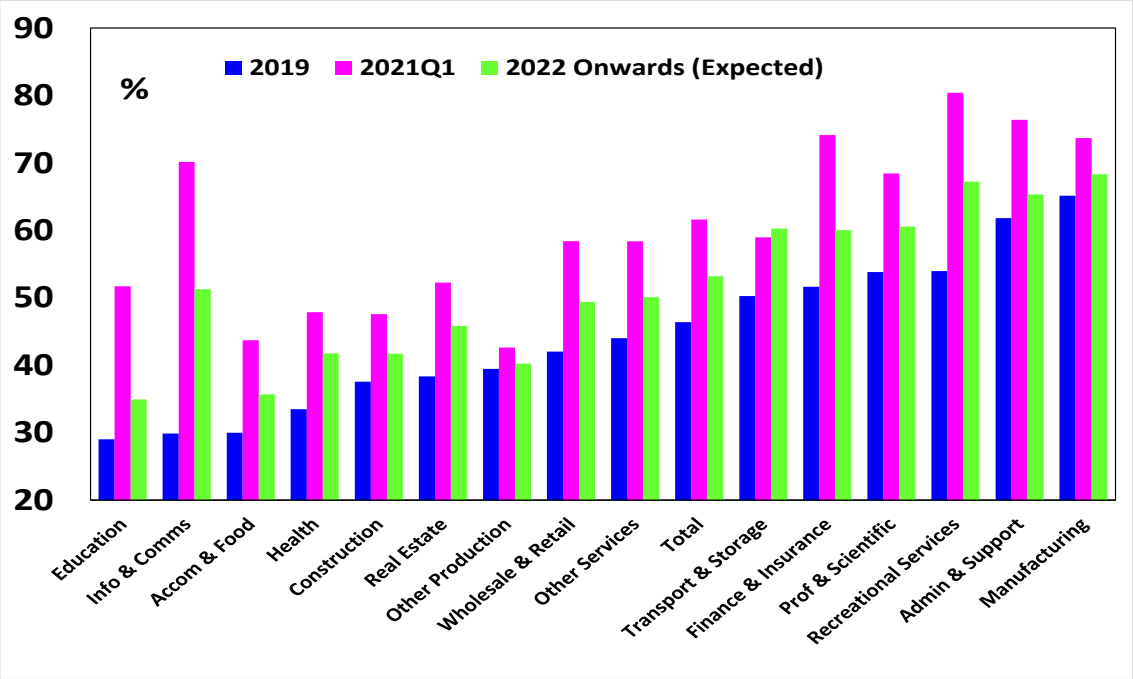
The retail sector – which had already been seeing relatively high productivity growth in the couple of years before the pandemic – has been at the forefront of this shift to digital.[20] With the switch to online sales, productivity (measured by GVA per hour) in the retail sector rose by 20% in the first three quarters of last year, the biggest rise since data began more than 20 years ago and indeed a bigger gain than over the prior ten years combined (the rise from Q4-2009 to Q4-2019 was 12%). Some of this may reflect a composition effect from the forced closure of non-essential stores, and may partly reverse as non-essential stores reopen. But, provided the share of online sales remains well above pre-pandemic levels, some of these productivity gains will probably persist. The shift to online shopping is also likely to promote greater price transparency and reduce barriers to entry (and expansion) among small retailers, hence increasing competitive pressures.[21] Another example of the impact of this shift to digital may be that productivity in office and administrative services in Q3 last year rose by more than 20% YoY. Likewise, the wider use of video calls and reduced business travel is likely to generate substantial time savings.

The effects of **working from home** (WFH) on potential output during the pandemic also may turn out to be less one-sided than assumed in the February MPR. Moreover, a persistent increase in WFH (from pre-pandemic levels) seems likely, and may well actually support potential output over time.

The DMP survey suggests that remote working only accounted for around 8% of total hours worked in 2019 (and 13.5% of employees were fully or partly remote working). With the Covid pandemic and mandatory "stay-at-home" policies, the share of hours accounted for by remote working rose to 43% in Q1-2021, with 49% of employees fully or partly remote working. It is likely that compulsory WFH on this scale has hurt productivity for some firms, for example because the lack of face to face contact makes close collaboration and knowledge sharing with colleagues more difficult, which may hinder innovation.[22]

