BANK OF ENGLAND

Speech

Risk management in a sluggish economy

Speech given by
Michael Saunders
External Member of the Monetary Policy Committee
Bank of England

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Introduction and Summary

I voted for lower interest rates at the most recent two MPC meetings, in November and December. In this speech, I want to discuss the factors behind those votes. I will start by reviewing recent economic data, then discuss risks to the outlook, and finish with some comments on monetary policy. To jump to the conclusion, I will make four main points.

First, with softer global growth and high Brexit uncertainty, the UK economy has remained sluggish. The slowdown has created a modest output gap, and there are signs that the labour market is turning.

Second, the most likely outlook is a further period of subdued growth, and hence a disinflationary backdrop of a persistent – albeit modest – output gap.

Third, the neutral level of interest rates may have fallen further over the last year or two, both in the UK and externally.

Fourth, against this backdrop, it probably will be appropriate to maintain an expansionary monetary policy stance and possibly to cut rates further, in order to reduce risks of a sustained undershoot of the 2% inflation target. With limited monetary policy space, risk management considerations favour a relatively prompt and aggressive response to downside risks at present.

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Let's start with the **current state of the economy**.

Growth has slowed markedly over the last year, both overseas and here. Global growth slowed below 3% YoY (PPP-weighted) in 2019, the weakest since 2009. In the UK, the economy has barely grown since the first quarter of last year and the YoY growth in GDP has fallen below 1% for the first time since 2012.[1] Some recent business surveys have been better, some worse. But, taken as a whole – and figure 2 shows some trends in the BoE Agents' Scores – business surveys are generally soft and consistent with little or no growth in the economy.

It is unusual for growth to slow so much when fiscal policy and monetary conditions are supportive. Bank Rate remains negative in real terms, and somewhat below the MPC's estimate of neutral.[2] Mortgage rates are around record lows. Public spending has picked up markedly, with the sum of real government

[1] Latest data are for September-November 2019. Preliminary GDP data for Q4 2019 will be published on February 11.
[2] The MPC judged in August 2018 that the neutral level of Bank Rate in coming years is likely to be around 2¼%, and hence slightly above zero in real terms if inflation is at the 2% target (see box on pages 39-43 of the August 2018 *Inflation Report*).

consumption and investment up by 3-4% last year (based on data for Q1-Q3), the strongest since 2008 (see figure 3).

Figure 1. UK – GDP growth and business surveys

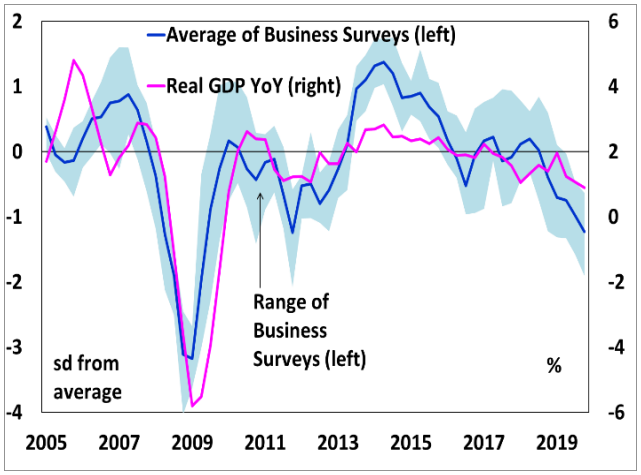
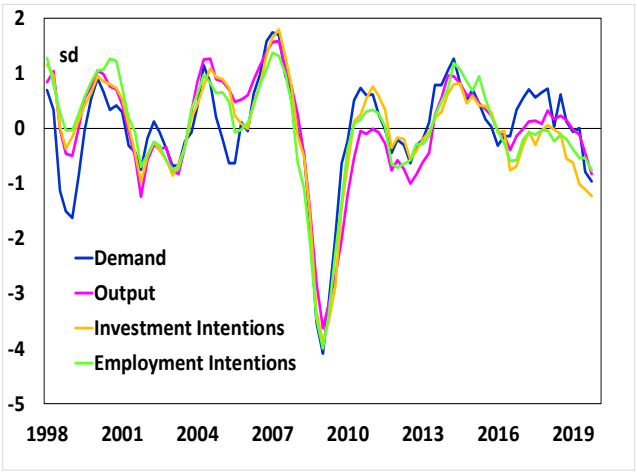


Figure 2. UK – Key Trends in BoE Agents' Scores (standard deviations from 1998-2018 average)



Note: The left chart uses business survey results from the CIPS, EC, BCC, FSB, ICAEW, and BoE Agents. In the right chart, the series are weighted composites across the various sectors of the economy. The demand score is the weighted average of the consumer goods values, consumer services values, investment intentions and manufacturing exports scores. The output score is the weighted average of the manufacturing output, construction output, consumer services value and business services scores. Sources: Eikon from Refinitiv, CIPS, CBI, BCC, ONS, FSB, ICAEW, and Bank of England.

The key factor behind the slowdown has been persistently high policy uncertainty, generated both at home and abroad.[3] In the UK, firms and households have faced Brexit-related uncertainties, with risks of a possible no-deal Brexit and uncertainties over the UK's eventual trading relations with the EU and elsewhere. At a global level, trade policy uncertainty has surged (see figure 4). Tariffs on US-China trade have risen sharply, there have been actual or threatened tariff hikes on a range of other economies, and there has been a sharp rise in non-tariff protectionist measures.[4] Moreover, the broadening of the stated rationale for these measures – from the initial focus on addressing bilateral trade deficits to include disputes over intellectual property theft, currency policy, industrial subsidies, the structure of domestic sales taxes, and migration policy – means that what started out as a dispute between two countries has much wider implications.

There is extensive evidence that high uncertainty with downside risks hinders economic growth.[5] When firms and households fear that something bad might be about to happen, the incentive to defer major spending decisions with large sunk costs is high. The incentive to wait is greater if it appears possible that uncertainty will be resolved soon. It follows that the recent persistent rolling uncertainty, in which firms and households keep expecting uncertainty to be resolved a few quarters ahead, is likely to be especially damaging. Spending gets deferred in the hope that things will be a little clearer, and then – when uncertainty persists –

[3] See sections 3 and 4 of the November 2019 *Monetary Policy Report*.
[4] See Global Trade Alert database.
[5] See Dixit and Pindyck (1994), Broadbent (2019) and Saunders (2019).

spending is deferred again and again. Moreover, given that Brexit-related uncertainties are greater for the UK than other countries, some of that spending is probably diverted elsewhere.

