May 25, 2023

In confidence until published by the Treasury Committee

Treasury Committee Appointment Questionnaire for Megan Greene

1.Do you have any business or financial connections, or other commitments, that might potentially give rise to a conflict or perceived conflict of interest in carrying out your duties as an external member of the MPC?

No, I have no connections or other commitments that might potentially give rise to a conflict or perceived conflict of interest in carrying out my duties as an external member of the MPC.

I expect to teach a few seminar series at Brown University, Schwarzman College and the European University Institute, none of which will touch on monetary policy. Most of this teaching will be done remotely over zoom, and so will require very little international travel from London (to which I will relocate).

I also aim to complete the book I am writing on the new drivers of wealth and income inequality and potential remedies for them. My book will not touch on monetary policy and does not relate to my prospective role as an MPC member; I am looking at the longer-term, structural drivers of inequality and so monetary policy interventions will not be included.

Finally, I expect to continue to serve as a member of the Academic Advisory Committee at the San Francisco Federal Reserve and on the advisory boards of Rebuilding Macroeconomics (an interdisciplinary, academic research agenda based at the Institute for Global Prosperity at University College London (UCL) and funded by the ESRC) and Econofact (an independent and non-partisan organization that publishes academic writing about timely economic issues in plain English to educate the public). I also plan to remain a non-resident Senior Fellow at Chatham House and member of the Council on Foreign Relations and Bretton Woods Committee.

I declared my interests as part of the application process to become an MPC external member; I have also raised all of these commitments with the Secretary of the Bank and confirmed that they do not pose a conflict or perceived conflict of interest in carrying out my duties in this new role, in line with the MPC's statutory conflicts code.

Finally, for completeness and in the interest of transparency with the committee, I have stood down/will stand down from a number of positions before taking up my role as a member on the MPC. The details are included on my CV.

2.Do you intend to serve out the full term for which you have been appointed?

Yes, I plan to serve the full term and to relocate to London to do so.

3.Do you have, or do you intend to take on, any other work commitments in addition to your continuing membership of the MPC?

Please see my answer to Q1. I have no plans to take on any additional work commitments.

4. Please explain how your experience will inform your role as an external member of the MPC. To which areas of the MPC's work do you expect to make particular contributions?

An external member of the MPC must bring an independent, outside perspective to the committee. I have a unique background combining private sector experience, academia and policy work.

For over 15 years, I worked in applied global macroeconomics on the sell side, the buy side, and business services. Working directly with portfolio managers as the Global Chief Economist at John Hancock/Manulife Asset Management and with business services leaders and their clients as Global Chief Economist at Kroll, I have closely followed both financial markets and the business operating environment globally.

The experience I have developed in these roles is particularly crucial at a time when monetary policy is seemingly transmitting into financial markets more effectively than into the real economy. It is also crucial at a time when liquidity is waning as central banks tighten monetary policy (though reserves are still ample). The repo rate spike in 2019 in the United States shows that even core markets in advanced economies can be vulnerable to dislocation under these conditions, and debt distress among corporations and households is likely to rise. This should influence the UK economy and, therefore, monetary policy.

I have also had a foot in academia, serving as a Senior Fellow at the Mossavar-Rahmani Center for Business and Government at Harvard Kennedy School for three years before moving to the Watson Institute for International and Public Affairs at Brown University. I've been teaching seminar series and am writing a book on the drivers of and remedies for income and wealth inequality within developed countries.

As a member of the San Francisco Federal Reserve Bank's Academic Advisory Committee, I have experience working on a committee that helps guide the President of the SF Fed and senior staff members' thinking on the Fed's monetary policy stance (this committee has no role in bank supervision or resolution). This has given me useful insights on central bank reaction functions. As a eurozone expert, I promoted the ECB's use of TLTROs to create dual interest rates in the eurozone (which it ultimately adopted), and contributed to the first asset quality review and ECB bank stress tests in 2014 as a member of an advisory board at PricewaterhouseCoopers.

In shaping the Bank of England's monetary policy stance, it is crucial for MPC members to highlight where their views might differ from others' and work with committee members to build a prevailing narrative. I have a long track record of making out-of-consensus calls that ultimately came to fruition, while building support for them across various different stakeholders. I cut my teeth as a macroeconomist covering Western Europe at the Economist Intelligence Unit (EUI) and Roubini Global Economics (RGE). I became well-known for my very early prediction of the euro crisis, and particularly Greece's default and Ireland's bailout.

Building a narrative for the monetary policy stance is not just crucial within the committee but outside of it as well. Central banks have a challenge of communicating technical details in plain English to financial market participants, parliamentarians and the general population. This will be even more the case over the next few years as the MPC pursues price stability in the face of successive shocks to the economy. Explaining how the MPC is working to achieve its remit in the face of these shocks will be important in ensuring the smooth transmission of monetary policy to the real economy.