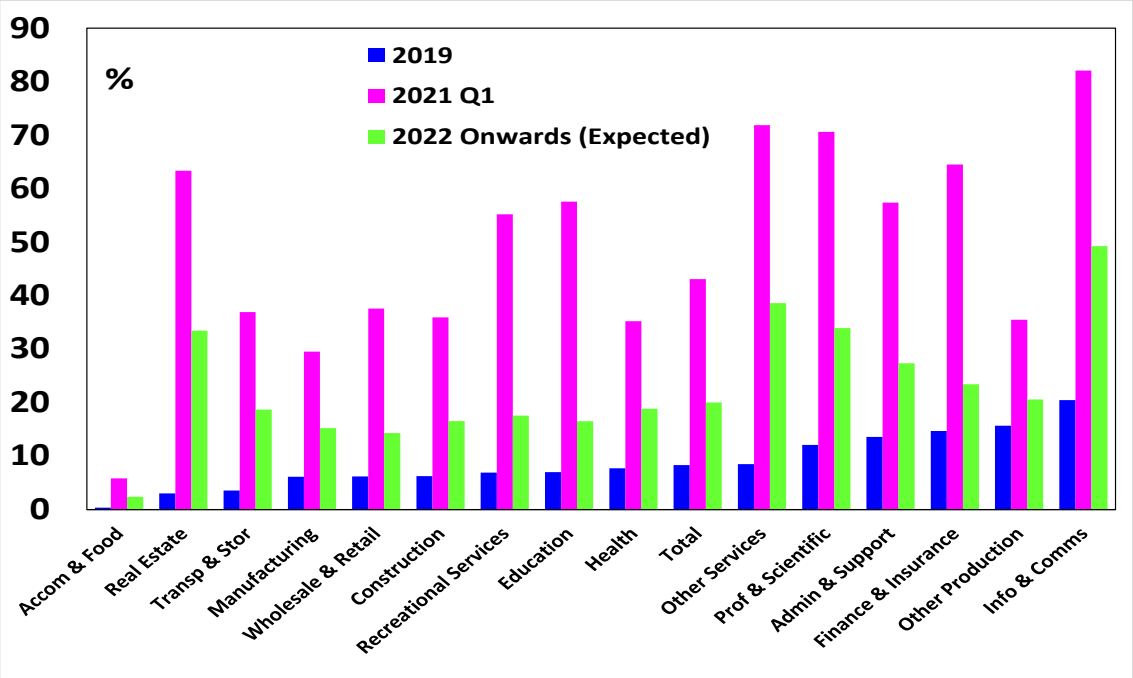
[19] The survey also shows a rise in the share of sales that are ordered online and collected in person 0.5% in 2019 to 3.2% in Q1 this year and an expected level of 2.0% of sales in 2022 onwards. This is expected to account for a relatively high share of sales in retailing and wholesaling, accommodation and food services, recreational services and manufacturing.
[20] See Tenreyro (2020) and Saunders (2020a).
[21] Small retailers (employment level below 100 people) have a relatively high market share in online sales. With the switch to online sales, retail sales volumes (ex fuel) for small retailers rose 17.4% YoY in Q4-2020, the highest growth since data began in 1989. The volume of sales for large retailers (employment of 100 people or more) rose 1.7% YoY.
[22] See Battiston et al. (2017) and Bloom et al. (2020).

Figure 4. UK – DMP Survey on Percentage of Sales that are Online



Note: Data are based on responses to the question: "In each of the following periods, approximately what percentage of your sales/services was delivered/do you expected to be delivered in the following ways? Survey period 5-19 Feb 2021. Source: Bank of England.

Figure 5. UK – DMP Survey on Percentage of Total Hours Worked Remotely Among UK Firms



Note: DMP survey period was 5-19 February 2021. Source: Bank of England.

However, while a shift to widespread compulsory full WFH probably is not optimal, WFH offers a range of possible advantages for some firms. These include more efficient use of the business capital stock and cost reduction, including savings on city centre office space (or, equivalently, you could regard WFH as an expansion of the business capital stock, because more of the stock of housing, domestic ICT and home furniture is now used for work). It is likely to allow some firms to access a wider pool of staff (for example, people that cannot easily get to a specific work location), and to better match jobs to skills, while leading to reduced absence from sickness (which may include caring responsibilities for family members).[23] For some people, the option to WFH also seems to be good for employee satisfaction and productivity, because of reduced distractions and a quieter work environment, as well as advantages from a better work-life balance.[24] This may lead to better staff retention, and hence improved work skills, as well as cost savings from lower staff turnover. By cutting commuting time and costs, increased WFH is likely to expand labour supply, by allowing more people to enter the workforce (or stay in the workforce for longer).[25]

The ONS BICS results suggest that more firms report adverse effects on their productivity from increased remote working over the last year than report positive effects. However, there is a clear effect of firm size: in general, larger firms are much more positive in their attitude to remote working than smaller firms. Weighted by firm size (number of employees), the share of firms reporting positive effects on productivity from remote working over the last year has been similar to the share reporting adverse effects (averaged over recent months). There is some variation across sectors: adverse effects dominate in, for example, accommodation and food services, arts and entertainment, construction, administration and support services. Positive effects dominate in real estate, professional and scientific activities, ICT and health services. Similarly, a recent survey of people working from home found a modest balance reporting positive effects on their productivity.[26]