Figure 3. UK – Public and Private Spending In Domestic Demand (YoY, Real Terms)

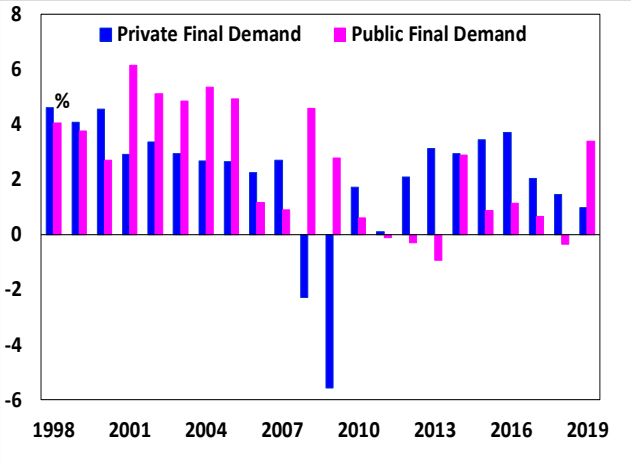
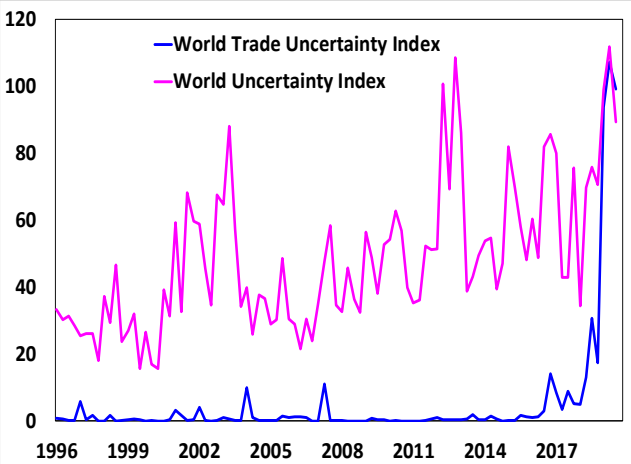


Figure 4. Global – World Uncertainty Index and Trade Policy Uncertainty Index (2019 = 100)



Note: In left chart, figures for 2019 are the average of Q1-Q3. Sources: ONS, Ahir, Bloom and Furceri (2018) and Bank of England.

These adverse effects of high uncertainty are evident in the data, both for the UK and elsewhere.

World trade volumes are down from a year ago, the first significant decline since 2009, with a marked deterioration in business confidence across many countries. Business investment growth across the major advanced economies has slowed from 6% YoY in late 2017 to about 2% YoY now.

In the UK, business investment has risen only slightly in real terms since the Brexit referendum in mid-2016, and firms' investment intentions remain weak. Exports have suffered from weaker world trade growth as well as decisions by firms elsewhere to diversify business relations and supply chains away from UK-based firms. Consumers have turned more cautious. Despite the positive backdrop of rising real wage growth, low unemployment and very low mortgage rates, household spending growth has slowed to around 1% YoY from roughly 2½% YoY in 2016-18.

Spare capacity, prices and the labour market

Uncertainties over Brexit and trade policy have also hit potential growth. For example, weak investment has capped capital stock growth, while Brexit contingency plans and preparations have absorbed resources. As a result, productivity growth has fallen further below the (low) OECD average since early 2018. Even so, the MPC judged in last November's MPR that underlying growth in recent quarters has fallen slightly below potential, such that the economy had a modest but rising output gap of roughly ¼% of GDP. Data since then

have been on the soft side. Hence, the output gap now may be a little bigger, perhaps ⅓% to ½% or so of GDP in my view.

At first glance, this view of rising spare capacity might appear hard to reconcile with some key labour market trends. For example, private sector regular pay growth reached 4% YoY in the middle of last year, the highest since 2008. Moreover, the jobless rate has been roughly stable at just below 4% since early last year, the lowest since the mid-1970s and a little below the MPC's estimate of the equilibrium jobless rate (4¼%).

However, the pace of average earnings growth over the last few quarters probably overstates the underlying trend. Some of the recent strength probably reflects erratic compositional effects[6] – notably marked weakness in employment in low-paying occupations – that are unlikely to persist. Most other guides do not suggest that pay growth continued to strengthen over the last year. For example, the 12-month median for private pay deals has been fairly stable at 2.75% since early last year, while survey guides to pay growth levelled off or edged down recently (see figures 5 and 6). Regular pay growth has cooled a bit in the last couple of months, and the MPC's central forecast (which I agree with) is for average earnings growth of about 3¼% over this year.

Figure 5. UK – Pay Deals and AWE Growth

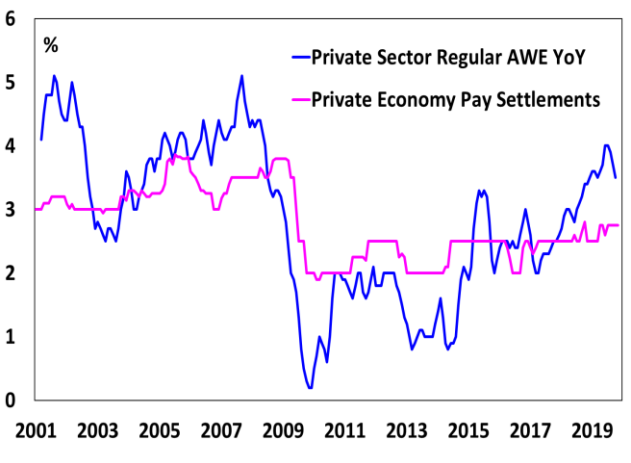
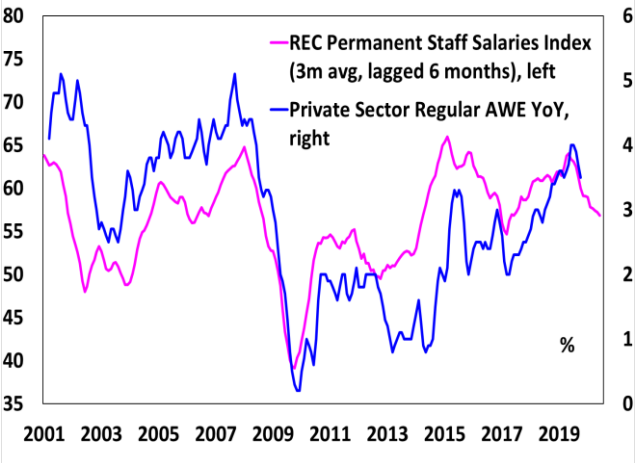


Figure 6. UK – AWE Growth and REC Pay Survey



Sources: ONS, REC and Bank of England.

Moreover, while the jobless rate is a useful guide to labour market conditions, by itself it does not always give a clear and timely signal whether the economy has spare capacity and whether slack is rising slightly or stable.

[6] The LFS data suggest that recent job growth has been oriented to high paying occupations, for example managerial and professional staff, with marked weakness in low-paying occupations such as routine and semi-routine work. Such compositional effects, if replicated in the AWE data, would add roughly ½pp to annual AWE growth in Q3 2019 (latest data).