I have significant experience communicating complex ideas in plain English for various audiences. I have written a regular column for the Financial Times and have frequently written for Politico and Bloomberg Opinion. I have also been a regular guest on broadcast TV and radio shows at both financial and retail news outlets globally. As an academic, I teach macroeconomic subjects to graduate students who may or may not have a background in economics. I have also given keynote speeches at conferences for financial services executives and for C-suite representatives from corporates across sectors. And I have frequently been invited to give presentations to policymakers, particularly by Treasury officials and central bankers in the US, UK and eurozone.

For years, the Bank of England has been a leader in exploring how central banks might reduce the risk that climate change poses to the financial system. The MPC's remit was updated to reflect the UK government's commitment to deliver Net Zero. I have examined the potential role of central banks in supporting and incentivising the green transition as a member of the Regenerative Crisis Response Committee. I would aim to continue this innovative thinking with my colleagues at the Bank of England.

With the economy facing successive shocks, a lot of macroeconomic indicators are not evolving as one might expect given significant monetary policy tightening (one example is the labour market, which has remained surprisingly tight). The top-down data tell a very mixed story. One way to better understand how the economy is responding to monetary policy is to overlay macroeconomic indicators with a more bottom-up approach, not only speaking with businesses and interpreting the intelligence they offer but examining their data forensically to gauge trends in hiring and pricing. I aim to use my private sector experience to contribute to the MPC's work in this area.

5. How do you assess your current state of knowledge about the UK economy and monetary policy in the UK, and are there any areas in which you need to develop your understanding?

I am looking forward to exploring the UK economy in greater detail once I start at the Bank of England and have access to data, analysis and forecasting tools. That said, I've spent more than half of my career living and working in London and covering global macroeconomics and finance. I have therefore developed an expertise on the UK economy and markets and have continued to follow the UK economy closely even after moving back to the US. I have testified in the House of Lords a number of times on various topics, including Brexit and the euro crisis. I have also given evidence to the HM Treasury in advance of the IMF/World Bank meetings.

Furthermore, many of the themes I've examined as a global economist are directly relevant to the UK economy and therefore to the work of the MPC as well. These include the pass-through of monetary policy to financial markets vs the real economy, the pandemic's impact on the labour force participation rate, the reaction functions of central banks, the feedback loops between financial and macro stability, the use of unconventional monetary policy tools to address financial instability, the impact of QT on financial markets and the real economy and the potential implications of central bank digital currencies.

6. Which of your articles, papers or other publications are of most relevance to your future role as an external MPC member?

I have written extensively on international macroeconomics and finance. A full list of my publications is provided in my CV, but I have included some recent pieces here that help demonstrate my areas of

expertise, analytical thinking and communication skills. Most of my writing deals with real-time issues as opposed to focusing strictly on theory, which should benefit the MPC as it responds to real-time data and developments. I have split my pieces into four categories: monetary policy and central banking, global economics, European economics and US economics. While my focus has been truly international, many of the issues I have explored in these pieces also apply to the UK and will impact the UK economy and monetary policy.

Monetary Policy and Central Banking:

I have written extensively on monetary policy tools, gauges for inflation, central banks and climate change and central bank digital currencies. Some recent examples include:

Global banking is now inside Schrödinger's box, March 19 2023, Financial Times.

QE has become 'Hotel California' for central banks, February 22 2023, Financial Times.

Bank of Japan needs the courage to change course, January 3 2023, Financial Times.

There's one inflation gauge that bucks the trend, Oct 31 2022, Financial Times.

Why Central Banking Must Go Green, Sep 12 2022, Project Syndicate.

How the Fed Could Go Green Faster, April 9 2021, Project Syndicate.

Central banks need to go slow on digital currencies, August 26 2021, Financial Times.

Dual interest rates give central banks limitless fire power, with Eric Lonergan, Sep 3 2020, VoxEU.

Global Economics:

I have covered structural and cyclical macroeconomic issues across the globe, including the potential for an emerging market sovereign debt crisis, the impact of commodity prices fluctuations on different economies, globalisation, the green transition and productivity growth. Some recent examples include:

Ignoring China's disastrous 'three Ds' could be a global risk, Sep 6 2022, Financial Times.

Trouble is coming for emerging markets beyond Sri Lanka, July 28 2022, Financial Times.

Food insecurity is a bigger problem than energy, May 16 2022, Financial Times.

Don't believe the deglobalisation narrative, Nov 16 2021, Financial Times.

Leaders must be more upfront about the costs of saving the planet, Nov 1 2021, Financial Times.

Productivity growth is almost everything in the post-Covid recovery, Sep 29 2021, Financial Times.

Boosting brain health is key to a thriving economy, Aug 12 2021, Financial Times.

The G7 is right to worry about Chinese credit terms, June 17 2021, Financial Times.