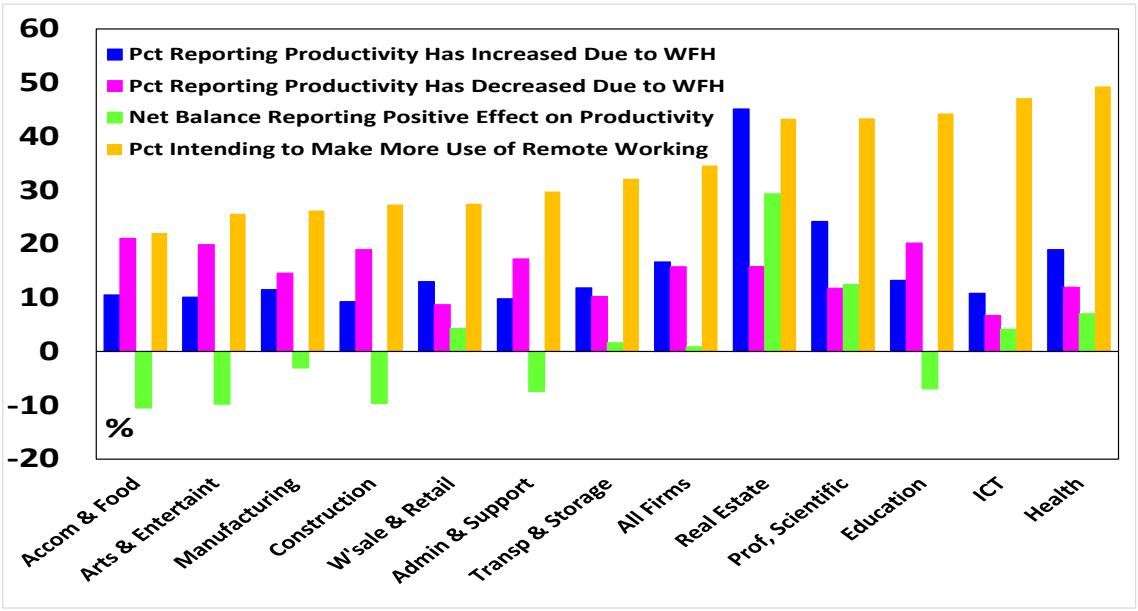
The relative scale of these advantages and disadvantages is likely to vary among different jobs and people in the same firm. For the economy as a whole, the relationship between these effects is likely to be hump-shaped. Now that we have overcome initial barriers of learning how to operate home working in many jobs, some degree of WFH and flexibility around its scale probably boosts potential output. But when WFH hours are too high and compulsory WFH predominates, adverse effects take over and potential output might fall.[27]

The DMP survey suggests that on average, firms expect that around 20% of total hours will be worked remotely in in the next few years (2022 onwards) – compared to 8% pre-pandemic. The results suggest the persistent shift to WFH will be especially marked in professional services, real estate services and ICT. The

[23] See Felstead and Reuschke (2020), CIPD (2020 a, b, c), Bloom et al. (2015), Mas and Pallais (2017), Haldane (2020a).
[24] See Chung et al (2020), and YouGov poll of workers in London, 16-19 November 2020.
[25] See Kun et al (2020) and Barrero et al (2020). Eurostat data (released 21 October 2020) show that, in 2019, UK workers spent on average one hour per day travelling to and from work – about 20% above the EU average (and indeed above all EU countries except Latvia). Until the pandemic, the average commuting time had been gradually rising over time.
[26] See Taneja et al (2021), as well as Felstead and Reuschke (2020)..
[27] See Coenen and Kok (2014), Kazekami (2020), Gajendran and Harrison (2007), Anayi and Robinson (2021), Behrens et al (2021).

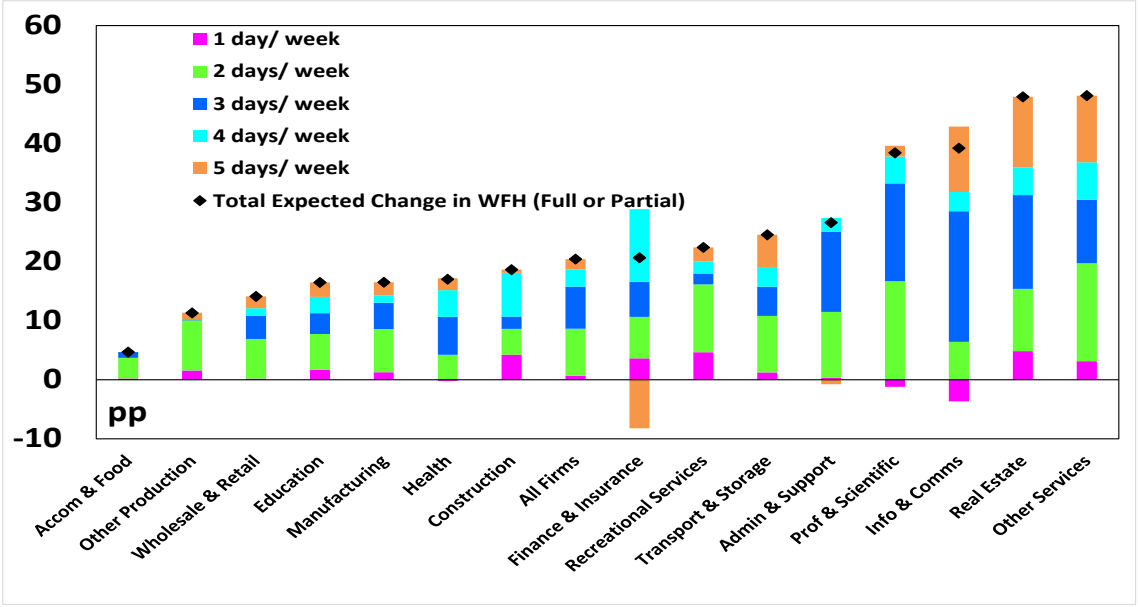
BICS survey gives a similar message, with a sizeable share of firms in all sectors expecting higher remote working in future years than the pre-pandemic level.