One issue is that all estimates of the equilibrium jobless rate are uncertain, and the MPC estimates it has edged down from 5% to 4¼% in recent years. This downtrend has reflected various factors, including changes to the tax and benefit system, increases in less secure forms of work, improved educational attainment and population ageing, many of which are ongoing.[7] I suspect that the equilibrium jobless rate now may have fallen a little further, perhaps to around 4%, and hence is close to the actual jobless rate. The evidence is not yet decisive either way. But this view that the jobless rate currently is close to equilibrium would, in my view, become stronger if, in line with the MPC's November forecast, the softer tone in pay growth over the last few months is sustained during this year.

The second issue is that the jobless rate usually reacts quite slowly to changes in the output gap. One reason for this is that there are costs to changing headcount (although generally less than for investment decisions), and hence firms might wait to see if changes in demand are sustained before fully adjusting staff numbers. As a result, slowdowns in the economy tend to be reflected initially in lower capacity use: the rise in unemployment usually comes later.[8]

For example, figure 7 shows the typical response (estimated over the period from 2000 to 2019 Q3) of the jobless rate (relative to equilibrium) and capacity use in firms (based on a range of business surveys) if the output gap rises by 1% of potential GDP and then remains constant. There is some variation over time, but on average capacity use falls sharply in the first couple of quarters (by nearly one standard deviation). Then, as firms react to the drop in demand by cutting jobs (and investment), capacity use recovers somewhat and unemployment rises. Eventually, a persistent output gap of 1% of GDP is reflected in a persistent rise in the jobless rate of 0.4-0.5pp, but it takes a year or two for the full rise in unemployment to come through.[9]

Using this, figure 8 shows results for a persistent slight shortfall in growth relative to potential, which in my view is similar to the current and prospective situation. So, as before, the output gap rises by 1% of potential GDP, but now this occurs gradually, such that the output gap rises by ¼% of GDP after two quarters, ½% of GDP after four quarters and 1% of GDP after eight quarters.[10] As before, the jobless rate would eventually rise by 0.4-0.5pp, but very little of this occurs in the first few quarters. For example, after three quarters, the output gap would have reached 0.4pp of GDP, but the jobless rate would have barely risen (by roughly 0.1pp, which is well within the margin of error in the data).[11] By contrast, capacity use in firms responds fairly promptly and markedly.[12]

[7] See Haldane (2018).
[8] Changes in the output gap also tend to be reflected in changes in average hours worked and participation. However, these series are quite volatile, reflecting erratic data and effects from other factors, such that it can be hard to discern cyclical effects in real time.
[9] This is broadly in line with Okun's law. Details of calculation are shown in the Appendix.
[10] The point that capacity use reacts faster than the unemployment gap to changes in the output gap holds over recent years as well.
[11] The ONS note that the sampling variability of the jobless rate (both the level and the 3-month change) is +/-0.2pp.
[12] The disparity between the timeliness of the signals from unemployment and capacity use is reinforced by the publication lag of the jobless data. For example, at present, the latest available jobless rate data are for August to October last year, only about six months after the economy slipped into weak growth. By contrast, capacity use data are already available for Q4 as a whole.

Figure 7. UK – Estimated Response of Jobless Rate and Capacity Use in Firms to Immediate Rise In Output Gap of 1% of GDP

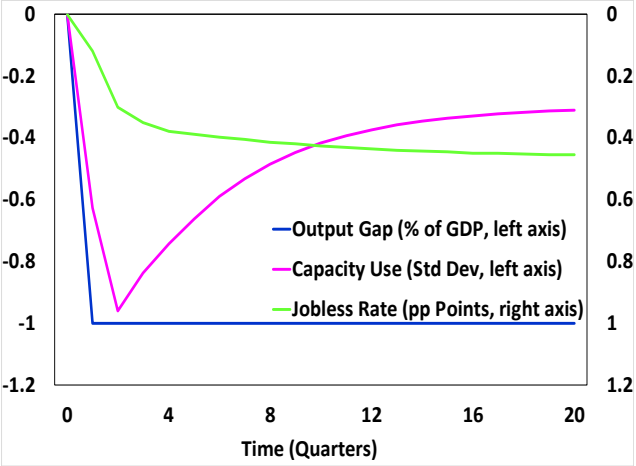
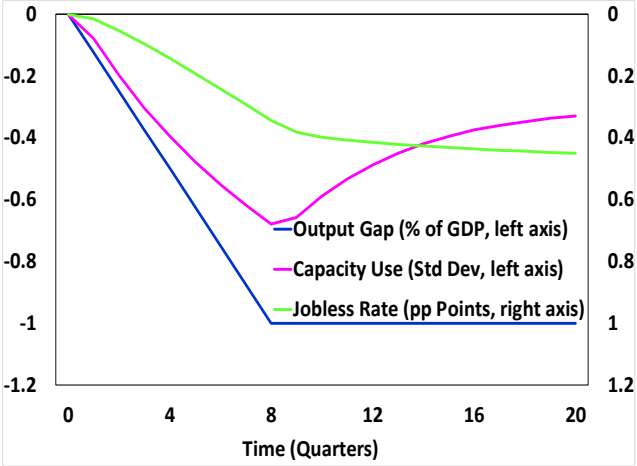


Figure 8. UK – Estimated Response of Jobless Rate and Capacity Use in Firms to Gradual Rise In Output Gap of 1% of GDP



Note: The charts are based on the economy's behaviour over the period 2000 to 2019 Q3. The jobless rate is shown relative to equilibrium. Capacity use in firms is measured using a range of business surveys. Source: Bank of England.

The implication of this is that, in trying to judge whether recent economic growth has been below trend, the sharp drop in capacity use in firms – more than one standard deviation below average across various business surveys – is probably at least as important as the fact that the jobless rate has been roughly stable (see figure 9).

Figure 9. UK – Survey Guides to Capacity Use in Firms (standard deviations from 2000-07 average)

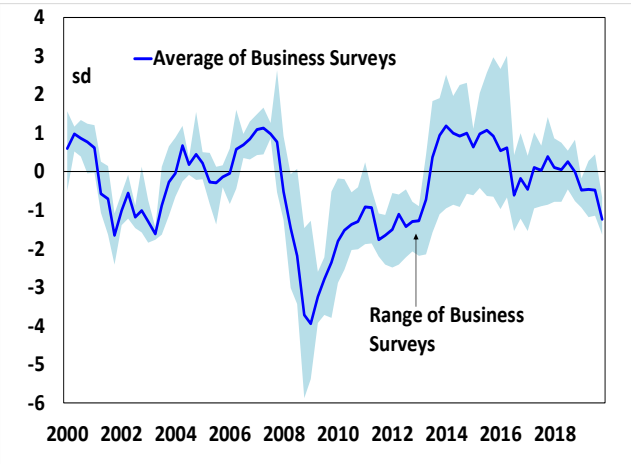
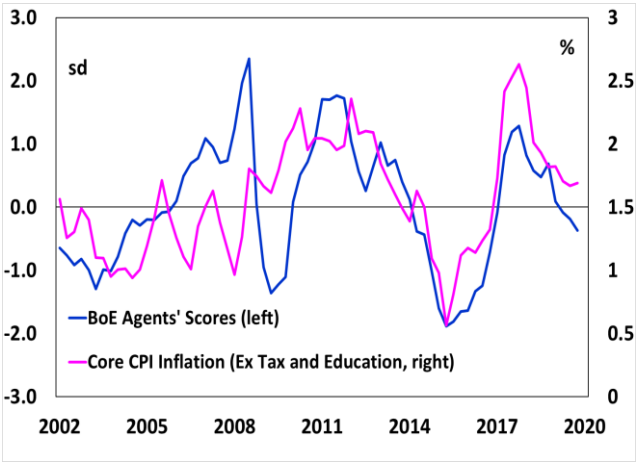


