TSC Questionnaire – Appointment Hearing

Personal

1. Do you have any business or financial connections or other commitments, which might give rise to a conflict of interest in carrying out your duties as Governor of the Bank of England?

No.

For completeness, I should note that in order to avoid a possible conflict, I have recused myself from the FCA's current inquiries, both at the request of the Bank, into: the misuse by Encoded Media of an audio feed from the Bank of England to provide early access to its press conferences to market participants; and trading immediately ahead of the most recent Monetary Policy Report press conference.

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

Yes.

3. How has your experience to date prepared you for the role of Governor of the Bank of England, including chairing the Monetary Policy Committee (MPC), Financial Policy Committee (FPC) and Prudential Regulation Committee (PRC)? In which areas do you feel especially well-prepared, and in which will you need to undertake additional preparation and research?

I have spent nearly 35 years involved in central banking, having first joined the Bank of England in 1985. During that time, I have worked in the major policy and operational areas of the Bank. I became an Executive Director of the Bank in 2004, and a Deputy Governor in 2013. Early in my career I was seconded to the Federal Reserve Bank of New York and thus gained experience of working in another central bank. Since 2016, I have been CEO of the Financial Conduct Authority, and have worked very closely with the Bank of England as a member of the FPC and the PRC, and on a range of important issues where the Bank and FCA have worked closely together, for instance on Brexit preparations and the replacement of Libor.

From the perspective of the Bank's committees, I have been a member of the FPC since it was created in 2013 (and was a member of several of its predecessors) and likewise of the PRC since its creation the same year. I have not been a member of the MPC, but I was very closely involved in its creation in 1997 and was one of the Heads of Division in the Monetary Analysis area supporting the committee from 1999 to 2003. Looking at other activities of the Bank, I was Chief Cashier and Executive Director Banking from 2004 to 2011, which gave me responsibility for Banknotes and Payment Operations, and from 2007 to 2011 I was also responsible for the Bank's resolution activities during the financial crisis and for providing emergency liquidity assistance to banks. Towards the end of that time, I established what is now the Resolution Directorate. As an Executive Director and Deputy Governor I was closely involved in the running of the Bank as an institution.

My preparation for taking up the role of Governor has been focused on ensuring that I am fully up to speed with developments in the Bank since I left in 2016, with a focus on monetary policy reflecting that I have not served on the MPC and it is 16 years since I was directly involved in monetary policy. That said, I have followed the MPC closely as a member of the FPC since it provides the important central case view of the economy which forms a starting point to assess the risks to financial stability.

4. What is your approach to leadership, and how do you intend to lead at the Bank of England?

The Governor plays a critical role in the leadership of the Bank as an institution. Drawing on over thirty years at the Bank, and having known and worked closely with the last four Governors, I believe I have a strong understanding of the role as it has been in the past but also as it will need to be in the future. The Governor has a critical role in shaping the culture of the institution, and there are some very clear objectives that I have.

I do not believe that the authority of the Governor depends on remoteness or excessive hierarchy. My approach at the FCA has been to lead the institution and provide clear thinking on its strategy, delegate effectively to a well-established senior team and engage actively with staff and be transparent in addressing their questions and concerns. At the FCA I hold monthly sessions which staff can attend and ask me what is on my mind and our areas of responsibility. I will continue this at the Bank.

I have a very strong sense of public service, and in my experience of the Bank that is true of the staff. It is important that leaders are approachable and always demonstrate the values of the institution. The FCA can be a complex institution to understand. In light of that, the first thing I did as CEO was to lead the development of our Mission and update the Values so that we understand and can explain them both inside and outside the institution including the foundation of our public interest objectives. The Bank's Mission and values are well established but my job as Governor will be to make sure that we always come back to the core of our objectives and ensure that we are delivering as we should.

Like any institution the Bank must embrace diversity and ensure that it has a culture which recognises this throughout. My first principle is that any public interest body like the Bank needs to bear a sufficiently close relationship to the society it serves, otherwise it will be much more difficult to achieve its objectives because it will not be recognised as understanding and in sympathy with society. My second principle is that success in diversity – and at the FCA we define this broadly to include gender, ethnicity, sexuality, disability and social backgrounds – depends on developing role models, something that is crucial in my view for younger staff who wish to see they are in an institution where people like them succeed. I am firmly committed to leading an institution where diversity is successfully embedded.

In sum, the Bank's reputation and future success will depend on leadership across all the fields I have set out. The Governor has a highly challenging role. I consider it to be a privilege and source of great enjoyment to be able to take on highly challenging roles serving the public interest in the UK. I welcome the opportunity to do so as Governor of the Bank.

Cross-Bank issues

5. What are your principal strategic ambitions for the Bank of England under your tenure, and by what criteria should we judge your performance as Governor?

I have a number of strategic ambitions for the Bank during my term as Governor. I should be clear that the order below does not indicate a hierarchy of priorities. Moreover, they are not substitutes for carrying out the Bank's responsibilities as a whole very well; rather, these ambitions are with the intention of maintaining and enhancing the Bank's strong record.

The Bank needs to maintain and develop its strong reputation for leading thinking on the core issues affecting monetary policy and financial stability, and in doing so being able to apply that thinking readily.

The Bank must sustain a strong reputation for international engagement and leadership, building for example on Mark Carney's highly successful term chairing the Financial Stability Board and the benefits that brought to the Bank's reputation. We must positively lean against any (incorrect) notion of a more isolated UK post-Brexit.

The Bank needs to build and maintain the capacity to engage in a co-ordinated way domestically that does not compromise its independence. Indeed, independence in my experience is best served by open and robust engagement.

The Bank should maintain and develop its commitment to transparency in communicating its stance on policy. History shows that this is a field that does not stand still. An important part of this work is to ensure that the Bank maintains and develops much further its open and effective communication with a wide variety of audiences. As part of this, I will play a full role in regional engagement.

I would add two other points here, in large part because they are not obviously covered by the scope of the other questions.

I support a strong and successful financial services industry which contributes to economic growth. I support successful open financial markets, with free trade that points away from tying markets to locations, and markets that are global rather than regional in form. All of this should be done on a basis that is fair and sustainable to all groups in society. The public interest demands that we combine successful markets for their operators with fairness and sustainability. Brexit gives rise to very important questions around the future of regulation of financial services, both in terms of the substance of regulation and how it is delivered in the future UK system, and of course with that goes the issue of what sort of equivalence the UK should have with the EU. I have set out my views on this in public. I strongly believe that we must seek outcomes-based equivalence with the EU and elsewhere which allows for appropriate differences of form and rules and that we must resist rule taking.

Financial innovation is another major force shaping the future of financial services. As a regulator, I have set out in public that we have moved on from a world that can be characterised by the three governing verbs of our activity, namely that any actions we take must involve one of permitting, requiring or forbidding something. Public policymakers can, and now do, act to enable change to happen, but such actions should always be consistent with our public policy remit and objectives. The FCA plays a leading part in this area globally, something that I have strongly encouraged.

The Bank has likewise taken significant initiatives, and is undertaking a very important development in the renewal of the UK's Real Time Gross Settlement system (RTGS), which will enable greater innovation in payment services as well as providing the Bank with a new backbone for its core services to markets.

Overall, the criteria for judging my performance as Governor should be straightforward – has the Bank contributed to the UK public interest consistent with the objectives given to it by Parliament.

6. As Governor, you will represent the UK at meetings of the G7, G20, the Bank for International Settlements and the International Monetary Fund. What will be your ambitions for international cooperation and UK influence on regulatory reform and financial and macro-economic stability?

The Bank of England has played a leading role in international economic policy, in bodies such as the G20, G7, IMF and BIS and among central banks. Much has changed over time, but not in my view the authority of the Bank. It will be my job as Governor to maintain and develop that authority, and of course it needs to be permanent not just with the horizon of my term in view. In that sense, I will be the guardian of the institution's standing and reputation, in relation to which I have been fortunate to have worked closely with and learned from the last four Governors.

But clearly times change, and we need to be alert to and shaping that change where appropriate. I would highlight three important cases of such change, with different features.

First, it is clear that Brexit changes the position of the UK, and thus the Bank, in the world. When I joined the FCA, a week after the Referendum, I made clear at the outset that Brexit means we have to engage even more actively internationally, and that isolation would be a bad outcome for which ultimately we could only blame ourselves. In the intervening period, I think both the Bank and the FCA have taken major steps to ensure the outcome of isolation does not occur, through leadership in bodies like the Financial Stability Board, leadership on climate change – including via the Bank's membership of the Network for Greening the Financial System – and likewise on Fintech (for instance, the Global Fintech Network which the FCA has created and led). But, of course, the job is never done on such things.

The second case of change concerns monetary policy. There is a perennial challenge of how to carry out monetary policy in a complex and changing world economy, which inevitably raises questions around international policy co-ordination. There are two issues here: the first is the current environment of historically and persistently low levels of equilibrium real interest rates. The second is the rapid increase in international economic and financial linkages in goods and services, labour and capital flows, thereby increasing the importance of spillovers across borders. This has, sensibly in my view, led to a change in our understanding of how monetary policy is shaped by global developments in a highly open economy such as the UK. And, more recently, as trade tensions have come to the fore, debate has focused on the risk and implications of fragmentation in economic and financial linkages. In light of these changes, central banks need to engage in active dialogue on: how to ensure toolkits are effective for responding to future downturns, and how each country's policy changes can affect each other's economies, including via exchange rates and cross-border capital flows. The Bank has been, and will continue to be, a thought leader on these issues, and I look forward to sharing views with my fellow governors in fora such as BIS, G7 and G20.