Figure 6. UK – BICS Survey Responses on Effects of Remote Working During and After the Pandemic



Note: WFH Working from Home. Results weighted by the number of employees and averaged across Waves 16-22, covering the period from mid-Sep 2020 to mid-Jan 2021. The fourth series shows the share of firms that "intend to use increased homeworking as a permanent business model going forward". This work contains statistical data from ONS which is Crown Copyright. The use of the ONS statistical data in this work does not imply the endorsement of the ONS in relation to the interpretation or analysis of the statistical data. This work uses research datasets which may not exactly reproduce National Statistics aggregates. Sources: ONS and Bank of England.

Figure 7. UK – DMP Survey – Firms' Expectations for Change in Percentage of Employees that will be Working from Home, Comparing 2022 Onwards with 2019 (as a share of total employees)



Note: The results are based on the question 'How often did your full-time employees work from home/how often do you expect them to work from home in the following periods (2019, 2021 Q1 and 2022+)?' Respondents were able to provide percentages for the following categories: (i) one day per week; (ii) two days per week; (iii) three days per week; (iv) four days per week; (v) five or more days per week; (vi) work from home rarely. A figure of, for example, 10pp indicate that on average firms expect a 10pp rise in the share of total employees that will be working from home for this specified number of days. Source: Bank of England.

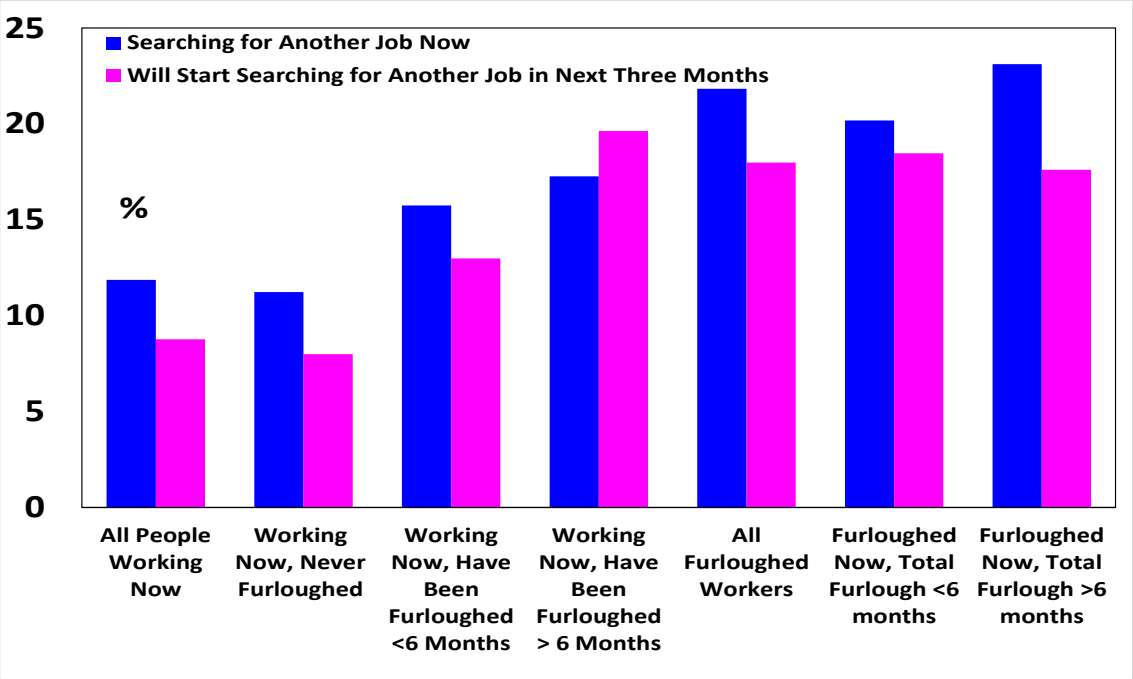
Many firms are looking to make more use of a hybrid model whereby people are partly remote working, to combine the various benefits of WFH with the benefits of collaboration if people work in the same place as their colleagues at least some of the time.[28] The BICS results suggest that, among firms that intend to use more WFH, the main factors cited are reduced overheads, higher employee satisfaction, higher productivity, the ability to access a wider pool of staff, to better match jobs to skills, and reduced absence from sickness. While this shift to persistently higher remote working may create challenges in how firms enable collaborative working, in my view it also may have positive effects on the future path of potential output in terms of labour supply, labour productivity and a more efficient use of the capital stock compared to the old pre-pandemic model (and the February MPR assumptions).