Figure 10. UK – Core CPI Inflation and BoE Agents' Scores for Consumer Goods and Services Prices



Note: The left chart uses business surveys by the CBI, BCC, BoE Agents, and CIPS, weighted across different sectors of the economy. It is shown as standard deviations from the 2000-07 average, a period in which the MPC judge the output gap was around zero on average. The right chart shows the aggregated Agents' scores for consumer goods and services prices as standard deviations from average. This measure was reduced in 2009 by a temporary VAT cut. Sources: CBI, BCC, BoE Agents, CIPS and Bank of England.

Inflation remains subdued. Core inflation has slowed a little below 2% since late 2018, while business surveys suggest that firms' expectations for selling prices have softened (see figure 10). With the economy slowing, the recent pickup in labour cost growth has been reflected in a marked squeeze on margins rather than higher prices, with the profit share in GDP in recent quarters at its lowest since 2007. The number of profit warnings by UK listed companies is the highest since 2002, and recent business surveys suggest that firms' expectations for their profitability are weak.[13] This deterioration in profitability also seems to have prompted some tightening in banks' lending standards to companies.

Figure 11. UK – Business Expectations for Profitability, and Corporate Profitability

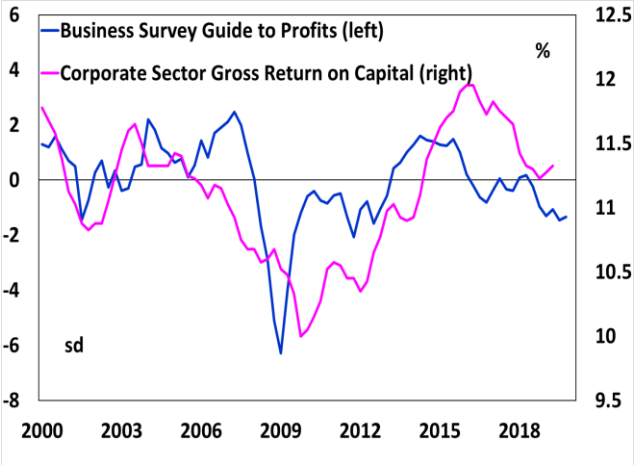
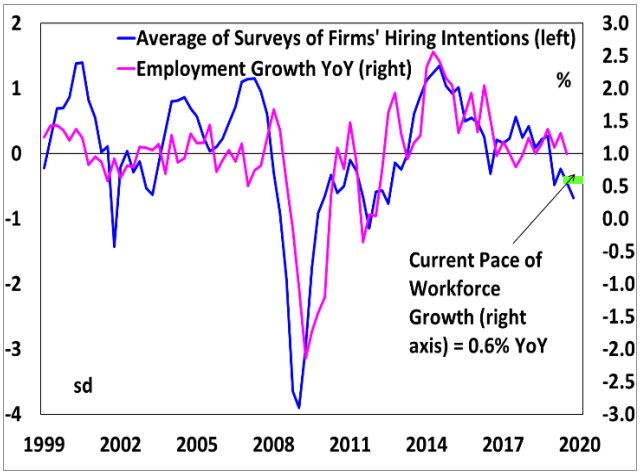


Figure 12. UK – Employment Growth and Survey Guides to Firms' Hiring Intentions



Note: In the left chart, the survey guide to profits is based on readings measuring firms' confidence and expectations for profitability in surveys from the ICAEW, CBI, BCC, FSB and Deloitte, and shown as standard deviations from the average since 2010. Rate of return on capital is for private non-oil non-financial companies and is shown as a four-quarter average. In the right chart, hiring intentions are measured across a range of business surveys and shown as standard deviations from average. Sources: CBI, BCC, ICAEW, FSB, Deloitte, Manpower, CIPS and Bank of England.

In theory, one might argue that the recent margin squeeze poses an upside risk to future inflation, because firms could seek to rebuild margins through higher prices. But, with sluggish demand restraining prices, I suspect it is more likely the margin squeeze will be passed backwards onto lower cost growth and cutbacks in corporate spending. This next leg of the slowdown – the transition from declines in capacity use and profits to weakness in employment – may now be underway. For example, job growth has slowed, while trends in vacancies, redundancies and firms' hiring intentions have all weakened markedly (see figure 12 and table 1).

So, to sum up on the current situation, economic growth is sluggish, spare capacity is rising, while inflation is subdued. The economy still has a slow puncture and this seems to be spreading to the labour market. Unless prospects for demand improve very quickly, some increases in unemployment (or under-employment) seem likely in the next few quarters.

[13] Data on profit warnings are from Ernst & Young, and measured as a share of the number of companies registered on the UK equity market and AIM companies that are currently trading. Calculation based on a four-quarter rolling average.

Table 1. UK – Recent Labour Market Trends

	Averages		Latest
	2014-Mid 2016	Mid-2016-Q1 2019	
Total in Work (6 mo pct change)	1.0%	0.6%	0.2%
Employees (6 mo pct change)	0.9%	0.6%	0.0%
Total Hours Worked (6 mo pct change)	1.0%	0.6%	0.2%
Short-term Unemployment (6 mo change, 000)	-36K	-29K	+3K
Vacancies (YoY pct)	15%	5%	-6%
Redundancies (YoY pct)	-6%	-5%	+42%

Note: The latest figures are generally for August-October 2019, other than vacancies which is for September-November 2019.
Sources: ONS and Bank of England.

Outlook – Risks of Continued Sluggish Growth

Let me turn to the outlook. In last November's *Monetary Policy Report*, the MPC's central forecast was for subdued near term growth, and a pickup in the spring of this year. That forecast was based on the assumption of an orderly transition to a deep free trade agreement between the UK and the EU. It was also based on the prevailing yield curve, which included a 25bp cut in Bank Rate. The forecast of an upturn in the economy was driven by two key inflexion points – a recovery in global growth, and reduced Brexit uncertainty. This outlook implied that slack would rise slightly in the near term, but that faster growth would propel the economy into excess demand two or three years ahead, leaving CPI inflation slightly above the 2% target three years ahead.