This collegiate approach itself represents a sensible departure from a pre-crisis mindset in which each country could pursue its monetary policy objectives more in isolation

The third case concerns financial regulation, both macro and micro-prudential. The global financial crisis, as the name indicates, had substantial international causes and consequences. One of those consequences was a very abrupt fall in cross-border financial flows, what economists call a home preference shock. Two things followed from this development. First, it had to be managed at the time. The Bank played an important role, as it should. Second, it would have been easy to respond to that shock by putting up regulatory barriers to limit cross-border flows, something that would have reinforced the shock itself, damaged financial markets, and particularly the UK as a global financial centre.

It is to the great credit of everyone involved that this did not happen, and that there was a strong commitment to reinforce international regulatory co-operation and thus help to keep markets open. The Bank has played a big part in achieving this outcome, particularly through Mark Carney's chairmanship of the Financial Stability Board.

My ambition therefore is to ensure that the Bank will maintain and enhance its reputation as an international leader. If I was to pick out an issue of the moment, I would highlight the important work done by the Bank on the stablecoin initiative, known as Libra. While Libra has, if anything, demonstrated the difficult issues that such a proposal gives rise to, it has also drawn attention to the scope to change and improve payment systems. I have no doubt that the broader issues of the appropriate principles for shaping an innovation such as stablecoins, the risks which attach to their design and operating model and thus the fundamental characteristics of the required policy response remain to be tackled. There is also a question of how best to improve the public infrastructure underpinning payments, including on the merits in creating central bank digital currencies. The Bank chairs a number of important international groups working on these issues, including the BIS Committee on Payments and Markets Infrastructures, the central bank group to assess the potential case for central bank digital currencies and several other FSB and CPMI groups. The aim should be to help to ensure coherence across national regulatory regimes and provide a platform to support innovation and maintain monetary and financial stability. I expect the Bank will continue to play a leading role in this work.

7. Do you perceive that threats to central bank independence have risen since the financial crisis, in the UK and globally? What role do you think it will be appropriate for you as Governor to play in safeguarding the Bank of England's independence and shoring up support for its monetary, financial and prudential objectives?

First and foremost, I am a strong supporter – as strong as can be – of central bank independence, and it will be my role as Governor to ensure the Bank fulfils its role. I have been closely involved in each of the major moves in respect of independence of the Bank: in 1997 with the creation of the MPC and operational independence in respect of monetary policy; 2010-13 with the creation of the FPC and macro-prudential responsibility; and in the same period as the first CEO of the PRA and Deputy Governor responsible for micro-prudential regulation.

But it is important to set independence in its proper context. The Bank's authority and responsibility derive from Parliament and from the statutes that govern independence and define its responsibilities. Importantly, it is accountable to Parliament, and I view that accountability as contributing to and reinforcing its independence.

Over the last twelve years and more I have probably made around 50 appearances to give evidence to and be held accountable by Parliament, and I take that extremely seriously. It is an important part of ensuring that independent does not mean unaccountable.

An independent central bank has to be able to function in all seasons. It is not an arrangement that was designed with one state of the world in mind, and it cannot be just a fair weather friend. I think the Bank of England and other central banks have adapted well to the changing environment of the last decade or so.

That said, since the financial crisis there has been greater challenge around the world to what is sometimes seen as the more orthodox understanding of central bank independence. This understanding is rooted in the view that the case for central bank independence is based on the inflationary bias that might otherwise be present in monetary policy. A natural division of responsibility for macro-economic management followed this logic: monetary policy should be implemented by a operationally independent central bank and aimed at economic management over the business cycle in pursuit of price stability; while active fiscal policy should aim to stabilise the public finances in the longer term, rather than be used as an active tool for cyclical demand management. This was the origin of the case for modern central bank independence (some central banks have a much longer history in this respect).

The consequences of the financial crisis, combined with the longer-run decline in nominal and real equilibrium interest rates, have led to an extended period of very low official interest rates with the constraints on conventional monetary policy 'space' that these imply (see Question 18). To some, this has challenged the pre-crisis consensus that monetary policy always dominates fiscal policy as a demand management tool. But that does not in my view call into question the case for central bank independence. If anything, it strengthens it. I think it is important to guard against – to be blunt – some loose thinking here. Persistent low interest rates can be caused by structural factors and some quite persistent cyclical factors. I think much of the analysis of the current context points to a larger share for structural factors – for instance, demographic trends including the ageing population. It would therefore seem odd to rely on responding to a structural development entirely by using a short-run demand management tool. To do so would strain the bounds of that tool, and risk calling into question the effectiveness of the institution that deploys it, namely the independent central bank. I can see the case for re-emphasising the combination of use of these tools in such a way as to preserve the role of each in a new context. This would support the critical function of the central bank in short-run demand management and the essential robustness of its independence, and the scope to use fiscal policy more in a changed structural environment of persistently low interest rates.

My role as Governor will be to put these issues on the table, to advise the government as required, and enable the Bank to establish its views clearly, and set them out in a way that benefits monetary and financial stability and the independence of the Bank. I am not, I should add, much inclined towards the idea of "shoring up" independence as that suggests something about to collapse, which I do not believe, but I am strongly in favour of making independence stronger (independence in all seasons) by explaining the case for it.

8. To what extent do you think that wide public understanding of the role of and decisions made by the Bank of England are important for its accountability and effectiveness, and what is your assessment of the current state of public understanding? How do you think the role and importance of public understanding varies across the Bank's policy areas, if at all?

There is no doubt that the effectiveness of the Bank depends on public understanding, and that understanding depends on the effectiveness of the Bank's communication and the quality of the accountability. All of these things underpin its independence and ability to perform its role.

The Bank has made very major progress in expanding public understanding over my career and can rightly be seen as a leader among central banks. The Bank has placed communicating more simply and widely at the heart of its strategy – Vision 2020. This reflected a recognition that with extended powers and responsibilities came an obligation to explain more clearly what the Bank does, how it does it, and why.

It is also clear that broad public understanding helps the Bank be more effective. I have seen the evidence that these initiatives have led to a sizable increase in the Banks's social media following. The evidence also indicates a variation in public engagement across the Bank's activities. Public awareness of the Bank's monetary policy remit and its provision of banknotes is greater than for its macro and micro prudential remits.

My experience as a former Chief Cashier supports the evidence that public interest in banknotes tends naturally to be at high levels. The MPC is well established, over 22 years old, and in my view benefitted from the work early on in its life to build support for low inflation and explain the case for it. The Bank has over the years done well in taking on an analytically complex subject and explaining it in reasonably straightforward terms. But the challenge is always present to improve on that achievement and to adapt to changing circumstances.

I am not surprised that there is a lower level of public understanding of the Bank's macro-prudential and micro-prudential regulation, but I will nonetheless want to see what can be done about it. The FPC is more challenging for a number of reasons: its remit does not reduce to a single numerical target; rather it is about words and descriptions backed up by analysis. It is about risks that can happen, not necessarily about what is happening around us (financial stability gets plenty of attention when this state no longer holds, but for all the wrong reasons). I think there is a task to seek to increase public understanding of the work of the FPC. And this is important because, when, as will happen, there is a threat to financial stability, it is important that the role of the FPC is understood and regarded as credible.

The PRC is in a rather different position, but nonetheless with a challenge. It is unsurprising that it is less known to the public. Much of the work of the PRA has to be done behind the scenes because it relies on unqualified access to commercially sensitive information. That said, big steps have been taken in terms of visibility since the crisis. Most obviously – and I have to say pleasingly as I have been heavily involved since the start – is the role of the stress tests and the greater transparency around them.

9. Along with three of the Deputy Governors, you will sit on all three of the Bank's policy committees, and external members are outnumbered by Bank internal members on two committees. As chair of these committees, how do you intend to balance the views and influence of internal members against those of external members?

I should say at the start that I have served on the FPC and the PRC as both an internal and external member (I think it is correct to treat the FCA Chief Executive as an external member). So, I have seen it from both sides.

The key principle for me is that the Bank's committees, whether they use voting or consensual decision-making, operate on the basis that no member has a larger or smaller influence than any other (it is true that in the MPC the Governor has a casting vote if needed, and it was in the early days, but that is an unusual occurrence). On that basis, my strong view is that there is no difference between an internal or external member. I do not intend to chair meetings as if there was such a difference.

In practice, internal members are distinct because they have executive responsibilities, for instance to deliver the material and processes needed by the committees to enable them to function, to undertake consequent actions (for instance, market operations and supervision in the PRA), and to represent the Bank in international bodies. These are very important roles, but they do not change the fundamental plurality in the committee room.

I am very strongly committed to this approach of equal influence. I saw the experience in the earlier days of the MPC when for a short time the system came under severe strain. I think the lessons of that time have been learned.

<u>Brexit</u>

10. What impact to date has the vote to leave the EU in 2016 had on the UK economy, including on growth, inflation, investment and incomes?