Another issue that may be supporting potential output is that the **contribution of furloughed staff to spare capacity (and potential output) may be higher than assumed in the February MPR**. This is in part because, with the pandemic (and furlough) having persisted for so long, a rising share of those on furlough are seeking work elsewhere. Since the MPR, new LFS data suggest that the share of furloughed workers searching for another job rose to 13% in Q4-2020, from 10% in Q3 and 5% in Q2. Separate data from a survey for the Resolution Foundation suggest that, among furloughed workers, the share searching for another job is relatively high for those who have experienced a longer cumulative period in furlough over the last year, possibly because this group also perceive the risk of losing their job to be relatively high.[29] As the pandemic has rolled on, a rising share of furloughed workers fall into this persistent furlough category, perhaps accumulating repeated spells of furlough.[30] Job search rates are also relatively high among those who are currently working but have been furloughed previously, especially those furloughed for a long period.

In addition, the job search measure among furloughed workers used in the MPR estimate is quite narrow. It relies on a question in the LFS that asks people whether they looked for another job in the last week, a relatively brief period. By contrast, in judging whether people who are out of work count as actively looking for work for the unemployment figures, the LFS asks whether they looked for work in the last four weeks, a much wider window. The RF survey, which simply asks people whether they are looking for another job, found a job search rate of over 20% among furloughed workers.

[28] The DMP survey suggests that firms expect the share of full-time employees that are fully or partly remote working to rise to 34% in the next few years compared to 13.5% in 2019. Within this, firms expect the share of employees that will be remote working for part of the week to rise from 8% in 2019 to 27% for 2022 onwards. The share of employees expected to be remote working 5 days per week is expected to rise only slightly, to 7.3% in 2022 onwards from 5.5% in 2019.
[29] See Cominetti et al (2021).
[30] The RF data suggest that among people on furlough, slightly more than half had more than six months cumulative furlough in January. Given the furlough scheme was only launched in late March 2020, this share was zero in Q2 and most of Q3 last year.

Figure 8. UK – Percentage of People Who Are Searching For Another Job



Note: Data surveyed 22-26 January 2021. The period for which people have been furloughed is measured on a cumulative basis, and may include more than one spell of furlough. This analysis was undertaken independently by the Bank of England. Base by categories: All people working now = 3419; Working now, never furloughed = 2952; Working now, have been furloughed <6 months = 421; Working now, have been furloughed >6 months = 46; All furloughed workers = 481; Furloughed now, total furlough <6 months = 211; Furloughed now, total furlough>6 months = 270. Sources: Resolution Foundation and Bank of England.

Moreover, in my view, some furloughed workers also may contribute to spare capacity even if not searching for another job. Some firms have furloughed staff because of weak demand, even though people are not prevented from buying their goods and services. For example, in January this year, around 10% of jobs were furloughed in construction, real estate services, manufacturing and professional services (sectors that have stayed open). Similarly, roughly 30% of furloughed jobs are flexible furlough (January data), whereby people work part-time and the employer can vary their paid hours. In my view, such workers may in part contribute to spare capacity in the economy regardless of whether they are looking for another job, in the same way that people who would like to work more hours are included in estimates of spare capacity.

Looking ahead, I am also unsure – indeed, a bit doubtful – of the MPR estimate for the extent to which higher unemployment will lift **structural unemployment** later this year. There is evidence that the job finding rate among longer term unemployed is relatively low.[31] Moreover, the past experience of our standard filter is that the estimated NAIRU (the UK equilibrium jobless rate that best explains the observed behaviour of wages, based on a Phillips curve relationship) tends to drift up when the jobless rate has been elevated for a while.[32] However, when tested directly, the relation between unemployment and pay growth does not seem

[31] See Krueger et al (2014) for a discussion of this in the US context.
[32] See pages 17-29 of the BoE Inflation Report of February 2018.

to be affected by changes in the share of long-term unemployment (see Appendix).[33] In other words, high unemployment tends to reduce pay growth irrespective of whether it is short- or long-term unemployment that is high. If rising long-term unemployment does not lift structural unemployment as much as implied by the MPR (if at all), then this would imply upside risks to potential output late this year and during next year relative to the MPR forecast. This issue that higher long-term unemployment may temporarily reduce potential output may in any case matter less now, given that the extension of the furlough scheme is likely to lower the near term path for unemployment – and hence the path for long-term unemployment – compared to the February MPR.

This is not an exhaustive list of uncertainties over potential output.[34] But, overall, my hunch is that the temporary adverse effects of the pandemic on potential output have been smaller, and will fade more quickly, than the MPR assumption.