That relatively benign scenario is still possible. Brexit uncertainty has fallen a bit since last autumn. Risks of an imminent no deal Brexit have receded and it seems almost certain that the UK will formally leave the EU on January 31. Some UK-specific indicators of uncertainty – such as the DMP Brexit uncertainty index, the Deloitte CFO survey and the gap between the implied volatility of sterling over the next 12 months and the implied volatility of a range of other currencies – have fallen back from the highs of late 2019 (see figures 13 and 14). There appears to be a truce in the US-China trade war. Moreover, some modest fiscal easing is likely in the UK, given manifesto commitments during the election campaign.[14] We will know more once full Budget plans have been presented.

[14] The November *MPR* forecast was based on the existing fiscal plans – the 2019 Spring Budget and the September Spending Round. Those implied a roughly stable fiscal stance (measured by the cyclically-adjusted primary balance) in 2020/21. The extra commitments since then would imply that fiscal policy will loosen by about ⅓% of GDP in 2020/21. See Monks (2019).

Figure 13. UK – DMP Brexit Uncertainty Index

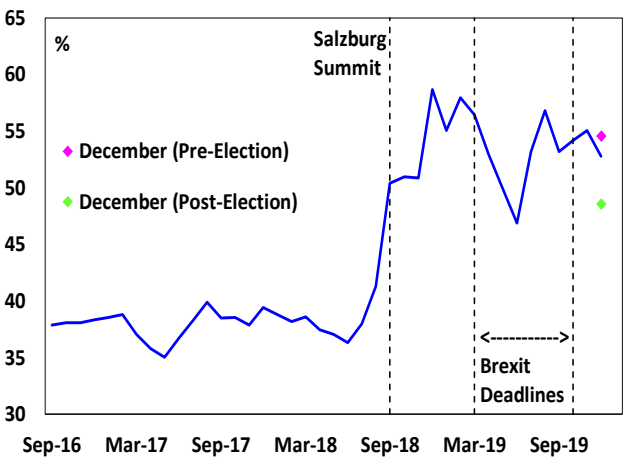
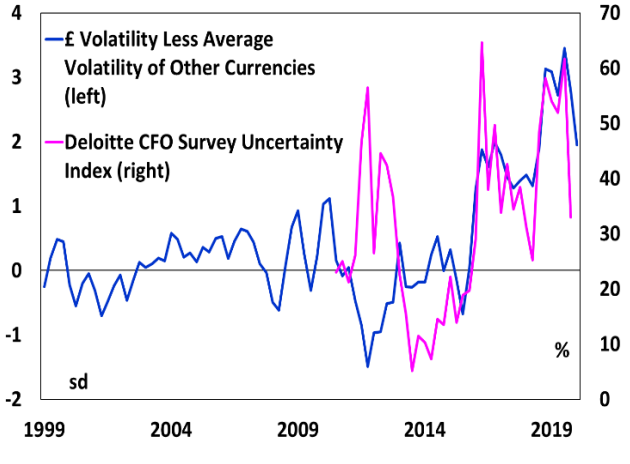


Figure 14. UK – Measures of Uncertainty Based on Deloitte CFO Survey and Sterling Volatility



Note: The results in the left chart are based on the question 'How much has the result of the EU referendum affected the level of uncertainty affecting your business?'. The charts show the percentage of respondents who view Brexit as 'their top' or 'one of their top three' sources of uncertainty. All values are weighted. The right chart shows the gap (standard deviations from average, over 1999-2015) between 12-month implied sterling volatility and 12-month volatility on a range of other major currencies, using the quarterly average of daily data. The Deloitte CFO uncertainty index is the share of firms that rate uncertainty as "high" or "very high". Sources: DMP Survey, Deloitte CFO Survey, Eikon from Refinitiv, and Bank of England.

But my own view is that, even if the economy improves slightly from the recent pace, risks for the next year or two are on the side of a more protracted period of sluggish growth than the *MPR* forecast. Those uncertainty gauges are still relatively high compared to the years just before the referendum, and there are grounds to be pessimistic on the two key inflexion points of faster global growth and reduced Brexit uncertainty.

Global growth may well continue to disappoint amidst high uncertainties over trade policy. Even with the recent roll-back of some tariff hikes, the previous trend of falling tariffs on US-China trade – which had been in place for over 25 years – has been pretty much fully reversed in less than 25 months (see figure 15).[15] Moreover, since the November *MPR*, we have seen the announcement of new US tariffs on goods from Brazil, Argentina and France, as well as the apparent breakdown in the WTO's appellate body. The genie of trade policy uncertainty is probably out of the bottle. All this casts doubt on whether the trend towards globalisation – a key driver of business opportunities and investment over recent decades – remains intact or is starting to reverse, making it harder for firms to decide whether, where and how much to invest.

Moreover, even though we now have clarity that the UK will leave the EU on January 31, it seems likely that Brexit uncertainty will remain high. There are still major uncertainties regarding the UK's future trade relations with the EU and other countries, including the extent of any transition periods. There is a non-negligible risk of a cliff edge at yearend. There are also uncertainties over the extent and direction of UK

[15] See Bown (2019).

policy changes in other areas, for example industrial strategy and regulation.[16] The DMP survey suggests that while Brexit uncertainty has fallen, an increasing share of firms do not expect Brexit-related uncertainty to be resolved until at least 2021 (see figure 16).[17]

Figure 15. US and China – Annual Average Bilateral Effectively Applied Tariffs on Trade in Goods

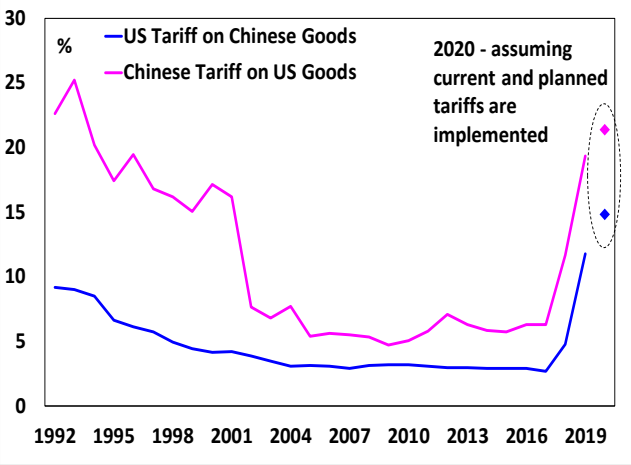
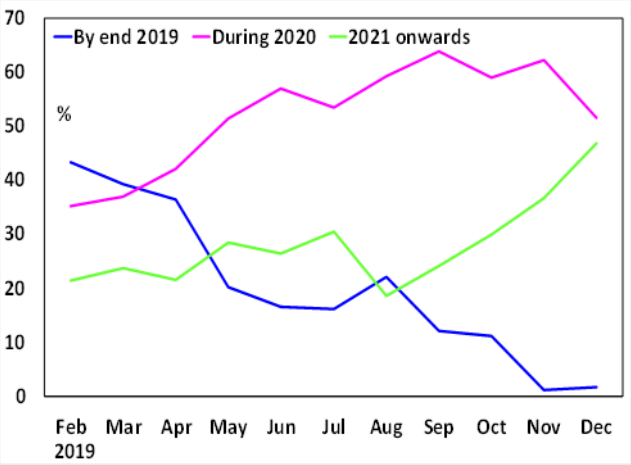


Figure 16. UK – Pct of Firms That Expect Brexit Uncertainties to be Resolved By End-2019, End-2020 or Later



Note: In the left chart, the figures are annual averages. Some tariffs announced during 2019 were reduced close to yearend, but the annual average tariff in 2020 is still set to exceed that for 2019 as a whole.