Europe Economics:

I have also written on structural and cyclical factors in Europe and the UK, including on the reconstruction of Ukraine, the UK LDI crisis and its implications elsewhere, the green transition, the

absorption of EU recovery funds and the differences between US and European/UK labour markets. Some recent examples include:

Europe's long-term security will rest on the reconstruction of Ukraine, December 18 2022, Financial Times.

UK market turmoil is a harbinger of global events to come, Oct 11 2022, Financial Times.

Europe must use all its financial firepower to fund the green transition, Aug 18 2022, Financial Times.

The EU must decide how to fund its Ukraine crisis response, March 16 2022, Financial Times.

Recovery fund will test the appetite of Europe's governments for reform, July 12 2021, Financial Times.

U.S. unemployment is higher than Europe's now. But we'll likely recover faster, May 1 2020, Washington Post.

US Economics:

I have written extensively on the US economy, including on financial stability, the impact of fiscal stimulus on growth and inflation, the US dollar as the global reserve currency, the evolution of the labour force participation rate and the use of multiple equilibria to understand the economy. Some recent examples include:

What the protracted game of chicken over First Republic tells us, May 1 2023, Financial Times.

Commercial real estate is bruised but not broken, April 13 2023, Financial Times.

Forget Groundhog Day vibes on debt ceiling — this time it's different, February 7 2023, Financial Times.

The deflating of the great cash cushion, Dec 1 2022, Financial Times.

Democrats lack the tools they need to fight inflation, July 18 2022, Financial Times.

King Dollar is in no danger of losing its world financial crown, April 12, 2022, Financial Times.

Why US workers will return to the labour market, Feb 2 2022, Financial Times.

Joe Biden's experiment could revolutionise economic thinking, May 6 2021, Financial Times.

The Monetary Policy Committee

7. The current MPC remit sets an inflation target of 2 per cent at all times, but it also allows the MPC to tolerate temporary deviations of unspecified length in order to avoid "undesirable volatility in output". How do you interpret this mandate and the degree of flexibility it offers?

The current remit as reiterated by the Chancellor confirms the primacy of price stability, with a symmetric Consumer Price Index (CPI) inflation target of 2 per cent year-on-year at all times. Subject to that, a secondary objective of the MPC is to support the economic policy objective of the Government, which is to achieve strong, sustainable and balanced growth.

In pursuing its price stability objective, the remit recognises that the MPC may wish to tolerate temporary deviations of inflation from target if attempts to return inflation to the target too quickly would result in undesirable volatility in output.

There are some shocks to the economy that require a straightforward response from the MPC. This is the case with demand shocks, which push output above/below potential and inflation above/below the target. In this case, there is no conflict between stabilising inflation and output. The MPC can use monetary policy to lean against/stimulate demand so that inflation returns towards the target as output is nudged towards its potential.

When there are supply side shocks that are strictly transitory in nature and push inflation above or below the target, the MPC should look through them. But when supply shocks are lasting, the MPC can face a trade-off between inflation and output.

In this scenario, the MPC must navigate this trade-off with a view towards achieving its inflation target in the medium-term. It is important to adopt a medium-term outlook (ie: a few years) rather than a long-term one (ie: 5-10 years) in order to keep inflation expectations grounded and to maintain the credibility of the inflation target.

For example, suppose there is a sustained shock to energy costs that pushes inflation well above the 2 per cent target and growth below potential (as higher petrol and utility bills weigh on consumers and businesses), while Bank Rate is at the neutral rate. If the MPC were only focused on returning inflation to its target as quickly as possible, it would hike Bank Rate immediately and aggressively. This might lean against inflation by depressing demand, but could also push the economy into a recession. Ultimately, the demand shock from a recession could bring inflation down below the 2 per cent target, in turn necessitating rate cuts to return inflation to 2 per cent. This volatility in output and interest rates is a sub-optimal outcome; it undermines consumer and business confidence and uncertainty can cause financial conditions to tighten.

Alternatively, the MPC could recognise that growth below potential might do some of its work for it, dragging on demand. Taking a medium-term perspective, it might raise rates only moderately. Inflation might diverge from the 2 per cent target for longer in this scenario, but a recession would be avoided, interest rates would be less volatile and inflation would still return to the target.

The MPC must also consider that its tools feed through into financial markets and the real economy at different speeds. Economists typically cite the lags of monetary policy as being 18-24 months, but these lags can be unpredictable. The MPC therefore needs to proactively act to address inflation dynamics coming down the line instead of using its tools to react to inflation dynamics that already exist. This too supports the notion that the MPC should take a medium-term view towards achieving price stability rather than aiming to constantly fine-tune Bank Rate to maintain inflation at 2 per cent.

The flexibility embedded in the MPC's remit allows the committee to take into account the kind of shock that has hit the economy, the efficacy of its tools to address the shock and the time horizon over which it should aim to achieve its inflation target given the need to avoid undesirable volatility in output.

8. Is the accountability process delivering better public understanding of decisions made by the MPC? Based on your experience, are there ways in which either the accountability process or the MPC's public communications could be improved?