Looking at the period since the Referendum, there has been a slowdown in headline GDP growth. Quarterly growth was around 0.5% in 2015 and 2016 H1, slowed to 0.4% in 2017 and 2018, and to 0.2% through the first three quarters of last year (with activity flat in the final quarter). The Bank has assessed the level of GDP in the last quarter of 2019 as likely to have been around 2¼ - 2½% lower than it would have been under the May 2016 Inflation Report Forecast. However, it is important to be careful in attributing causation here given other influences, beyond Brexit, on GDP outturns since 2016 such as the performance of the global economy.

It is also notable, and particularly during last year, that the volatility of headline quarterly GDP growth has risen sharply: GDP grew 0.6% in Q1, fell 0.2% in Q2, rose 0.3% in Q3, and was flat in Q4. Part of this story appears to be Brexit-related stockbuilding and the pulling forward of trade ahead of potential cliff-edges, as evidenced by the pattern of survey measures of stockbuilding and manufacturing output and trade with the EU (exports and imports).

Business investment has slowed markedly since the Referendum. Through 2015 and 2016, business investment was growing at a 4-quarter rate of around 5-6%. It slowed, to 3% in 2017, and fell 1½% in 2018 before stabilising in 2019. This has been a significantly weaker performance than other major economies. Survey evidence suggests that uncertainty around Brexit, and particularly the process of putting it into place, has been an important cause of the fall in investment and lower productivity.

I would emphasise two points here. First, there should be no surprise on the link between heightened uncertainty, lower investment and thus lower output and productivity. There is a well-established argument in economics that heightened uncertainty will cause investment decisions to be postponed. Weak investment in turn holds back productivity, as does resources diverted to contingency planning efforts. Second, pointing to these short-run effects from the Referendum decision does not amount to taking a position on the eventual economic impact of Brexit. This remains to be seen and will depend on the new trade deals formed and how additional flexibilities in the setting of regulations are used.

There have also been other short-term impacts. CPI inflation increased from 0.3% in May 2016 to a peak of 3.1% in November 2017. The largest contributor to this movement was higher import prices. Inflation has since fallen back below the target. At the time of the Referendum, whole-economy regular pay growth was running at just under 2½% per annum, putting real wage growth at around 2% p.a. The depreciation in Sterling and subsequent rise in inflation caused real wage growth to fall into negative territories, at around –¾% p.a. This led to a slowdown in consumption growth, from a quarterly rate of around 0.8% in the year before the Referendum, it has averaged around 0.4% since 2017.

Annual house price inflation was running at around 8% p.a. in mid-2016. Since then, it has undergone a steady and prolonged slowing, bottoming out at around 1% in mid-2019. Some of this slowing reflects no doubt the weakening in real income growth after the Referendum, but other factors also appear to contribute. Brexit-related uncertainty may be holding back investment in housing, as may the general regulatory tightening around buy-to-let.

11. What assessment have you made of the preparedness of UK and EU authorities for preserving financial stability and the continuity of financial services in the event of a disruptive Brexit? Is it possible fully to mitigate the impact on financial services?

Throughout the period since the Referendum I have been a member of the FPC and share the consensus around the FPC's judgments on Brexit preparedness. Alongside that, the FCA has undertaken a large programme of work with the financial services sector on Brexit preparations.

Overall, the FPC has judged that the core of the financial system is resilient to and prepared for a worst case disorderly Brexit. The worst case scenario (which is just that and not a prediction or forecast) includes severe border disruption, a sharp increase in the risk premium on UK assets and negative spillovers to wider financial markets. The FPC has judged that this scenario falls within the severity of the Annual Cyclical Scenario stress test, to which the major UK banks have been judged resilient.

Second, the FPC has identified actions required to reduce the risk of disruption to cross border financial services. In the most recent Financial Stability Report, the FPC judged, reflecting extensive preparations made by authorities and the private sector, that most risks to UK financial stability that could arise from disruption to cross-border financial services in a January no-deal exit had been mitigated. That said, in the absence of further actions by EU authorities on some risks (such actions were not expected, in the near future at least), some disruption to cross-border financial services was still possible. It would primarily affect EU households and businesses, but could increase volatility and spill back to the UK in ways that cannot be fully anticipated or mitigated.

These risks fall into two categories:

Financial stability risks: establishing a UK regulatory framework and avoiding disruption to core cross-border financial services were deemed to be key to mitigating financial stability risks. A “checklist” of mitigating actions designed to track progress has been published quarterly since November 2017. The checklist risks have evolved since they were first published, moving from all red and amber risk ratings to more greens. (The colours reflect overall judgments on the impact of the risk were it to crystallise taking into account progress made in mitigating risks.)

March 2018 Checklist	Risk to UK	Risk to EU
Ensure a UK legal and regulatory framework is in place		
Cleared derivatives		
Insurance		
Asset management		
Banking services		
Uncleared derivatives		
Personal data		
Implementation period to allow mitigating actions by firms		

November 2018 Checklist	Risk to UK	Risk to EU
Ensure a UK legal and regulatory framework is in place		
Cleared derivatives		
Insurance		
Asset management		
Banking services		
Uncleared derivatives		
Personal data		
Implementation period to allow mitigating actions by firms		

December 2019 Checklist	Risk to UK	Risk to EU
Ensure a UK legal and regulatory framework is in place		
Cleared derivatives		
Insurance		
Asset management		
Banking services		
Uncleared derivatives		
Personal data		
Implementation period to allow mitigating actions by firms		

Other risks, while not financial stability risks, could cause some disruption. These risks have been published since November 2018. They would be unlikely to have a material economic impact in and of themselves, but they could affect a limited amount of cross border activity or contribute to volatility. These risks include the ability of EEA firms to trade certain shares on UK trading venues; the ability of UK banks and insurers to continue servicing some retail customers in the EEA; and the increase in prudential requirements for EU firms holdings’ of UK assets.

In terms of the likelihood of full mitigation of the impact on financial services, I think it is best to start with an overall view on progress since 2016. In the summer of 2016 there was a reasonably widely held view that financial services would be a major problem area with Brexit. I think the mitigating actions have diminished the risk substantially. This reflects a very large amount of work on all sides.

With the withdrawal agreement now passed, the issue moves on to assessing the likelihood of an end to the transition period with no equivalence agreement in place for financial services (which to be clear is not my expected scenario but could happen).

In that event, the risks represented by the amber ratings above would still be relevant and some mitigating actions, notably the EU's temporary recognition regime for clearing, would need to be rolled over (notwithstanding the possibility of further progress on mitigating actions in the meantime). As it has done in the previous two years, the FPC will need therefore to keep track of these risks and, where necessary, identify steps to mitigate them.

12. What do you see as the likely main *short-term and transitional* impacts on UK financial stability and the economy in the event of a sudden transition in the economic relationship between the UK and EU to WTO terms? What would the implications be for monetary policy and financial stability policy?

Some effects from a change in trading arrangements are already built into the MPC's latest forecasts. The MPC's forecast in the January *MPR* is conditioned on an immediate – but orderly – move on 1 January 2021 to a free-trade agreement (FTA) with the EU. Consistent with the ambitions of the Political Declaration, this is of similar scale and depth to the Comprehensive Economic and Trade Agreement (CETA) in place between Canada and the EU.

Trade in that forecast is assumed to be tariff free, but it includes the introduction of customs and other border checks, an immediate reduction in market access for some services (such as financial services) and a gradual increase in trade barriers due to a divergence in product standards and regulation. These trade barriers weigh on trade flows and productivity.

Relative to that forecast, a sudden transition to WTO terms would also include the immediate introduction of tariffs and higher non-tariff barriers.

UK businesses would face higher tariffs on exports to the EU based on its Most Favoured Nation (MFN) schedule, including tariffs of 14% on average on food and agricultural products (including 20-90% on meat and dairy) and 10% on cars. This would reduce demand for UK exports. The UK Government is developing a new MFN tariff schedule for imports to the UK to come into effect on 1 January 2021. An increase in tariffs on imports would reduce imports and push up consumer prices.

A WTO outcome would also increase non-tariff barriers relative to a comprehensive FTA. These would arise due, for instance, to a lack of cooperation on technical barriers to trade, such as standards and conformity assessment procedures, and measures to minimise barriers to the cross-border supply of services and investment. The absence of these is likely to make trade more costly or difficult relative to a comprehensive FTA, reducing trade flows and foreign direct investment.

Given the empirical and theoretical links between more openness and higher productivity, the reduction in UK/EU trade flows and foreign direct investment from higher tariff and non-tariff barriers is likely to reduce productivity in the UK economy.

In either the case of a FTA or a WTO outcome, the preparedness of businesses and infrastructure will be a key factor in determining the short-term and transitional impact. But this is likely to be particularly true if the UK leaves without a trade deal as the extent of trade barriers will be greater and the likelihood of co-operation lower.

The sudden introduction of customs and other border checks could cause temporary but significant disruption to supply capacity of the economy if businesses and infrastructure are not prepared. This would amplify the effect of higher trade barriers in a WTO outcome. Disruption would be most acute at the “Short Straights” over the Channel, given the concentration of roll-on-roll-off (RORO) freight which relies on a continuous flow of traffic. Significant delays at the border would be likely to reduce trade flows and disrupt supply chains, harming the supply capacity of the economy.