The first two factors (the shift to digital, more remote working) – as well as a lower near-term unemployment path – may also imply that the MPR estimate for longer term scarring on potential output (1¾% of GDP) will turn out to be too pessimistic. But for that longer term outlook, there are also some risks on the downside. For example, there are signs of a substantial outflow of foreign workers over the last year[35] which, if it has occurred and persists, could imply a smaller workforce. Nor does the MPR allow for the possibility that the pandemic will lower participation, for example because of health effects on some people or decisions by some older workers to retire earlier.[36] There is (and probably will continue to be) plenty of uncertainty around the long-term effects on potential output of the pandemic – but the effects may not all be adverse.

Risks Around the Outlook for Demand

Data so far suggest that Q1 GDP will be less weak than expected in the February MPR, and the outlook for activity in Q2 also is probably better than in the MPR central forecast. This partly reflects the effects of higher government output. But, in addition, since the MPR, Covid infections, hospitalisations and deaths have continued to fall rapidly, while the vaccination program has continued at pace. The current plans envisage that restrictions across the UK will be eased somewhat more rapidly than assumed in the February MPR.[37] Moreover, the recent Budget provided significant further near-term support for the economy.

There are some upside possibilities for demand further ahead. For example, the household saving rate might fall faster over the next year or two than assumed in the MPR, reflecting pent-up demand as households run down a higher share of the stock of savings built up over the last year. If there is less damage to the supply

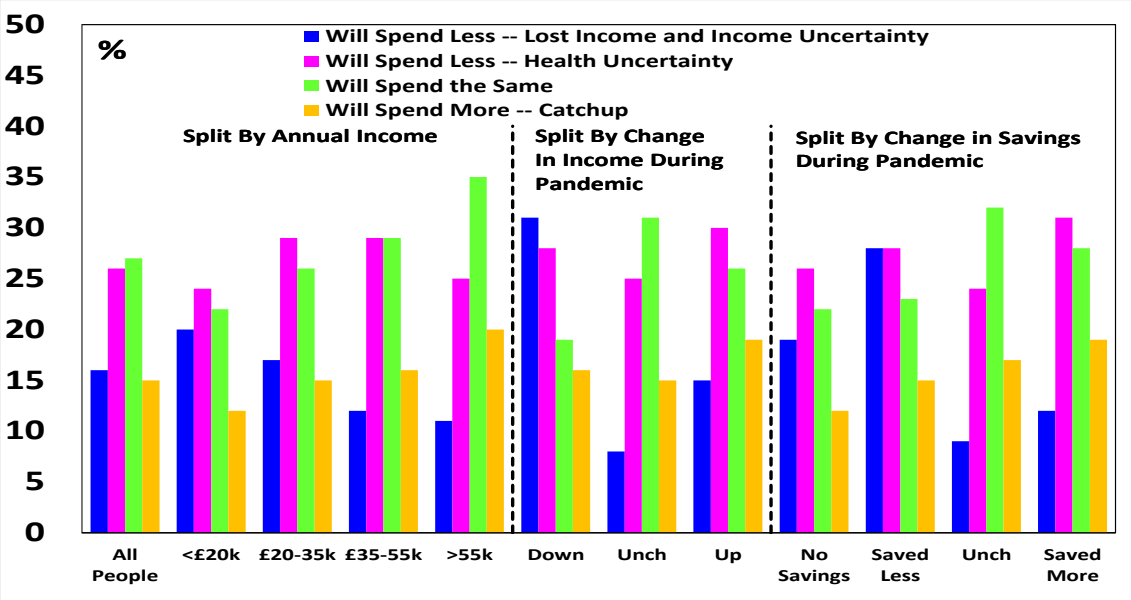
[33] Evidence on this is mixed. Kiley (2014), Bell and Blanchflower (2014) and Speigner (2014) reach similar conclusions, while Llaudes (2005) has a different view.
[34] It is also worth noting the sharp rise in the number of company incorporations in the UK, which rose 13% YoY in 2020 and reached a record high. In the first 11 weeks of 2021, the number of company incorporations rose 18% YoY.
[35] See O'Connor and Portes (2021), and ONS analysis "Coronavirus and the impact on payroll employment", released 23 March 2021.
[36] See OBR (2021).
[37] The MPR assumed that restrictions ease gradually from end-March to end-September, whereas the roadmap envisages that restrictions could be ended by late June, depending on various conditions.

side from the pandemic, then this should also support demand over time, because households and firms will anticipate stronger future real gains in incomes and activity.

But there are also downside risks, on the side of a slower recovery over time. There probably will continue to be lingering risks that viral mutations could trigger a renewed rise in infections and restrictions over the next year or two (which could also affect potential output). Firms may be cautious over hiring and investment until it is clear that the pandemic is definitely finished. The slower pace of vaccinations in many other countries may prolong these risks, and require continued restrictions in other countries which could affect UK exports.

Business spending in the UK may also be restrained by the overhang from the rise in corporate debts during the pandemic.[38] Household spending may be restrained by pressure among some households to rebuild savings that have been run down during the crisis, and fears of job losses after furlough ends. The rise in aggregate household savings has been concentrated in higher income households and the elderly, who typically have a relatively low marginal propensity to consume out of both income and wealth.[39] In total, roughly as many households report their savings have fallen as risen. The share of households reporting their savings have fallen is especially marked in the lower half of the income distribution, as well as among those who have been furloughed and self-employed workers. Moreover, the recent Budget increased the medium-term tightening in fiscal policy.