The accountability process of the MPC has undergone a sea change over the past decade, and this should be applauded. But more can always be done. The MPC has the power to impact whether people have jobs and, in the short run, whether their standards of living are falling or rising. With this kind of power, it must be held accountable.

One metric for success is the MPC's ability to achieve its primary mandate, CPI of 2 per cent year-on-year, at all times.

A key to accountability for the MPC is transparency. The BoE implemented a number of changes in response to the 2014 Warsh review on transparency and accountability. Alongside quarterly Monetary Policy Reports, the public now has access to reasons for an interest rate change alongside every MPC meeting, with immediate publication of minutes of the meeting and a summary (minutes for other central banks like the Fed are only released with a lag), detailed forecasts generated by the staff but owned by the MPC (unlike at the ECB where the forecasts are owned by the staff), guidance about the reaction function of the MPC and a transcript of the press conference and opening statement.

The MPC is accountable to Parliament and, through Parliament, to the public it serves. Hearings with the Treasury Select Committee are a critical part of the MPC's accountability to Parliament, in which I'm grateful to partake.

To enhance its transparency with the public, the Bank of England has adopted a layered communications strategy to generate content for all kinds of different learning styles. As a rare economist who doesn't love charts, I appreciate that we all digest information differently; some prefer graphs and some prefer prose.

But the information flow with the public must go both ways. This is already done through the Bank's network of agents across different regions of the UK, which provide a constant flow of information to the MPC. In addition to benefitting from agent surveys that help inform the MPC's understanding of the economy, MPC members embark on agency visits to hear from local businesses and to explain the MPC's forecasts and decisions to the wider community. This two-way flow of information is invaluable in an environment in which the top-down data is giving some mixed signals and isn't responding as traditional theory suggests it should. Public engagement isn't just for the public's sake; it stands to benefit the MPC as well.

Transparency can only be assured if the MPC is speaking in a language its audience understands. The Bank of England has tried to achieve this by boosting education around what it does. It has developed curriculum materials EconoMe and Money and Me. It has also developed a network of Citizens Panels across the UK to absorb a diverse spectrum of views from the public. Finally, the Bank has a blog, Bank Underground, which aims to express complex issues in a digestible way.

The MPC has gone to great lengths to engage with various stakeholders to make its views and reaction functions known and understood. The difficulty for many economists is to speak the language its audience speaks over a medium its audience can digest. Here I think there is always room for improvement.

9. How do you intend to add to the public's understanding of the role and decisions of the MPC?

I think my communication skills will help me to add to the public's understanding of the role and decisions of the MPC. For years I have had one foot planted in academia, one foot planted in policy, one foot planted in the private sector and (through my regular column in the Financial Times and engagement with media) one foot planted in communications to the public. This means I have

learned to effectively assimilate lessons from each and communicate in plain English to a wide variety of audiences.

I have experience in communicating complex ideas in a digestible format to central bankers and Treasury officials (in the US, UK, eurozone and Japan), institutional and retail investors and members of the public. I think this will help me contribute to the MPC's transparency and therefore accountability. I have excelled in communicating these ideas in various different formats: policy meetings, investment committees, print, radio and TV media and social media.

I have been an effective translator between different stakeholders and aim to continue to be as a member of the MPC. This does not just involve communicating on behalf of the MPC. As a relentless extrovert and an economist with significant experience in the private sector (both financial markets and corporates), I look forward to visiting businesses and consumers around the UK and also communicating their experiences with the economy and with MPC policy back to the Bank of England. I also intend to visit a range of schools through the Bank's Outreach programme.

The economy and monetary policy issues

10. What do you see as the causes of the ongoing outbreak of inflation, and how do you assess the response to date of the MPC?

Having not started at the BoE yet, I only have access to publicly available information. That said, there are a number of first- and second-round effects that seem to be buoying inflation in the UK. As was the case in other countries, there was a simultaneous surge in demand for goods during the pandemic just as global supply chains were disrupted. This impetus for inflation has eased moderately, as consumers have shifted spending away from goods back towards services (with services inflation picking up moderately in the UK) and as global supply chain pressures have eased.

Russia's invasion of Ukraine in February 2022 pushed energy and agricultural commodity prices up significantly. Energy costs have since come down (crude brent oil prices are down back near levels seen in early 2022 before the invasion, while wholesale gas futures have fallen but remain above the pre-pandemic average). But the impact on consumers and businesses may come with a lag, in part owing to the Ofgem price cap mechanism and in part because some firms are on fixed contracts that will not renew until later this year. Food price inflation remains high, owing to higher energy costs and adverse weather. Energy and food prices account for about half of inflation in the UK. But even stripping these out, core inflation remains elevated. This is partly because energy is a key input into nearly all tradeable goods.