Three other economic effects are worth noting. First, uncertainty may rise. Households may also increase their precautionary saving if unemployment begins to rise. Second, bank funding spreads and therefore credit spreads on lending may widen in response to the deterioration in the macroeconomic outlook. Third, less open and less productive economies tend to have lower real exchange rates. A weaker exchange rate would offset some of the weakness in GDP, but also increase inflation.

We do not yet know how prepared businesses and infrastructure will be at the end of 2020 for a sudden transition to WTO terms. By implication, it is also too early to say what the impact would be on uncertainty and asset prices. Were a sudden transition to WTO terms to become the most likely outcome, the MPC would need to form judgements on these factors based on the information at the time.

The banking system, however, is resilient to the wide range of economic and financial shocks it could face.

Financial stability is not the same as market stability. Market volatility may occur in a sudden transition to WTO terms. That said, markets have proved able to function effectively through volatile periods. Major UK banks are able to withstand severe market disruption and, as a further prudent precaution, the Bank has operations in place to lend in all major currencies.

In terms of policy responses by the Bank, the FPC can move the UK countercyclical capital buffer (CCyB) rate in either direction as economic conditions and the overall risk environment evolve. If a major economic stress were to materialise, the FPC is prepared to cut the UK CCyB rate, as it did in July 2016.

The appropriate monetary policy response would depend on the balance of the effects on demand, supply and the exchange rate. Monetary policy would not be automatic and could move in either direction. Large supply shocks occur relatively rarely in advanced economies, and there is little monetary policy can do to offset supply shocks. The MPC would need to judge to what extent any hit to GDP reflected an immediate hit to supply or excess demand. The MPC may face a trade-off between a potential increase in slack, due to a worsening in net trade, rising uncertainty and tighter financial conditions and a rise in inflation following a depreciation in sterling. These issues are considered in the reply to Question 21.

13. What do you see as the likely main *long-term* impacts on UK financial stability and the economy of the UK's withdrawal from the EU? In high-level terms, how will these impacts be affected by the following scenarios for the UK's future relationship with the EU: (i) close regulatory alignment and customs union; (ii) a free trade agreement; (iii) WTO terms?

It is important to start with some long-established general relationships in economics. First, greater openness and integration across borders increases trade flows. Second, greater openness improves productivity through an increased level of innovation and adoption of new ideas and practices, greater specialisation enabling larger cross-country returns to economic scale and scope, and an improved allocation of resources. Productivity is also positively related to foreign direct investment.

The long run impact of the UK's withdrawal from the EU on openness and productivity depends importantly on the UK's future relationship with the EU, as the question suggests. In my public comments on Brexit as the CEO of the FCA, while I have made clear that as a public official I took no position on the substance of Brexit, but I am a very strong supporter of free trade because of the relationships outlined above.

It is important to summarise how the Bank's work, and thus the FPC consensus, has considered each of the three scenarios of the question.

Close regulatory alignment and customs union – the increase in trade barriers under this arrangement would be relatively modest. In the November 2018 EU withdrawal scenarios submitted by the Bank to the TSC, for instance, the Close Economic Partnership assumed that no customs checks or new regulatory barriers to goods would be introduced and the UK retains equivalence for financial services, but some barriers to non-financial services would emerge. In this scenario trade and GDP are 4.5% and 1.4% lower in the medium term relative to its May 2016 forecasts, respectively. This would be a deeper trade agreement than some aspects of the current political declaration.

A free-trade agreement (FTA) – there is a wide spectrum of trade deals, differing most materially in the reduction in non-tariff barriers. Material non-tariff barriers are likely to remain in any FTA. In particular, the UK would still face customs checks and there would typically be minimal provisions for services trade in which the UK has a trade surplus with the EU. There may be some provision for equivalence in financial services but this falls a long way short of current passporting rights. An FTA would therefore reduce openness with the EU and therefore GDP materially relative to EU membership and would impose greater barriers to trade than a customs union with close regulatory alignment. Set against that an FTA would allow the UK to strike its own trade deals and greater freedom to change regulatory standards.

WTO terms – this would involve the most material increase in trade barriers, including tariffs, customs checks and non-tariff barriers on goods and services. The Bank's models suggest that this would reduce trade by 18%. FDI would be reduced by 22%, and GDP by 5.0% in the medium term (and before the effect of new trade deals or changes to regulations).

The Bank's February 2020 Monetary Policy Report is conditioned on an FTA which is of similar scale and depth to the Comprehensive Economic and Trade Agreement (CETA) in place between Canada and the EU. This is a relatively comprehensive FTA compared to other deals. It eliminates 98% of tariffs and reduces some non-tariff barriers, such as co-operation on product standards and mutual recognition of professional qualifications. Material non-tariff barriers remain, however, most notably on services and customs checks.

Bank models suggest CETA reduces trade by 10.5% and the level of GDP by 3.2% in the medium term relative to EU membership. Importantly this estimate does not allow for the potential effect of the UK striking new trade deals or changing regulations.

Turning to financial stability, the future relationship in financial services will need to strike a balance between the benefits of each side having access to both markets (the UK and the EU) and the need to tailor each regulatory regime to fit the respective markets. There are some important underlying points here. Alignment of regulation does not mean rule taking either way; rather, it means alignment of outcomes, just as it does with other parts of the world. Resilient financial institutions and markets are necessary to support the real economy in all states of the world, good and bad. Alignment must enable each side to maintain financial stability and foster competition and innovation in the financial system (e.g. FinTech and sustainable finance), and the FCA's operational objectives of consumer protection, market integrity and competition in the interests of consumers.

The UK is home to global not regional financial markets, and thus when we think about regulatory alignment we naturally think in terms of global alignment. And, the UK is a common law system not a civil code system. As I have said before, all of this means that left to our own devices we will regulate somewhat differently, but that need not jeopardise alignment and the common goals of regulation. Supported by strong supervisory co-operation, this should strike the right balance.

It is important that the judgment of autonomous equivalence on both sides is done within a framework where alignment is judged sensibly in terms of outcomes not rules. Moreover, the recent case of EU equivalence as applied to Swiss trading venues provides an unfortunate example of how it can become too unreliable as an approach. With that in mind it is welcome that the Government is pursuing enhanced provisions for the maintenance and, if necessary, withdrawal of equivalence.

Monetary policy and the economy

14. What is your assessment of the overall prospects for UK economic growth, inflation and unemployment over the next five years, and what do you see as the main drivers of and risks to those prospects?

It is fairly normal for assessments of the most likely medium-term prospects for growth, inflation and unemployment to have them returning to their trend levels with gaps between their current and equilibrium or sustainable rates being closed over the medium-term. Experience suggests that there are good reasons to adopt such a central case view, but also to explain clearly why, and what the risks are. I share this approach.

At the heart of the view that deviations from trend get corrected is the belief that macroeconomic policy is effective and inflation expectations are well anchored. As the IMF has recently observed, moves in the last year or so to loosen monetary policy by a number of central banks appear to be leading to a stabilisation and shallow recovery of global economic growth. But monetary policy must have room to act, and that space is currently more circumscribed by proximity to the effective lower bound of rates. There are risks around such a benign view of medium-term prospects.

One such outcome and risk is the possibility of either greater or less fragmentation in the world economy, and corresponding shifts in the accompanying uncertainty of consumers and investors. Current conditions indicate substantially heightened risk and uncertainty in this respect. An escalation of trade tensions would threaten a more benign outcome, and in doing so remove the stabilising impact of open goods, services and capital markets. A reduction in trade tensions, and an orderly move to new trading relationships for the UK will have the opposite effect. I am a strong believer in free trade and open markets backed by a multilateral trading system. Domestically, this will also support the reduction of uncertainty around the UK's future trade relationships which the MPC assesses has weighed on business investment. This, too, will support the more benign medium-term view, but would correspondingly act as a risk to it if not achieved.

The MPC has set out its view of potential supply growth in the economy, indicating that it has fallen from just under 3% p.a. before the financial crisis to just over 1% on average over the next three years, recovering a little towards the end of the three-year forecast period. The medium-term prospect is thus built around a much lower rate of supply growth. Weaker investment is both a contributor to this outcome and a risk to the outlook. Moreover it's a risk both ways in that investment could be adversely affected further by fragmentation and greater uncertainty, or be lifted above the low expected levels if the boost from the resolution of uncertainty is more pronounced than assumed. The MPC's latest projection indicates that capital deepening via investment will recover somewhat from its almost flat trend since the financial crisis.

A further element of supply potential is total factor productivity, the efficiency with which both capital and labour are used to produce output. It is the hardest to assess as it is calculated as the residual of labour supply and capital deepening via investment. So, any outstanding puzzles get lumped into it. In the MPC's decomposition of potential supply growth it has declined from 1.6% p.a. before the crisis to zero in the last year. As well as the impact of lower business investment described above, part of the recent slowing probably reflects businesses preparing for Brexit to help ensure a smooth transition. That is likely to have diverted time and effort away from other activities and weighed on productivity growth. There may also be non-Brexit-related factors at play.