Sources: Freeman, Huang and Theodorakopoulos (2019), World Integrated Trade Solutions database, Ministry of Commerce of the People's Republic of China, Office of the United States Trade Representative, DMP Survey and Bank of England.

And, even if and when these uncertainties eventually fade, the recent experience may well, like previous crises, create lasting scars in terms of risk aversion and caution. For example, the Deloitte CFO survey suggests that – even with the recent drop in uncertainty – CFOs continue to prioritise defensive strategies (eg reducing costs, reducing leverage and increasing cashflow) rather than expansionary strategies (eg launching new products, capital investment and expanding into new markets), see figure 17.

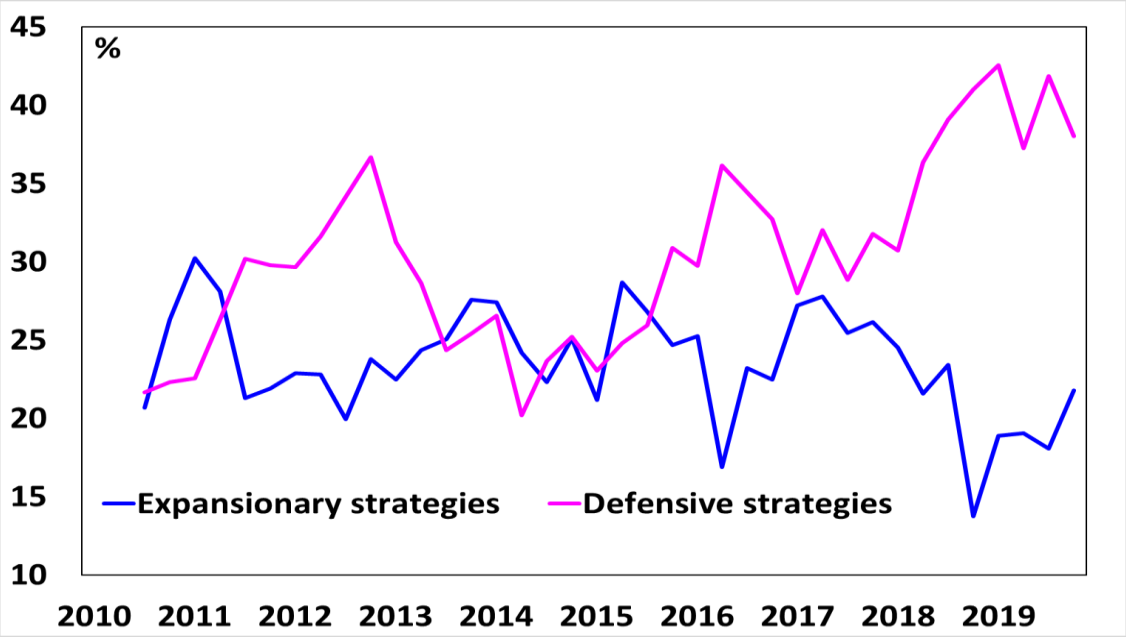
An extra downside risk is that the labour market may be about to turn more abruptly, given recent weakness in job vacancies, hiring intentions and profits. A weaker path for employment would probably imply some downside risks to consumer spending.

[16] The Withdrawal Agreement creates a transition period, intended to bridge the period between the date of EU exit and the entry into force of the new, yet to be negotiated, UK-EU partnership arrangements. The transition is scheduled to run until end-2020, with the possibility of extension for up to two years. That deadline is now only 11 months away, a relatively short period given that trade negotiations usually take some time to complete. On average it takes 1½ years to negotiate an FTA with the US, with a further two year transition period until the trade deal actually takes effect (see Freund and McDaniel (2016)). Related research by Moser and Rose (2012), looking at 88 regional trade agreements around the world, estimates that on average it takes about two years for trade deals to be agreed. Again, such agreements are typically followed by a lengthy transition period. The Withdrawal Agreement states that a decision on extending the transition period must be taken by mid-2020, just five months away.

[17] Firms that responded after December's election were, on balance, a little more likely to expect uncertainty to take longer to resolve.

A continued period of sluggish growth would, in turn, imply disinflationary pressures that threaten to keep CPI inflation below target 2-3 years ahead.

Figure 17. UK – Pct of CFOs Who Rated Expansionary and Defensive Strategies as a Strong Priority for Their Business in the Next 12 Months



Note: Expansionary strategies are introducing new products/services or expanding into new markets, expanding by acquisition and increasing capital expenditure. Defensive strategies are reducing costs, reducing leverage and increasing cash flow. Sources: Deloitte CFO Survey and Bank of England.

Some Issues in Monetary Policy

Let me turn to monetary policy. On the back of recent soft data and my view on the balance of risks around the outlook, I voted for a 25bp rate cut at the November and December policy meetings to underpin activity and reduce risks of a persistent inflation undershoot. I am not going to signal today how I will vote at the next MPC meeting, in late January. That decision will be made at the proper time, in light of all the data and analysis available.

But I want to make some general comments on the appropriate setting of monetary policy at present.

First, monetary policy cannot prevent the adverse effects on potential growth of Brexit and global trade policy uncertainty. Government policy choices in those areas will significantly affect the economy's prospects and living standards, not just in the next few years but over a longer horizon. Nevertheless, provided inflation expectations are well anchored and inflation is close to target, the Committee can aim to keep demand broadly in line with supply over time in order to achieve a sustainable return of inflation to target.

Second, unlike many major spending decisions for firms and households, monetary policy changes do not involve large sunk costs and hence the cost of reversal – for example, after a year or so – is relatively low in my view. As a result, whereas persistently high uncertainty may lead firms to inaction, the same does not necessarily apply to monetary policy. Monetary policy is a relatively flexible tool.