In addition to these direct factors buoying inflation, there have been second-round effects that must be watched closely. The labour market has remained tight and wage growth robust. Unemployment has ticked up from a low of 3.5 per cent in August 2022 to 3.9 per cent in March, but this remains well below the pre-pandemic average. The labour force participation rate remains below pre-pandemic levels (though has been ticking up slowly), and so labour supply has been constrained. The vacancies-to-unemployment ratio and job-to-job flows both remain high (although both are slowly falling). A tight labour market stokes wage pressures, with average weekly earnings growing by just under 6 per cent year-on-year in March. This could influence wage-price dynamics if firms pass on higher labour costs to consumers in the form of higher prices. According to the Agents' pay survey in February, inflation was the top factor expected to drive pay settlements this year.

Another second-round effect buoying inflation may be corporate pricing power, which affects how far firms are able to raise prices to rebuild their margins. According to the latest Decision Maker Panel (DMP) survey, almost 60 per cent of firms responded that in the current, high inflation environment, they are changing prices in response to events or thresholds. Only around 40 per cent of respondents are still adjusting prices on a fixed schedule. This suggests the pass through from corporate pricing power may be faster than it has been in the past.

The MPC was faster than most developed country central banks to accept that the factors driving up inflation in the UK were not, in fact, transitory. The MPC began the current rate tightening cycle in December 2021, much sooner than the Federal Reserve (March 2022) and the European Central Bank (July 2022). It also began quantitative tightening (QT) in February 2022, earlier than the Fed (June 2022) and the ECB (March 2023). The BoE remains the only major central bank to engage in active QT, selling assets rather than just letting them roll off the balance sheet as they mature.

The MPC was quick to recognise that inflation would be persistently high and to respond, but it responded more moderately than some of its counterparts. While the BoE engaged in 25 basis point hikes from December 2021-June 2022 before shifting up to 50 basis point hikes in August, the Fed hiked more aggressively (by 50 basis points in May and 75 basis points in June and July 2022). This may have been necessitated by the Fed's relatively slow start to hiking rates. The drivers of inflation and the monetary policy stance differ in the UK vs the US as well, so a direct comparison is decidedly imperfect. With the benefit of hindsight, we now know that inflation remains persistently high in the UK and the labour market continues to be tight. But policymakers don't make policy with the benefit of hindsight, they have to respond to developments in real-time based on the information then available to them.

11. What is your assessment of the overall prospects for UK and global economic inflation, growth and unemployment over the short and medium term, and what do you see as the main upside and downside risks?

I look forward to learning more about the UK economy as I am onboarded at the BoE and have access to data, analysis and models. The prospects for UK and global growth look much better now than they did just six months ago. This is partly a result of warmer weather than expected last winter in the UK and Europe (reducing demand for expensive energy), labour hoarding in the US (resulting in continued labour market tightness and robust consumption) and an earlier than expected scrapping of the Zero Covid policy in China (resulting in an economic recovery, albeit with relatively muted spill-over effects given it is consumption-driven).

The BoE has just revised up its growth forecasts for the UK significantly so that the country is due to avoid a recession this year. That said, growth in the UK will remain very weak in the short-term. UK inflation has remained stubbornly high, though there are signs it should abate in the second half of this year. This is partly due to base effects (large price increases from a year ago dropping out of the year-on-year comparison) and lower energy prices. However, questions remain about how quickly second-round effects from the labour market and corporate pricing power will abate.

The labour market, while tight, is easing moderately. Inactivity is falling, the number of retired people has dropped below pre-covid levels, unemployment has risen slowly, the vacancies-to-unemployment ratio is falling and job-to-job flows are slowing. These are all signs that slack in the labour market is increasing as labour demand abates and labour supply slowly improves. This should take some upward pressure off of wage inflation, and therefore price inflation.

As mentioned previously, a majority of firms in the DMP Survey have reported that they are changing prices in response to events or thresholds rather than on fixed time intervals. This means the passthrough of higher input costs into consumer prices has been faster. As input costs grow more slowly, consumer prices should as well. But if firms are able to rebuild their margins by continuing to raise prices, they might do so. This suggests consumer price inflation may remain sticky.

Over the medium-term, the UK faces some structural headwinds with lower potential growth. This was highlighted in the February MPR, with productivity growth expected to slow from an average of 2 per cent in the decade before the global financial crisis to 0.5 per cent by 2025. Potential growth is expected to fall from 2.7 per cent in the decade before the global financial crisis to 0.7 per cent by 2025. Official population growth estimates have been revised upwards since then. But, even so, this means that output growth much in excess of 1 per cent in the medium-term could cause inflationary pressures to build.