Figure 9. UK – Percentage of People Intending to Spend More/Less In The Future Compared to Pre-Pandemic Level



Note: The question is "As you will probably know, a vaccine for Covid-19 is now being rolled out in the UK, and the government expects this to allow an easing of restrictions in the future. Once restrictions are lifted, how do you expect your spending will change compared to how it was before the pandemic began?", sample period 26 February 2021 to 1 March 2021. Sources: Ipsos/MORI and Bank of England.

[38] See Demmou et al (2021).
[39] See Nourse et al (2020).

In addition to balance sheet repair, psychological scarring from this turbulent period, which has seen the economy shrink by 20% with repeated lockdowns, could cause households and businesses to factor in greater uncertainty and downside risks about their future income prospects, hence leading them to save more (and aim for more resilient balance sheets) than the pre-Covid period.

Thus far, it is unclear whether, beyond Q2, upside or downside risks around the MPR forecast will dominate. A sizeable share of people expect that they will remain cautious over spending even as restrictions ease because of financial worries and health uncertainties, especially among those whose incomes or savings have fallen during the crisis. The drag from health worries might well fade as vaccinations proceed, but it will be important to see the extent to which this affects consumers' willingness to spend in coming months.

***

Let me sum up the argument so far and make some wider points. In my view, there are reasons to conclude that the adverse effects of the pandemic on potential output over the last year and for the year ahead may not be quite as large as assumed in the February MPR. Hence, even if Q1 GDP turns out higher than forecast in the MPR, in my view it might still be reasonable to conclude that the output gap is higher than expected. And my hunch, taking account of a somewhat more optimistic assessment of the outlook for potential output, is that it will take longer to close the output gap than forecast in the February MPR.
In any case, whatever one's view of the scale of the adverse effects on potential output from the pandemic recently and the next few quarters, a key point is that many of these adverse effects are likely to be temporary. The same factors that will lift activity (eg reduced restrictions) will also lift potential output towards its long-term path. In addition, the path of potential output is likely to be endogenous.[40] A stronger recovery would probably imply less business failures, fewer staff furloughed for a long period of time, less rise in long-term unemployment, more spending on investment and training etc and hence less damage to potential output near-term and further ahead.[41] As a result, a forecast that activity will rise strongly in coming quarters may not by itself tell us whether spare capacity will be rising, falling or stable.

Moreover, while it is the output gap – the gap between activity and potential output – which matters for inflation, this measure does not fully describe the degree of resource use in the economy at present. An output gap estimate of 1% of GDP in Q1 this year would not imply that GDP in Q1 was only 1% away from a normal level of activity, or that a 1% overshoot in GDP relative to forecast would sustainably close the output gap. For this, it is useful to consider the shortfall of activity relative to the likely post-pandemic path for potential output once temporary effects fade, what one might call the efficient level of output. This shortfall probably is large now and is unlikely to close in the next few quarters. As long as this shortfall persists, it would be hard in my view to argue that the output gap has closed sustainably.

[40] See Haskel (2021).
[41] Of course, this does not apply to all the likely effects on potential output: for example, the extent of reallocation of labour and capital between sectors may not be so affected by the pace of growth in the next year or two.

How do we measure this shortfall – and hence judge whether the output gap has closed sustainably? Price and pay data might become more informative, although they may continue to be affected by various temporary factors for some time. I will probably look more to the unemployment rate (and measures of under-employment). These measures of slack are unlikely to be affected by uncertainties over the outlook for productivity and labour supply.[42] Moreover, provided inflation expectations remain well anchored, it is likely that the pandemic will have only a modest persistent effect on the equilibrium jobless rate. In this context, the MPR forecast that, late this year, the output gap will be closed with the jobless rate above 5½% does not imply that such a high jobless rate will be consistent with a zero output gap over time. As noted, the MPR assumed that late this year there will be a temporary rise in structural unemployment caused by higher long-term unemployment. As this effect fades, the MPR projected that three years ahead, the output gap will be around zero with unemployment at 4½% (allowing for the persistent effect on equilibrium unemployment that is expected to result from skills mismatch). In my view, that three-year ahead unemployment forecast (4½%) is likely to be a reasonable benchmark against which to judge whether activity has fully caught up with the path for post-pandemic potential output and hence closed the output gap sustainably.

Implications for Monetary Policy

Let me discuss some implications of all this for the appropriate setting of monetary policy. At the recent monetary policy meeting, the Committee retained its guidance which states: "*If the outlook for inflation weakens, the Committee stands ready to take whatever additional action is necessary to achieve its remit. The Committee does not intend to tighten monetary policy at least until there is clear evidence that significant progress is being made in eliminating spare capacity and achieving the 2% inflation target sustainably*." This guidance is two sided. I want to discuss both sides in light of the previous points about the current and prospective paths of supply and demand in the economy.