The MPC projects a pick-up in the next three years. That reflects the balance of opposing forces, each of which has risks around their impact and timing in both directions. On the one hand, the fall in Brexit-related uncertainly is likely to reduce the drag on investment and therefore productivity growth somewhat. And the amount of time and effort that companies spend on Brexit planning is unlikely to drag on productivity growth as it has done recently. It is possible that new initiatives such as the government's levelling up agenda could also help to lift productivity. On the other hand, the rise in trade barriers as the UK leaves the EU is likely to weigh on productivity growth. In terms of the drivers and risks of the medium-term outlook for supply more generally, I would highlight that there is an innate puzzle that we see positive change around us – e.g. in the technology we use – but not in the productivity data.

It is not a new observation to say that over history it has tended to be the case that the gains from innovation take longer to come through in productivity measures which seek to capture not so much the technology we have, but how effectively we use it. Some delay is not surprising, but how much this might change the medium-term assessment of the economy is very hard to judge. Also, we may well not be as good at measuring productivity as we would like, for instance because investment is now more concentrated in intangibles than bricks and mortar and machines.

Beyond all of this, there is one large external driver which needs to be factored into medium and longer-term prospects for the economy, namely the impact of transitioning to an economy consistent with the climate targets. I fully support the emphasis that Mark Carney and the Bank have put on this issue and the leading role that the Bank has taken. It is important that this does not change.

The Bank's climate stress test is designed to expose inconsistencies between asset values, and the assumed economic paths that underpin them, and the adjustment requested by the climate targets. This is something that the MPC will need to look at as the Government sets out how it plans to make the transition to a net zero economy.

In summary, there are good reasons to adopt a baseline projection for the medium-term for economic growth, inflation and unemployment which holds them around their now steady state levels. In good part this is because macroeconomic policy is effective. There are risks around economic fragmentation and open markets, and these involve both actual events and outcomes and the perceived level of uncertainty. Investment and capital deepening are particularly affected in this respect. There are risks around the impact and timing of Brexit on productivity and persistent puzzles around productivity growth, more generally – though it is not unusual to be puzzled about productivity. And, one influence outside these trends is the path of adjustment to the climate targets.

15. How have the relationships between growth, inflation, pay and unemployment changed in the UK since the Financial Crisis, and why do you think this is? Do you find plausible the MPC's current assumption that there is a natural rate of unemployment of 4¼ per cent?

In several advanced economies, the decade or so since the financial crisis has seen two breaks from the past in terms of the relationships between so-called nominal variables (notably inflation) and real variables (output growth and unemployment). The first is often called the missing disinflation, reflecting the higher than predicted profile of inflation following the sharp fall in output and rise in unemployment after 2009-10. This pattern was not unique to the UK by any means, but it was certainly notable here. A common explanation is the offsetting strength of commodity prices in the period after the financial crisis. Alongside this, in the UK, it is clear that consumer-price inflation was boosted (and weak underlying domestic inflationary pressures masked) by the strength of the temporary pass-through to inflation from the depreciation of the sterling exchange rate in the crisis as the UK was seen to be relatively more affected. As explained in a sequence of open letters and Inflation Reports, it was this judgement on the temporary nature of the pass through and the lack of impact on inflation expectations that led the MPC at the time to substantially ease monetary policy, even as CPI inflation rose well above the 2% target.

The second break from the past was the subsequent weakness of inflation in response to the recovery that got under way. Again, this pattern was not unique to the UK, and there has been a role for commodity prices at times, reflecting their weakness in this period relative to the immediate past, and again, the gradual appreciation of sterling that occurred during the UK's recovery phase.

These two breaks have led to a great deal of speculation amongst economists about what to make of the observed relationship between prices and activity – usually referred to as the Phillips curve relationship - whether it has fundamentally changed in recent years, and even whether it remains useful. Before turning to the recent experience of the UK, I will make two related general observations.

First, at any point in time, there is a very large number of factors influencing growth, inflation, pay and unemployment. Phillips Curve-like relationships, describing what has been observed to have happened on average over the past, can be a helpful benchmark. But there are always likely to be reasons why the economy in any particular period will appear to behave differently. It depends what else is going on at the time. My reading of the deliberations of the MPC and the speeches of its members indicates a fairly healthy scepticism towards both some of the bolder claims regarding the death of the Phillips Curve, and – at the other extreme –the idea that the empirical relationships of the past should be taken literally as a guide to the future. Such empirical relationships can be useful guides, but it would be wrong to expect literal and naïve answers to emerge from them in any particular episode. I share this view.

Second, and relatedly, it is important to bear in mind that many of these empirical relationships were originally conceived in a world where monetary policy was not successful in stabilising inflation, and thus was not shaping in a beneficial way the expectations of individuals and firms on future inflation. That situation has changed dramatically in recent decades, where there is much experience and research suggesting that monetary policy is now more successful in stabilising inflation. Successful stabilisation means monetary policy acts to increase inflation when output is below potential, and vice versa, and thus acts to offset shocks to demand. This is also relevant, as I will set out in the answer to Question 21, to how far temporary shocks such as movements in commodity prices and exchange rates can be regarded as short-lived and less likely than before to influence future inflation rates over the longer-term.

Turning to the more contemporary picture in the UK, over recent years the rate of potential supply growth has slowed, reflecting a similar pattern in productivity growth as measured. Spare capacity in the economy was absorbed as demand grew faster than potential supply. The unemployment rate fell from 8% in 2013 to just under 4%. This led the MPC to conclude that demand and supply were broadly back in balance by the start of last year. Since then, output growth has slowed, with the MPC concluding that a margin of slack has opened up again, albeit modestly. The growth of potential supply in the economy has been hampered by the weakness of investment as well as weak growth in total factor productivity.

Average wage growth since the financial crisis was subdued for a prolonged period, recovering only recently to a level between 3½% and 4% following considerable tightening of employment. In the earlier phase of recovery from the crisis, the apparent weakness of wage inflation notwithstanding, a rapid tightening in the labour market raised a question over whether the link between general pay growth and labour market conditions had weakened (another version of the Phillips curve relationship). Again, however, it is important to take account of all of the factors influencing pay, and how they are differ from the past.

The unusually persistent sluggishness in productivity growth since the crisis is an important part of the story, leading to commensurate slowing in real wage growth and bringing about a shift in the wage Phillips curve. That does not mean however that unemployment no longer affects wage growth. More recently, despite continued weak productivity, pay growth has recovered to levels that appear to be more reflective of the tightness of the labour market (with unemployment below the estimated natural rate). This corroborates reports of recruitment difficulties and skills shortages, including from the Bank's network of Agents around the UK.

The MPC currently judges the natural rate of unemployment to be around 4¼%, around ½ percentage point lower than its level in the mid-2000s, and further below levels assumed further back in time. Two main factors appear to shape the decline over the longer-term. First, the rate of destruction of jobs (people moving from employment to unemployment) has been persistently lower since the financial crisis than in previous periods. Second, there is evidence of a pattern of long-term improvements in the level of education and training of the labour force which is consistent with lower trend unemployment.

I support the Bank's approach to estimating the natural rate and the MPC's assessment of the output of those approaches. During my earlier involvement with the MPC, the Bank developed a suite of models approach to such estimating – bearing in mind that key concepts such as the natural rate and the output gap are inherently unobservable. I am aware that the Bank uses a standard work-horse Phillips Curve model alongside more detailed models of the flows between different labour market states (including those accounting for the behaviour of different cohorts, e.g., age and gender, and demographic trends) and supplements these with a variety of more purely statistical models using filtering techniques to extract trends in the data. Although the standard errors (degree of uncertainty) around any particular estimate are inevitably fairly wide, the central estimates from a number of alternative approaches lie in a reasonably tight range, with 4¼% sitting around the middle. In sum, although there is a fair degree of uncertainty and, in any case, estimates of the natural rate are likely to evolve over time as we learn more, 4¼% seems like a plausible estimate at present.

I would end with a few observations on these relationships which also point to the importance of the Bank remaining at the front of research and the application of research to policy-making. First, it is reasonable to believe that some of the puzzles in the Phillips curve relationship are caused by greater globalisation such that domestic inflation is more sensitive to global conditions and less so to purely domestic measures. Second, the success of the monetary policy regime will affect the identification of the Phillips curve. Third, while the estimation and impact of the natural rate of unemployment is important, I think it is reasonable to believe that a larger influence on inflation for a given path of demand may arise from uncertainty over structural productivity growth.

16. Why in your view does the UK suffer from a so-called 'productivity puzzle', and what do you see as the prospects for productivity growth in the coming years? Please address both the UK having a lower *level* of productivity than certain other major developed economies, and the fall in the rate of productivity *growth* since the turn of the century.

Discussion of productivity growth can in my experience get lost in a vast amount of detail and seemingly unrelated observations. I would instead pick out a number of points which seem to me to be important for the broader story.

First, over time, productivity growth as measured has been volatile. In the historical context, productivity growth is currently very low. On a simple trend five-year moving average, it has slowed since the financial crisis to growth rates not seen since before the Second World War.

Second, there is a reasonable puzzle, namely that surely we are living in an age of faster and deeper innovation, so why is it not evident in the productivity data, at least for the UK?

Third, we went through a long period of rapidly expanding world trade and emerging global supply chains, but over the past decade this seems to have stalled. How important is this for productivity growth?

Fourth, and relatedly, is the weakness of investment in recent years enough to explain the weakness of productivity growth?

Fifth, and building on the previous two points, post-crisis the weakness in productivity growth has been more concentrated in two sectors, manufacturing and financial services. Weak measured investment and global developments could explain the former, while the latter reflects the necessary strengthening of the balance sheets of banks.