Beyond the UK, the eurozone is likely to avoid recession this year, thanks in part to a warmer winter and lower energy costs. I expect the US will go into recession towards the end of 2023 or beginning of 2024. The US economy has held up well in part because the labour market has remained incredibly tight in the face of aggressive rate hikes. Anecdotally, labour hoarding is a significant component of this; firms are hanging on to workers in the hope they can weather any economic weakness and avoid having to find talent given it proved so difficult as the economy reopened after the pandemic. The Chinese government has set a target of 5 per cent growth this year, and may exceed it. The recovery will likely be consumption driven, and consequently the spill-over for the rest of the world for both growth and inflation will be more muted than in previous Chinese expansions.

There are three main risks to my outlook for the UK and global economy. First is a risk of financial instability. As major central banks are tightening monetary policy, liquidity mismatches and poor interest rate hedging have resulted in financial instability. As central banks have shrunk their balance sheets, liquidity is waning and we may hit additional pockets of market dislocation (please see my answer to question 16 for more details). Additional financial instability could feed through into output in two ways: 1) it could sap consumer and business confidence and 2) it could cause banks to extend fewer loans, generating a credit crunch. So far, central banks have successfully addressed these incidents of financial instability with liquidity operations. If this becomes a regular occurrence, clear communication will be crucial to avoid any inference that these operations are inflationary.

A second risk is that labour market hoarding stops abruptly. Labour hoarding is a bigger phenomenon in the US, where firms laid off workers during the first pandemic lockdown and then had an incredibly difficult time recruiting workers when the economy reopened (in the UK and Europe, more of an effort was made to maintain a connection between workers and employers during the Covid lockdowns). The latest DMP survey suggests UK firms also prefer to hang on to staff in the face of higher labour costs and a weak growth outlook given previous recruitment difficulties. If corporate earnings fall, firms might decide it no longer makes sense to hoard workers and could lay many of them off. This would have significant implications for consumer confidence and for consumption and could prompt a recession.

A third risk is that geopolitical tensions result in an accelerated fragmentation of the global economy. So far, macroeconomic indicators such as world trade-to-GDP, foreign direct investment (FDI) flows and capital flows suggest that globalisation is proceeding more slowly but that on the whole the world is not deglobalising. Certain industries deemed to be of national strategic importance (ie: semiconductors) are decoupling, but overall firms continue to be plugged into

sophisticated global supply chains. If fragmentation and decoupling is accelerated, this would drag on productivity and growth and would be inflationary, all else equal.

12. How should monetary policy take into account financial stability risks?

There are separate tools to address macro stability and financial stability issues. Interest rates are used to manage swings in inflation and output while micro- and macroprudential tools are used to manage financial risk. At the Bank of England, the MPC is in charge of monetary policy and the Financial Policy Committee (FPC) conducts macroprudential policy. According to the MPC's remit, the MPC and FPC should consider one another's actions to ensure coordination between monetary and macroprudential policy. The remit also suggests that macroprudential policy tools are the first line of defense in the event of financial instability, but that the MPC may choose to allow inflation to temporarily deviate from inflation in order to avoid boosting imbalances that feed financial instability.

Financial stability risks should therefore be one input into the MPC's deliberations. The question is how significant an input they should be. In theory, successful macroprudential policy ensures that the financial system is sufficiently robust to have only a muted impact on economic cycles. But the UK is an open economy, and so financial conditions are significantly influenced by external forces. In the lead up to the global financial crisis, for example, the vast majority of the expansion of British bank balance sheets involved overseas assets that were not particularly exposed to domestic interest rates.

While macro stability and financial stability tools are in theory distinct, in practice there is a grey area where they overlap and impact one another. Financial instability can sap consumer and business confidence, dragging on consumption and investment. It can also cause banks to pull back on lending, generating a credit crunch that is a significant headwind to growth. This is disinflationary, and so impacts the MPC's approach to achieving its 2 per cent CPI target. Monetary tightening or loosening in this environment—either by changing interest rates or using the balance sheet—can impact financial conditions, which in turn can exacerbate or alleviate financial instability.

As central banks globally tighten policy and shrink their balance sheets, liquidity is waning and we may see additional market dislocations in the banking and non-banking sectors. I expect the MPC and the FPC will therefore have to operate in this grey area where financial and macro stability interact, and coordination will be necessary. There is ample opportunity for this at the BoE. The Governor, Deputy Governor for Monetary Policy, Deputy Governor for Financial Stability and Deputy Governor for Markets and Banking sit on both the MPC and FPC, facilitating the flow of information. Furthermore, there are regular meetings between the two committees.

13.What is your assessment of the current level of spare capacity/output gap, and how do you expect it to develop?

I will have a more granular view on the output gap in the UK once I have started at the Bank of England and have access to data, analysis and forecasting models.

The output gap is the difference between the levels of observed GDP and estimated potential output. If the former exceeds the latter, then inflationary pressures build. With the UK roughly stagnating this year, I expect that actual GDP growth will be below potential growth and so the

output gap will decline. By the end of the MPC's forecast period, I expect GDP growth will accelerate as potential growth wanes, and so the output gap should increase.