Third, the neutral level of interest rates may be lower than expected, with persistently high uncertainty reinforcing the downward effects on the neutral rate from factors such as low productivity growth and demographic change.[18] The MPC estimated in 2018 that the trend neutral interest rate in coming years will be a range of 2-3%, with a central estimate of 2¼%.[19] As the Committee noted, additional factors – less slow-moving than trends in productivity and demographics – can also affect the neutral level of rates. And, without being too definite, there are signs that persistently high uncertainty may be pushing down further on the neutral rate, both here and elsewhere. For example, growth has disappointed in the UK and externally even while policy rates across advanced economies are at or below most estimates of neutral. The consensus among external forecasters is that – even with the jobless rate around current levels and inflation around target – the UK policy rate will not return to 2% over the next five years (see figure 18). These medium-term rate expectations have fallen over the last year. The forward path of interest rates implied by gilt yields has continued to decline and indeed does not now exceed 2% at any point within the next 40 years (see figure 19). There are also signs of lower neutral rates in the US and EA.[20] If the neutral rate in the UK has fallen further, monetary policy may be providing less stimulus than intended.

Figure 18. UK – External Consensus for BoE Policy Rate Five Years Ahead

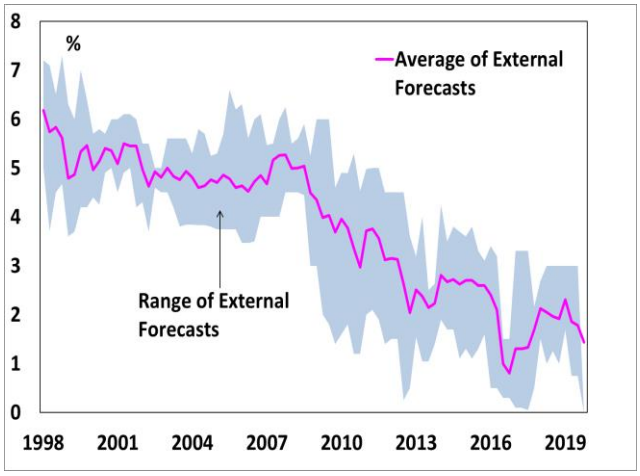
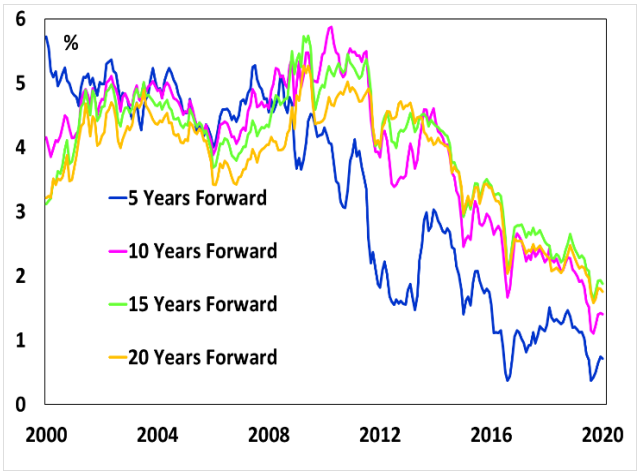


Figure 19. UK – Path for Overnight Rates Implied by UK Yield Curve



Note: In the right chart, 5-year forward rates are from the OIS curve since the start of 2009, gilt curve before that. Other forwards are from gilt curve. Sources: Eikon from Refinitiv, HM Treasury and Bank of England.

[18] See Lisack *et al.* (2017).
[19] See BoE *Inflation Report* of August 2018.
[20] Among Federal Reserve Board members and Federal Reserve Bank presidents, the median expectation for the US policy rate over the longer term has fallen by 50bp since Q3 2018. See Brainard (2019) and Lane (2019).

It follows from these points that if the current and prospective conditions of a modest output gap and subdued inflation are likely to persist, then it may be appropriate to cut interest rates further.

This directional bias is reinforced by risk management considerations. With a low neutral rate and limited monetary policy space, risk management implies that policy should respond in an asymmetric fashion – if tightening is needed, it should be gradual; if easing is needed, it should occur promptly. And when the economy is soft, as at present, it is better to err on the side of too much stimulus rather than too little.[21] This is because the MPC's ability to return inflation to the 2% target is asymmetric at present. If the economy overheats and inflation is above target, the MPC has ample scope to tighten policy to push inflation back down to target. But if the economy is stuck with sluggish growth and below-target inflation, the MPC has more limited scope for stimulus to lift inflation back to target.

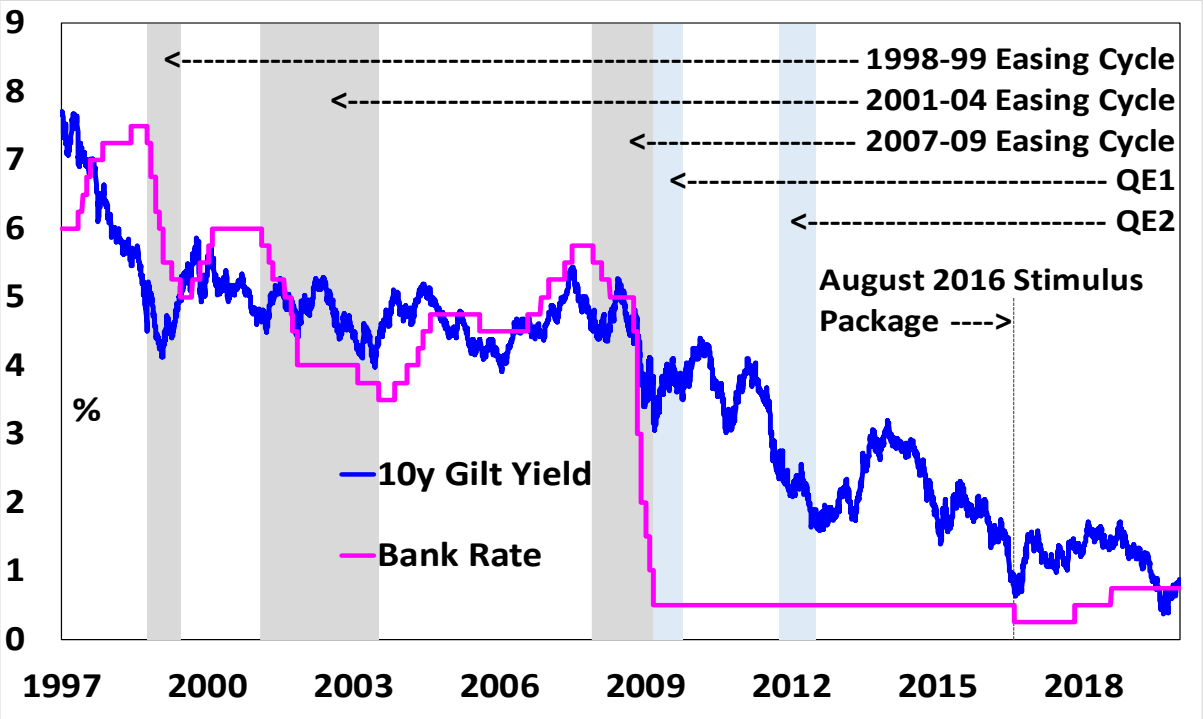
Let me spell out a bit what I mean by "more limited scope for stimulus". The MPC has the capacity to repeat the 2016 easing package and indeed expand further along the different dimensions of that package if required.[22]