Sixth, is this all an issue about measurement, in two respects? First, is the measurement of output missing too much of the growing digital economy, and the measurement of inputs too heavily based on traditional tangibles (bricks and mortar and machines) and too little on intangibles (the stuff of the modern information economy)? Second, is the measurement of productivity across countries just riddled with inconsistencies?

A seventh issue could be the impact of low interest rates and the survival of currently unprofitable firms for which exit has been slowed by the low cost of borrowing. I will come back to this point in Question 18.

I will offer a few thoughts on these broader issues, though they are of course very large in their scope, so what follows is necessarily brief.

Other things equal, I strongly believe that increased competition and free trade support stronger productivity growth. Effective competition policy can support productivity growth as can so-called supply side institutions. The speed and efficiency of the diffusion of innovation matters as much as innovation itself (in the extreme it doesn't matter where the innovation occurs if there are no barriers to diffusion). A growth in trade barriers through protectionist policies around the world would be detrimental to productivity growth. Analysis of the inter-war period does not indicate that tariffs raised productivity growth. Finally, on these more general points, I think it is hard not to conclude that so-called intangible assets – not bricks and mortar and conventional machines – are an important and growing part of the story and are poorly measured in both company and national accounts, as may be the output from them.

Certainly, attempts to date to include them can change the story on capital and productivity, but it is also noteworthy that relatively little thinking has been done on what if anything may change as a consequence in terms of macroeconomic policy. I think this needs to be addressed.

Pulling all of this together in the context of the current UK situation, I would draw out a number of points. During the initial period after the crisis, companies acted flexibly by holding on to labour and lowering factor utilisation in response to weak demand conditions. But the protracted weakness in productivity since then suggests that other factors like reduced investment have played a more persistent role. The UK economy is relatively open and the size of the financial sector relatively large, which means that global developments, like slower world trade growth and financial sector deleveraging, are likely to have been particularly important in driving the persistent weakness of UK productivity growth since the crisis. The second of these – financial sector deleveraging – indicates also that the level of apparent productivity achieved in that sector before the crisis was unsustainable.

I concur with the MPC's view that since the referendum Brexit related uncertainty has dampened investment growth, which in turn will have affected productivity growth negatively due to weaker capital deepening and potentially subsequent effects on Total Factor Productivity. Business investment has been lower in the UK than in other G7 countries since the referendum. But I must be very clear here that as a public official I have deliberately taken no position on the substance of Brexit. We do though need to provide an environment that supports investment, avoids trade wars, and works to understand the implication of much stronger intangible investment. All of these have important implications for the work of the MPC, and to support a sustained increase in productivity.

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

At any given time, there is an interest rate and quantity of money that balances supply and demand in the economy. If the interest rate is too low (and aggregate demand and the quantity of money too high) then there will be upward pressure on prices. In principle therefore, money growth should provide useful evidence for assessing future trends in economic activity and inflation in a way that arises because of the role that money plays in payments for goods and services. The longer the time horizon over which this relationship is measured the more easily it can be observed. Unfortunately for immediate policymaking, it is less useful and more noisy over shorter time horizons.

On the whole, the relationship between monetary aggregates and spending has strengthened since the 1980s, the latter being a period when rapid innovation in banking and the difficulty for measurement approaches to keep up, severely complicated the relationship. That said, such structural change is of course continuing, and I am aware that the Bank has in the past attempted to use money growth as an incremental indicator in the UK, above and beyond credit and other spending indicators, without much success But I am also aware that the Bank uses small models that incorporate money at a more sectoral level which can provide useful corroborative information for forecasting household consumption and some asset prices.

In contrast, the direct impact on inflation and activity of changes in asset prices can often be material. Rises and falls in equity prices and bond spreads have direct impacts on firms' cost of capital and household wealth, and therefore consumer and business spending.

And a large proportion of the variation in UK inflation over the past twenty years has had changes in the sterling exchange rate or swings in commodity prices as proximate causes.

Above and beyond those direct effects, asset prices can provide useful information for monetary policymakers. Asset markets are forward-looking. Assets are held because they will earn a return in the future. The prices at which assets trade reflect in part the views of market participants about the future state of the world. Extracting information from asset prices on these future views can be used as, for instance, a point of contrast and comparison with the MPC's own projections in its forecast. It can also help inform the MPC's assessment of the forces shaping the economic outlook and how they are evolving.

Policy has to respond to shocks – unexpected developments that were not incorporated in the previous forecast and policy decision. Since at any time asset prices incorporate the market's view of the future, changes in those prices will largely reflect 'news', namely developments which were not previously expected. Identifying these price movements can inform the assessment of shocks hitting the economy, and can affect the MPC's view of the outlook and hence of the preferred state of policy.

The challenge for the policymaker is identifying the degree to which a movement in asset prices reflects: a change in the assessment of the future by markets because their view of the economy has changed; or because their view of the MPC's reaction function has changed; or because markets have changed their view of the balance of risks around the future; or because they have become more or less comfortable about bearing a given risk.

In summary, money growth can in principle provide signals about the future path of spending and inflation, though the relationships are more observable over longer periods of time which limits the utility for monetary policy. Movements in asset prices – through their impact on wealth and the cost of capital – can have direct effects on spending and therefore inflation, or in the case of the sterling exchange rate and commodity prices, direct effects on inflation itself. Asset prices can also contain useful information about financial market participants' beliefs about the future path of the economy, and the main forces shaping the outlook.

18 What impact has holding Bank Rate at near-zero levels for over a decade had on the economy? Please address whether low interest rates have had problematic side-effects, such as house and asset price inflation or raising the prevalence of 'zombie firms'.

Bank Rate directly influences only shorter-term market interest rates. Longer-term interest rates have also been historically low in the UK and internationally. There is a considerable body of work, both in the UK and elsewhere, to suggest that long-run equilibrium real interest rates have fallen very materially in recent decades. These rates are not determined by the world's central banks, but by market forces as the product of the global balance of savings and investment. Work by the Bank estimates that the equilibrium real rate for the UK has fallen by more than 2 percentage points since the early 1990s to between 0 and 1%. It is projected to remain low in the longer term. Estimates for other countries are similar. The causes of this structural decline include the effects of demographic changes (lower population growth, increased longevity and an ageing population with an increased demand for retirement saving) and lower productivity growth.

It is *relative* to these, lower, baseline levels of rates that the actions of central banks should be judged. In 2009, Bank Rate was cut to 0.5% and the MPC first undertook QE in response to the consequences of the financial crisis and the recession that followed.

There is no question that output growth and inflation would have been lower and unemployment would have been higher absent these measures. Without them, the economic cycle would have been more adverse and most likely inconsistent with the MPC's remit.

While unconventional policies operated over an extended period of time have on balance served to stabilise the economy, it is reasonable to ask whether there have been other effects which were more unintended. I am aware that this was the subject of an inquiry by the TSC in 2017. I agree with the Bank's evidence at the time that the decline in longer-term bond yields has had some bearing on the price of risky assets, but in real terms UK house and equity prices remained below pre-crisis levels, and absent monetary policy measures those post-crisis levels would most likely have been even lower.

As an FPC and PRC member I have been involved in discussions with the MPC on the consequences of extraordinary monetary policy measures for the balance sheets of financial institutions, and assessed the effects of the introduction of the Bank's Term Funding Scheme designed to reinforce the transmission of low interest rates.

My assessment is that throughout this period, banks and building societies have achieved a relative stability in their net interest margins (broadly the spread between funding and lending costs) which has supported underlying returns (actual returns have been affected by issues such as PPI which are unrelated to the consequences of monetary policy).

The FPC has considered extensively the potential financial stability risks that can arise from a prolonged period of low interest rates and use of QE. Examples of these would be risks to financial stability arising from leverage, unsustainable debt or credit growth, the distribution of risk within the financial sector and connections between financial institutions. The FPC has targeted tools, and has used them more extensively in my experience than financial stability bodies in many other countries. The FPC's recommendations on the residential mortgage market in June 2014 to address the risks that would arise from a lower increase in highly indebted households illustrate the benefits of a targeted use of macroprudential policies to tackle the risks that could arise from low interest rates and QE.

The Bank's submission to the TSC in 2017 went on to assess the distributional effects of these policies. It noted that an easing in monetary policy can have an initial impact on the distribution of income and wealth through a number of channels, most importantly including an improvement of the position of those who would otherwise have become unemployed. Lower interest rates and asset purchases tend to improve the cash-flow of borrowers relative to savers, and also to boost the value of any marketable assets held by savers. The ultimate effects of these monetary policy measures will pass through to aggregate spending and hence the prospects of all via a stronger economy supporting employment, growth and asset returns.

It is hard to identify substantial direct effects of monetary policy on inequality, and in the UK aggregate measures of inequality have changed relatively little since the early 1990s, whether measured in terms of income or wealth.

I would emphasise developments over a somewhat longer period than the past decade. The rise in house prices up to the crisis was associated with a fall in longer-term real interest rates globally, reflecting the structural factors described above, and contributed to a sharp rise in the inter-generational dispersion of wealth. That trend may not have become more pronounced in recent years as real house prices have if anything fallen, but it does point to a picture that is of importance to the FCA, namely the evidence for larger inter-generational inequality in spite of the stable overall picture.