Potential growth consists of two components—the change in the amount of labour working in the economy and the sustainable growth in the productivity of that labour. Labour supply is expected to grow more slowly in the UK (and most other developed economies). This is partly because of population ageing; workers will retire and older workers tend to work fewer hours. Inactivity increased significantly in the UK, in part a result of older workers deciding to retire. Much of the decline in the labour force participation rate is a result of long-term sickness, either from Long Covid or from delayed treatments for other conditions as a result of the pandemic. The labour force participation rate has ticked up moderately in recent months, but is unlikely to recover to pre-pandemic levels.

Brexit is likely to have impinged on productivity growth. One way to boost productivity growth is to invest in new capital. Business investment in the UK has suffered since Brexit. This is partly a result of general uncertainty, which caused businesses to put off capital expenditure. It may also be that resources were diverted to Brexit preparations instead of capital spending. The Covid pandemic and the impact of Russia's invasion of Ukraine have increased uncertainty and weighed on business investment as well. Investment fell significantly during the pandemic and remains well below its pre-Covid peak.

A reduction in potential growth over the medium term has monetary policy implications. It lowers the threshold for demand to be inflationary. However, the output gap should not be overly emphasised as a tool for determining the monetary policy stance of the Bank of England. Its biggest drawback is that it is extremely difficult to measure at the best of times, let alone when an economy has been hit by a pandemic, a nearby war and a cost-of-living crisis. For this reason, the MPC should use the output gap as one guide among many others, including top-down and bottom-up metrics of labour force dynamics, firm and consumer behaviour, inflation expectations and financial conditions.

14. What assessment have you made of the impact of Brexit on the UK economy to date? What nature and magnitude of ongoing effects do you expect?

Brexit seems to have weighed on investment and consequently on productivity growth in the UK. I have addressed this in part in my response to the previous question, but will provide some more details here.

While Brexit-related uncertainty has dragged on business investment in the UK, there is also a compositional effect. Exporters tend to be more productive, and demand for exports has most likely fallen given the UK's new relationship with its largest trading partner, the EU.

MPC member Jonathan Haskel and Josh Martin estimated the impact of Brexit on business investment. This is important because business investment is one way to boost the capital stock, improve productivity and raise potential growth. A higher potential growth raises the threshold at which demand growth becomes inflationary. They devised a longer-term average growth rate of investment, adjusted for the impact of the pandemic, to estimate that business investment in the UK is about 10% lower than it would have been had the UK not left the EU.

Using a completely different methodology, John Springford from the Centre for European Reform employed algorithms to find the best combination of other countries to match the UK economy

before Brexit. Based on this so-called “doppelgänger” methodology, he estimates that the shortfall for investment in the second quarter of 2022 was roughly 11 per cent.

Brexit, of course, hasn’t been the only factor impacting consumer and business uncertainty or investment. Covid, the Russian invasion of Ukraine and the cost-of-living crisis and weak growth have also weighed on investment and growth. It is near-impossible to determine how much each of these individual forces have dragged on investment, productivity and potential growth. The specific estimates for magnitude are instructional but should be taken with a grain of salt. The direction is what is most important. Brexit has most likely reduced potential growth over the short- and medium-terms, with implications for inflation and monetary policy.

15. What role do money supply growth and asset prices play in inflation, and what role should they play in setting monetary policy?

Monetary targeting was in its heyday in the 1970’s and 1980’s, but monetary aggregates have since lost relevance as the relationship with inflation has weakened considerably. In the UK, for example, broad money growth slowed significantly between 1992-2007 and 2008-2019, and yet inflation remained fairly stable across the two periods. Some research suggests that the relationship between money supply and inflation depends on the inflation regime; it is strong when there is high inflation and weak when there is low inflation. The causal relationship remains unproven, but there may be some signalling value from monetary aggregates. Money supply is not a particularly useful guide for monetary policy, but given the number of successive shocks the global economy has withstood, any signals are potentially useful and should not be ignored entirely.

Asset prices, on the other hand, are a much more useful guide for monetary policy. When policy decisions are anticipated or announced, they are immediately transmitted through financial markets (equities, credit, housing, currencies and all of the derivatives based on these) with financial conditions either tightening or loosening. These shifts in financial conditions give signals to businesses and consumers about how much to spend and invest or save. A lower cost of capital encourages spending and investment, boosting demand and inflation. Lower yields are often accompanied by buoyant equities, which encourage the same via a wealth effect.

The transmission mechanism of monetary policy to asset prices is not always seamless, however. As central banks in the developed world have tightened policy, financial conditions have tightened and then eased. The easing is partly a reflection of market technical factors and partly owing to the markets (rightly or wrongly) pricing in an imminent peak in rates and subsequent cuts this year for the BoE, Fed and ECB. Here, financial conditions can be a useful gauge for market expectations of monetary policy.