However, scope for easing is more limited than in the past. The MPC has said that the effective lower bound (ELB) for Bank Rate is positive but slightly above zero, which implies that Bank Rate could be cut by slightly less than 75bp.[23] The MPC can expand QE further, pushing gilt yields down. But gilt yields are already quite low (10 year yields are around 70-80bp). As my MPC colleague Jan Vlieghe recently noted, if the policy rate hits its effective lower bound and is expected to stay there for many years, then longer term rates would probably be close to the effective lower bound, and at that point, scope to depress yields further may be limited.[24] To be sure, it might still be possible to add extra stimulus by skewing gilt purchases to the longer end. Moreover, the MPC could still expand QE or reintroduce forward guidance even if the entire yield curve is at the ELB. But the effectiveness of such measures may be less – and surely is less certain – under those conditions.

In all, as the Governor said last week, with the current toolkit, a reasonable judgement is that the combined conventional and unconventional policy space is in the neighbourhood of the 250 basis points cut to Bank Rate seen in the pre-crisis easing cycles of 1998-99 and 2001-04 (see figure 20).[25] That is a considerable amount of possible stimulus. But it is worth noting that those episodes were not recessions. It is pretty obvious in my view that, with the current toolkit, the MPC could not add stimulus on the scale of the 2008-09 recession, which saw Bank Rate fall by more than 500bp and the launch of QE.[26]

[21] See Evans *et al.* (2015), Kiley and Roberts (2017), Mendes *et al.* (2017), Evans (2019), Haskel (2019), Vlieghe (2019), and Williams (2019).
[22] The easing package of August 2016 consisted of a 25bp rate cut, Term Funding Scheme, £60bn of gilt purchases, and £10bn Corporate Bond Purchase Scheme. The asset purchases were financed by the expansion of reserves.
[23] See Bean (2013), Carney (2016).
[24] See Vlieghe (2019).
[25] See Carney (2020).
[26] Over the past 5 recessions, the policy rate has been cut on average by about 500bps (see Smith *et al.* (2019)).

Figure 20. UK – Bank Rate and 10-Year Government Bond Yield (Easing Cycles in Shaded Areas)



Sources: Bloomberg Finance L.P. and Bank of England.

With limited policy space, the risk management approach described above aims to reduce risks that the economy ends up in the difficult situation of a self-perpetuating low inflation trap with inadequate scope for monetary policy to return inflation to target.[27] Of course, it is possible that we cut rates now and then find that the economy rebounds and renewed tightening is appropriate, say a year from now. I don't think such a quick reversal is likely, but it is not inconceivable. I would not regard such a reversal, if it occurs, as a policy failure. It would be a benign outcome: monetary policy would have helped underpin the pickup and, given the economy currently has some slack, we would have time to tighten again before significant excess demand emerges. Conversely, if we defer easing near term and, in the event of persistent economic weakness, face the need for greater easing later on, then risks of a low inflation trap – which would certainly not be a benign outcome – would rise.

In my view, this issue has become more important over the last year, given the recent economic slowdown and the possibility that the neutral rate has fallen further. To be clear, the UK is not currently in a low inflation trap: the MPC has not exhausted its policy options, and inflation expectations are not unusually low. But you just have to look across other major advanced economies to appreciate that the risk of being stuck in a low inflation trap, with a self-reinforcing circle of caution, sluggish growth and depressed inflation expectations, is not just a theoretical possibility.

[27] See Bernanke (2020).

In steering through these challenges, the MPC will of course be guided by our remit and the aim of ensuring a sustainable return of inflation to the 2% target in a way that supports output and jobs.

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Appendix – Output Gap VAR

We model output gap dynamics using a simple Vector Autoregressive (VAR) model. A VAR is a system of equations that describes the dynamic evolution of set of variables based on their common history. Our model is based on a disaggregated approach to measuring the output gap, and includes measures of labour market slack and capacity utilisation. The variables in our model are all endogenous, ie each of them can be explained by an equation based on its own lagged values, the lagged values of the other variables, and an error term. The model is estimated over 2000-2019Q3 using quarterly data:

$$\begin{bmatrix} OG_t \\ CAPU_t \\ HGAP_t \\ UGAP_t \\ LPGAP_t \end{bmatrix} = \boldsymbol{c} + \boldsymbol{\Phi}_1 \begin{bmatrix} OG_{t-1} \\ CAPU_{t-1} \\ HGAP_{t-1} \\ UGAP_{t-1} \\ LPGAP_{t-1} \end{bmatrix} + \boldsymbol{\Phi}_2 \begin{bmatrix} OG_{t-2} \\ CAPU_{t-2} \\ HGAP_{t-2} \\ UGAP_{t-2} \\ LPGAP_{t-2} \end{bmatrix} + \boldsymbol{\varepsilon}_t$$

where:

OG$_t$ is the output gap, expressed as a percent deviation of actual GDP from its equilibrium (ie potential output).

CAPU$_t$ is the capacity utilisation within firms. This measure is based on business surveys by the CBI, BCC, BoE Agents, and CIPS (weighted across the different sectors of the economy) and expressed in standard deviations from the 2000-07 average.[28]

HGAP$_t$ is the gap between the current number of average weekly hours worked and their trend (or equilibrium) level.

UGAP$_t$ is the unemployment gap. This is expressed as the difference between the actual unemployment rate and its equilibrium rate.

LPGAP$_t$ is the labour participation gap, measured as the difference between actual and trend labour market participation.[29]

The VAR's impulse response functions allow us to trace how a shock propagates through the system. The experiment in this speech applies a shock equivalent to a 1% rise in the output gap, which affects all variables in the subsequent periods. Since for the purpose of this exercise we don't want to be explicit about the exact ordering of the variables, we calculate the generalized impulse responses as described by Pesaran and Shin (1998), as those do not depend on the assumed order in which the shock affects each variable.

In a stationary VAR as above, the impact of a temporary shock tends to fade over time as the variables converge back to their steady states. Therefore, imposing a persistent shock (as in figure 7) requires applying a series of shocks that – cumulatively – hold the total effect constant over time. (For example, a 1% deviation in GDP from potential in the second quarter is the sum of the second-quarter shock and the marginal impact of the first-quarter shock after one quarter, etc.) The arithmetic behind a gradual shock (as in figure 8) is very similar.

Overall, our results are consistent with the broader literature which suggests that factor utilisation tends to lead factor adjustment in the business cycle (eg Bils and Cho (1994)).

[28] See Ellis and Turnbull (2007) for a discussion of capacity pressures within firms.
[29] See Berry *et al.* (2015) for a detailed discussion of different measures of labour market slack.