The second part of the guidance discusses preconditions for tightening. At face value, one could perhaps argue that the central MPR forecast – that, late this year, CPI inflation will be around 2% and the output gap will be closed – might imply the conditions for tightening will be met quite soon. However, it is important to note the caveats in the guidance. I want to highlight three particular phrases:

- "**at least until**" indicates these conditions are necessary but not sufficient for tightening: the Committee won't tighten before those conditions are met and will then judge according to the situation.

- "**clear evidence**" implies that progress in meeting these conditions should be relatively unambiguous.

[42] See Broadbent (2014).

- "**sustainably**" implies the need to take account of whether demand is supported by factors that are likely to be relatively temporary. It also implies a distinction between a scenario in which the output gap is closed while the economy's potential output is temporarily depressed, and a scenario in which the output gap is closed with activity regaining its efficient level (ie the path of potential output once temporary effects fade).

In my view, a jobless rate of well above 5% (the February MPR forecast for Q1-2022 was 5.7%) would almost certainly indicate that we are some way from closing the output gap sustainably.

Turning to the first part of the guidance, on conditions for loosening. A more persistent output gap would not prevent headline CPI inflation from rising in coming months, given swings in energy prices. But it would probably keep core inflation subdued for longer than the MPR projects hence, unless energy prices go on rising, tilting the medium-term outlook to below-target inflation. Risk management considerations also could apply, because an incomplete recovery and persistent output gap would be a more costly outcome than a scenario in which the output gap closes at an earlier date.[43]

The MPC has ample scope to tighten monetary policy if required to restrain inflation. If easing is required, the MPC has various options in its toolkit to support the economy. As well as forward guidance and asset purchases, a zero or negative policy rate will also be feasible from the August policy meeting onwards.[44] If easing is needed, in my view the choice among these policy tools might depend on the circumstances and allow for any complementarities between them. Having a range of policy options available should reinforce confidence among households and businesses that the recovery will be sustained even in the event of adverse shocks.[45]

Either way, the MPC will, as always, remain focussed on ensuring that inflation returns sustainably to the 2% target, in a way that supports output and jobs.

[43] See Haskel (2020) and Saunders (2020b).
[44] As discussed in the February MPC minutes, the MPC has requested that the PRA should engage with PRA-regulated firms to ensure they commence preparations in order to be ready to implement a zero or negative Bank Rate at any point from the August MPC meeting onwards. The MPC also requested that Bank staff should commence internal technical preparations to deliver the option of a tiered system of reserve remuneration that could be ready to be implemented, if judged appropriate, alongside a negative Bank Rate.
[45] See Brando-Marques et al (2021).

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Appendix – A Panel Model of Wage Growth

We estimate a sector level wage Philips Curve to determine whether there is an impact from long-term unemployment on pay growth, over and above the unemployment rate. If labour is mobile across sectors, theory dictates the aggregate jobless rate is the key determinant of wages. However, the problems associated with estimating aggregate Phillips Curve are well known. So we have focussed our attention on a more empirically tractable question.

As a baseline, we take Vlieghe's (2018) model, updated to cover the years up to 2019, which relates annual pay growth to lagged pay growth and unemployment within industrial sectors. Sector and time fixed effects are included to allow for factors that (a) affect each sector on average and that (b) affect all sectors over time, respectively. The lag of the unemployment rate is used in order to avoid any simultaneity between wage growth and the jobless rate. The natural log of the unemployment rate and the change in the unemployment rate are also tested as robustness checks.

The model is estimated on an annual basis. Pay is based on average weekly pay within each sector as recorded by the Labour Force Survey and includes the earnings accruing to both employees and the self-employed. Labour market quantities are taken from Labour Force Survey data published by the ONS. Long-term unemployed are defined as those who have been unemployed for 12 months or more.

The baseline specification (equations (i)-(iii)) clearly shows that pay growth is higher in those sectors where unemployment is lower. But long-term unemployment has no empirical impact on pay growth over and above aggregate labour market conditions. Adding the long-term share of the unemployed (equations (iv)-(vi)) does not yield a statistically significant effect, while the jobless rate remains significant and correctly signed.

Sample: 1999-2019

	(i)	**(ii)**	**(iii)**	**(iv)**	**(v)**	**(vi)**
Dependent variable			Pay growth			
Pay growth(t-1)	-0.24***	-0.23***	-0.22***	-0.25***	-0.23***	-0.22***
Unemployment rate(t-1)	-0.61***			-0.64***		
Log unemp. rate (t-1)		-2.08**			-2.16**	
Difference in unemp. rate (t-1)			-0.72***			-0.71***
Long-term share unemp. (t-1)				0.04	0.04	0.02
				(0.03)	(0.03)	(0.04)
Sector fixed effect	Yes	Yes	Yes	Yes	Yes	Yes
No. of sectors	14	14	14	14	14	14
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Sample size	294	294	294	294	294	294

Note: asterisks denote significance at 10% (*), 5% (**) and 1% (***) level, using Driscoll-Kraay standard errors. Standard errors for the long-term share of unemployment are reported in parentheses, standard errors for the rest of the table are available on request.