One of the larger shifts in policy in the UK in recent times has been the change in retirement saving patterns from Defined Benefit to Defined Contribution, with the result that more people are directly exposed to asset values, and have to make explicit choices on their saving rate and choose the vehicle for saving for retirement. The lower return on saving in a world of low interest rates is of relevance here, as is the greater dependence on the level of asset prices underpinning assumptions on wealth in retirement. I agree with the Bank's analysis that the aggregate effect of monetary policy is what matters for the economy as a whole, and I would put more emphasis on understanding the distributional consequences of the structural fall in interest rates.

Finally, it is possible that low interest rates will allow some businesses to survive that would otherwise fail. In the short-run this could reduce productivity growth, and the Bank and others have produced evidence that supports this conclusion, although this does not appear to be a major factor explaining the long-standing productivity puzzle. Moreover, as the Bank recognised, and work at the FCA has sometimes vividly illustrated, it is highly contentious to determine which firms have no future and which have temporary cash-flow problems. I would avoid the term 'zombies', which is pejorative. Overall, the evidence appears to suggest that the macro-economic importance of companies whose life is being preserved by low interest rates is small enough not to believe they create a negative overall effect.

19. The August 2018 *Inflation Report* included an analysis of a long-run equilibrium real interest rate. The Bank's model finds that this has fallen to between 0 and 1 per cent. If you add in the inflation target, that would point to an equilibrium Bank rate of 2 to 3 per cent. Is this analysis in line with your own thinking? Would an equilibrium rate at this level limit the MPC's ability to meet its mandate in the event of a future downturn?

It is important that the Bank assesses and communicates its assessment of the trend real interest rate known as the long-run equilibrium real rate, or R*. Evidence that it has declined suggests that the extent of any necessary future policy tightening will be more limited than would otherwise be the case. Thus, Bank Rate would normalise to a level below its pre-crisis average. The MPC's view on the likely evolution of the equilibrium real rate has been reflected in its communication that rate rises when they are necessary will be 'limited and gradual'. I share this view. Likewise, I agree that this is a global phenomenon not limited to the UK.

The August 2018 Inflation Report set out a useful framework for understanding the equilibrium real interest rate, by decomposing it into longer and shorter-run components. In the long-run, the former (R*) is the most important influence on interest rates. The influences on it are more to do with slow-moving structural factors that affect the balance between the demand for capital and the stock of wealth available to finance it. For an open economy like the UK, these factors will reflect global influences as well as domestic ones.

R* cannot be directly observed. Bank staff estimated in August 2018 that it has fallen from around 2¼ - 3¼% in the early 1990s to around 0%-1% at that time. This implies an estimate of nominal R* in the range of 2-3%. This seems to me to be reasonable as an estimate.

The causes of the fall are more structural in nature, including common global factors of lower population growth, increased longevity and lower productivity growth. The first two raise the stock of wealth households wish to hold to fund their retirement, thus increasing the supply of saving to fund investment demand. Slower trend productivity growth has reduced R* since lower expected returns on investment have reduced the demand for capital. I agree with the MPC's view that these structural influences are expected to persist.

It follows that with a lower R*, the scope, all else equal, to provide additional stimulus to the economy during future downturns with cuts in Bank Rate will be less. As a point of comparison, over both loosening and tightening cycles between 1994 and 2007, the average cumulative charge in interest rates in the UK was around 1½% (it was larger in both the US and the euro area). As a consequence, Bank Rate would be likely to be at its effective lower bound (ELB) more often and for longer periods of time, making it more likely that to stabilise the economy in the face of a negative shock, the MPC would need recourse to unconventional tools. I should make clear that as things stand, I do not, regard negative official interest rates as a plausible tool.

For all countries, negative rates create the prospect of substitution into cash. The Bank has also, rightly been concerned about the impact negative rates would have on the viability of small banks and building societies and the provision of credit to the economy. The Bank was able to mitigate this risk when Bank Rate was cut to 0.25% by introducing the Term Funding Scheme which helped the rate cut to be passed on to lower lending rates without significant pressure on lenders' net interest margins or the supply of credit to the economy. But this would be much harder to achieve at negative rates.

That said, the last decade has provided plenty of practice in the use of unconventional tools – quantitative easing, corporate bond purchases, funding for lending, term funding and forward on its own guidance. These tools have been shown to be effective. The level of Bank Rate is not a good guide, therefore, to the extent of monetary policy 'headroom'.

Nonetheless, the consequences of low rates persisting are important, and the Bank needs at all times to ensure it is fully seized of the options it possesses and how they can be used.

20. What are the costs and benefits of the MPC collectively, and members individually, providing greater clarity on their expectations for the path of interest rates, including through conditional forecasts?

Guidance about future rates or the MPC's reaction function can be useful in providing information about the intentions of the MPC. This can help households, businesses and market participants to plan. It can also increase the effectiveness of monetary policy by reducing unwarranted volatility in interest rate expectations and the extent to which the MPC has to change Bank Rate to meet the inflation target. The MPC currently provides significant guidance towards this end, including through its forecasts in the Monetary Policy Report, qualitative statements about future policy in the statement, minutes and press conferences, and the speeches of individual members.

Central bank guidance about future rates can be on a spectrum from more to less specific. At one end, a small number of central banks – beginning with the Reserve Bank of New Zealand – have started to publish explicit projections for policy rates with a swathe around the central path. The MPC publishes forecasts based on two assumed paths for the official interest rate – one constant at the existing level, one taken from the forward interest rates prevailing in financial markets at the time. In conjunction with the other conditioning assumptions, the implications of these paths for growth and inflation are published in the MPC's fan charts. An alternative approach is to construct, within the forecast, the path of interest rates that would "best" meet the MPC's objectives, given the other conditioning assumptions.

I would make four observations about the possible costs and benefits of the MPC adopting its own interest rate path.

First, publishing an interest rate path could be a more direct way to communicate policymakers' best collective view of future policy and the risks around it than is currently the case. This approach conveys particular advantages if there are inconsistencies in the forecast that emerge when market interest rates, on which the forecast is currently conditioned, are based on beliefs that differ from the assumptions in the MPC's forecast. That would, for example, have been important in August 2019, when the MPC's projections excluded the possibility that the UK left the EU without a deal, whereas asset prices did take into account the full range of possible Brexit outcomes. This aspect of rate paths can also help move the forecast one step closer to the MPC's unconditional view of how growth and inflation might develop.

Second, set against those possible advantages, there is a risk that the published interest rate path could be misunderstood and seen as an unconditional promise. As optimal policy inevitably changes in response to news about the economy, this could be seen as the MPC reneging on earlier promises, possibly damaging the credibility of the Committee and undermining policy effectiveness. Relatedly, there is a risk that the quantified path conveys an unwarranted level of precision over a variable that is inherently very uncertain. Experience has shown that, when discussing the fancharts for GDP growth and inflation, commentators routinely pass over the uncertainties of any forecast and reduce these projections to single, point numbers with by implication excessive confidence in their accuracy. When it comes to interest rates, I think what is important for guidance is that it helps people understand the broad outlook for policy and how it might depend on important events and that it can change over time. For this purpose, well chosen and not over-confident verbal communication may be enough. One example is the MPC's guidance in early 2014 to convey its view that equilibrium real interest rates were historically low and likely to remain so. The MPC said that it expected any rises in the policy rate to be gradual and that "even when the economy had returned to normal levels of capacity, and inflation was close to target, the appropriate level of Bank Rate was likely to be materially below the 5% level set on average by the Committee prior to the financial crisis". This was important. It also achieved its aim without a precise numerical counterpart, and it concentrated on explaining a causal force rather than trying to predict the outcome of the next meeting.

Third, while an interest rate projection could make the forecast more coherent, it would still not be fully internally consistent – and could, on occasion, be misleading. That is because the forecast is conditioned on a range of other asset prices, including the exchange rate, and those asset prices too might be based on beliefs that differ from the assumptions in the MPC's forecast. One recent example involves the exchange rate. Like forward interest rates, Sterling's exchange rate was until recently materially depressed by the market's perception that the UK might exit the EU without a deal. A forecast that is influenced by an exchange rate that discounts some chance of a different outcome, but that allows nowhere else for that chance, will probably overstate the upside risks to inflation. An "optimal policy" fanchart for interest rates would in this case be actively misleading.

Finally, it is not clear which process the MPC would use to decide on the published interest rate path. It would probably not be feasible to reach decisions in the same way as for Bank Rate and asset purchases where there is a majority vote and members are individually accountable for their votes. It might be possible to publish a path that the majority of members thought plausible or reasonable, or a path based on optimal policy simulations under some simplifying assumptions. But these differences would detract from the informational value of the path.

Taking these points together, I do not think the evidence is clearly on one side or the other. Different approaches have worked well for different central banks. And different members of the MPC reasonably have different views about the balance of the advantages and disadvantages. My preference is to include this issue in the research review proposed by the Bank.

21. 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? Please discuss what it implies for the relative weighting that MPC members should give to deviations of inflation and output and the suitable length for which members should tolerate deviations.