The transmission mechanism between financial conditions and the real economy is also imperfect. In this latest monetary tightening cycle, we have seen loan demand weaken and lending standards tighten as one would expect. But this has not fed through into inflation as one might anticipate because of rigidities in labour and product markets. The labour market has remained surprisingly robust, most likely a result of labour hoarding and a lower labour force participation rate. This has helped to buoy demand and inflation. Corporate pricing power has also kept upward pressure on inflation in the UK.

Asset prices can also provide useful signals to the MPC when bubbles emerge or burst. Financial stability is the primary remit of the FPC, and the first line of defence in addressing financial stability

issues is macroprudential policy. However, there may be conditions in which financial instability causes the MPC to deviate from its inflation target temporarily in order to better achieve it in the medium-term.

16. What impact do you think Quantitative Tightening has on the economy?

Our understanding of how quantitative easing (QE) works is tentative, and our understanding of quantitative tightening (QT) is murky given it has only been implemented a handful of times globally. This is one reason central banks are united in their desire to use interest rates as their primary active monetary policy tool. As then-Chair of the Fed Janet Yellen once famously said, QT should be like "watching paint dry."

QE is commonly understood to impact output and inflation through three main channels: the signalling channel (both in terms of a shock-and-awe announcement that there is a lender of last resort and in signalling future central bank policy), the portfolio balance channel (pushing down long-term yields to encourage investors to move out along the yield curve to longer maturities, changing the composition of assets in their portfolios) and the liquidity channel (improving market liquidity). QE is more powerful in crisis periods and moments of market stress. Some argue that QT is simply the reverse of QE, only QT is implemented during periods of relative calm and so has less impact on financial assets and the economy.

The UK began QT in February 2022, initially by allowing bonds to roll off the balance sheet as they matured and from September 2022 by actively selling bonds according to a clear schedule. There is general acceptance that central bank balance sheets will have to be bigger than they were before QE commenced (in the UK and elsewhere).

But the path to get there may not be smooth; there are reasons to worry that QT will not be just like QE in reverse. According to research by former Reserve Bank of India governor Raghuram Rajan and authors based on data from the US, commercial banks extend credit lines when a central banks engages in QE. Just because the central bank then decides to shrink its balance sheet, commercial bank behaviour doesn't shift back. As a result, QE increases commercial banks' liquidity needs in an endless ratchet effect. As central banks shrink their balance sheets, there may be market disruptions such as the repo rate spike in the US in September 2019. Central banks can step in to address these disruptions with liquidity operations, but then the commercial banks' liquidity needs increase further.

This research is based on a sample size of one experience with QT in the United States. More research needs to be done on this, including on the UK's experience with commercial bank behaviour during QE and QT. The MPC has approached QT with market conditions in mind, as evidenced by its delay of the start of QT until after the LDI panic was resolved. If financial instability results from QT, it can impact output and inflation by reducing consumer and business confidence, tightening lending standards and reducing the supply of loans from banks.

17. To what extent are you concerned that widespread protectionism in global trade will negatively affect the UK economy?

Off the back of a pandemic, Russia's invasion of Ukraine, the weaponisation of energy and finance and a growing rivalry between the US and China, the global economy is undergoing geoeconomic

fragmentation, particularly in sectors deemed to be of national strategic importance (ie: semiconductors). Since the pandemic, the mention of reshoring, onshoring and near-shoring has increased almost tenfold in companies' earnings presentations. Following the Russian invasion of Ukraine, the share of global firms planning to regionalise their supply chains nearly doubled (to 44 per cent) from a year earlier.

Globalisation may amplify the impact of global shocks on the domestic economy and makes inflation developments more global. But it also makes supply more elastic to changes in domestic demand, which was the backdrop to a long period of low and stable inflation across developed markets. Global value chains tend to boost productivity by encouraging specialisation, increasing competition and enabling technological spill-overs.

Protectionism in global trade is likely to result in lower output, lower productivity growth and higher costs. Open economies such as the UK are likely to be impacted more than countries that already have trade barriers. The UK is also vulnerable because it already faces weak productivity growth in the medium-term. Any additional drag on productivity would reduce potential growth and lower the threshold for inflationary pressures building. Lower-income consumers in developed economies who lose access to cheap imported goods would be disproportionately impacted. Following a cost-of-living crisis and a period of high inflation (akin to a regressive tax), this would exacerbate income and wealth inequality in the UK.

According to the IMF, trade fragmentation could drag on global output by 0.2 to 7 percentage points. Recent IMF staff analysis suggests the drag could be even bigger if trade fragmentation is accompanied by technology barriers, restrictions on migration, lower foreign direct investment and reduced capital flows.

If increased trade protectionism leads to more frequent supply disruptions, there are clear implications for central banks. In the 1970's and 1980's, a fragmenting geopolitical environment resulted in an OPEC-generated oil shock. Major central banks failed to anchor inflation expectations, and so inflation remained persistently high for years. If faced with frequent supply shocks, the MPC must learn from this historical period and pursue its primary mandate of price stability.