One of the strongest features of the UK monetary regime is the clarity of the target, 2% measured by the twelve-month increase in the Consumer Price Index. An important enhancement to the regime was the clear statement beginning with the 2013 remit that the MPC is required to have regard to trade-offs between keeping inflation at the target and avoiding undesirable output volatility. I agree with Mark Carney's recent description of this as meaning that the MPC has the freedom to use the full flexibility of inflation targeting when faced by exceptionally large shocks to return inflation to target while providing as much support as possible to employment and growth or, if necessary, promoting financial stability. This provides a sensible description of how the Bank's macro objectives are fitted together, with useful flexibility to respond in exceptional circumstances.

Two points are worth noting here. First, only some shocks present an economically significant trade-off for policymakers. In the absence of a shock that induces a trade-off by pushing output and inflation in different directions there is not tension between closing the output gap and stabilising inflation, and the task of policy is relatively straightforward, though the horizon over which it operates will reflect the lags in the transmission mechanism of monetary policy. Second, before the financial crisis, in the first decade of the MPC's existence, the trade-offs were quite modest compared to what was to come. The MPC's revealed preference was to return inflation to target over a horizon of around 18 months to no more than 3 years and usually less, therefore smoothing the adverse effects of the excess vulnerability of output caused by the shock. But the financial crisis and its aftermath demonstrated much larger and persistent shocks, representing exceptional circumstances.

In 2013, the MPC concluded that the unprecedented circumstances of the time warranted bringing inflation back to the target at a slower pace than normal in order to provide more support to output. The MPC explained that this assessment reflected the lower level of resource utilisation, and the risk that a sustained period of lower output could lead to a persistent reduction in the potential supply capacity of the economy (so-called hysteresis effects). This had to be weighed against the opposite risk that a more gradual return of inflation to target might cause inflation expectations to move away from the target level, and in turn create more persistent pressures on inflation.

The second decade of the MPC's existence has seen the more common occurrence of material trade-offs. Following the crisis, the economy underwent a large supply shock and an exchange rate depreciation creating the trade-off tension. Moreover, the crisis emphasised that in such extreme circumstances, the Bank may have to take into account financial stability considerations in setting monetary policy with potential consequences for the short-term path of inflation control.

I would emphasise the importance of a point set out in the remit, namely that "informing and communicating its judgments, the Committee should provide understanding of the trade-offs inherent in setting monetary policy", including, importantly "the horizon over which the Committee judges it appropriate to return inflation to target". Such actions will be aided by the transparency and accountability mechanism of the MPC, including minutes, testimony to Parliamentary Committees, and the requirement for an exchange of open letters with the Chancellor if inflation is more than one percent away from the target.

I would emphasise the open letter here because it seems to me that given the circumstances of its use, in many ways the most important role of the letter is to provide a clear signal of the MPC's toleration of the deviation from target, and thus of the perceived trade-off between inflation and output. This judgment on tolerance must be made whether or not inflation has moved into letter writing territory, and it would be influenced by the views of each member on the nature of the shocks hitting the economy and the transmission mechanism; in other words, why the economy is behaving as it is, and how interest rates affect output and inflation.

The question asks about the relative weight that MPC members should give to deviations of inflation and output, and how this shapes the preferred return to target. The remit does not specify the relative weights, in my view rightly so, because it depends upon the circumstances and context. I would agree with Mark Carney's assessment that over the whole inflation-targeting era, there is some evidence that monetary policy decisions are consistent with the MPC placing around a fifth as much weight on output deviations from potential relative to inflation deviations from target. But that is an average over time in very different circumstances, and a long way from being a rule.

Like most monetary policymakers, I am not in favour of adopting a rule-based approach to setting policy. Rules can be useful tools to assess the past stance of policy, not in the sense of determining whether policy was right or wrong, but rather to illuminate why it had moved away from a rule that assumed strict consistency over time regardless of the context (because I do not believe that a rule could be written which captures the whole context all of the time). An example of the importance of context is the case that the Phillips curve is currently flatter, for which I think there is a good argument. In this context, a given output gap is associated with smaller movements in inflation. Put another way, the output consequences of getting inflation back to target are larger, and it can therefore make sense to choose to take longer to return inflation to target.

When the MPC faces this context, as it can do, a number of issues would be important for me. First, can we be confident that the chosen strategy, and how it is explained, will not cloud the clarity of expectations formation across the economy about future inflation? In other words, don't muck up the success that the MPC has seen in anchoring expectations around the target, which benefits the whole economy. Don't overcomplicate policy in a way that clouds the judgment of people on the future.

Second, be careful when using a term like 'exceptional circumstances' to describe the trade-off and its incidence. The term 'exceptional' was perhaps a better description of the existence of a trade-off in the first decade of the MPC. In the second decade, it was less exceptional. I think it is more important that the MPC describes how it will respond to the existence of a material trade-off than agonises about whether it is truly exceptional or not.

Third, think carefully about communication and aim for clarity including recognising what is uncertain.

The focus of communication will be around the overall strategy (the MPC communicating that its strategy is to manage trade-offs); the intended path for inflation (is the horizon for returning inflation to target longer or shorter than the norm); and the implications for the expected path of interest rates.

Fourth, does the context raise the prospect that necessary actions by the MPC could lead to outcomes that the FPC may judge to represent a risk to financial stability? For instance, would the chosen path of interest rates cause excessive debt build-up, or financial risk taking in ways that could put longer-term growth and stability at risk? The FPC is the first line of defence against such a risk by using its macroprudential tools.

Financial stability

22. Other than Brexit, what in your view are currently the most significant risks to and points of vulnerability in global and domestic financial stability?

As noted before, my assessment of risks is based on membership of the FPC, and the consensus view of the November 2019 Financial Stability Report.

In the UK, domestic vulnerabilities (excluding Brexit) that can amplify economic shocks had not changed materially over the past year and remain at a standard level overall.

Although the stock of non-financial credit relative to GDP remains high by historical standards, it has fallen by around 20 percentage points or so since 2008. Over that period, UK household debt has come down from 141% to 121% GDP. In the low interest rate environment, high levels of debt have not translated into high debt servicing burdens for households and, as discussed below, interest rates would need to rise materially even to return the share of households with high debt servicing burdens to its historic average.

The outlook for credit growth also softened towards the end of last year. As described earlier, growth has slowed. There have been some tentative signs of tighter corporate credit conditions and the supply conditions in the mortgage market have stabilised after a prolonged period of easing.

International investor demand for UK assets, notably commercial real estate, has fallen. Overall, the UK has a reliance on foreign capital inflows as evidenced by the financing of the current account deficit. A significant share of these flows has been in the ‘other investment’ category which is particularly volatile in nature and more of a residual category. The FPC has assessed that while this makes the UK vulnerable to a reduction in international investor appetite for UK assets, which could lead to a tightening in credit conditions for households and businesses, caution is needed in interpreting such a volatile series.

The global economy had continued to slow, in part reflecting the broad effects of the trade war between the United States and China. In Hong Kong, the political tensions contributed to a sharp fall in economic activity. The FPC judged that the 2019 stress-test scenario for the global economy was sufficiently severe to encompass economic risks from both a broader trade war and tensions in Hong Kong. It remains to be seen how the recent outbreak of the coronavirus will affect activity in the region.

The FPC continued to judge that underlying global vulnerabilities remained material, and there are risks of further deterioration. These include debt vulnerabilities in some areas, risks in the euro-area banking sector, exposure of some non-China emerging market economies to changes in risk sentiment, risk of illiquidity in financial markets, and less room for some monetary authorities to respond to shocks.

23. What assessment have you made of the changes to the housing and mortgage market that have occurred since Bank Rate reached near-zero levels and the implications for financial stability if and when Bank Rate is raised towards historically normal levels in future?

The FPC has spent a substantial amount of time since it was created in 2013 assessing the changes to the housing and mortgage markets, and the implications for financial stability of near zero rates and scenarios in which rates rise.

In the UK, mortgages are households' largest financial liability and lenders largest loan exposure in aggregate. The evidence, and particularly for the UK, is that households are more likely to cut back sharply on consumption spending in order to continue to make their mortgage payments in the face of adverse shocks. The larger the number of highly indebted households, the larger and more prevalent this effect tends to be. This is an important example of a cyclical macroprudential channel where a build-up of debt can affect the depth of subsequent downturn. Moreover, if a larger number of households have repayment difficulties, the resulting defaults could compromise the capacity of lenders to keep supplying credit to the economy during a downturn.

In past UK upturns, UK lenders' underwriting standards have loosened sharply and with highly damaging effects. It has led to a significant increase in household indebtedness and the number of more highly indebted households, and has contributed to the scale of subsequent economic downturns and more lasting problems.

In 2014, the FPC became concerned that the trend in mortgage lending was pointing towards an increased risk of a larger share of highly indebted borrowers. To insure against this, in June that year the FPC introduced two recommendations:

- an LTI flow limit which restricts the number of new mortgages extended at LTI ratios of 4.5 or higher to 15% of the new mortgages issued by a lender;

- an affordability test which specifies that mortgage lenders should assess whether borrowers could still afford their mortgages if, at any point over the first five years of the loan, their mortgage rate were to be 3 percentage points higher than the reversion rate specified in the mortgage contract at origination. The affordability test builds on the FCA's rules that require lenders to assess whether prospective borrowers could afford their mortgage, taking into account their income, spending patterns and potential future interest rate increases.

The affordability test builds a 'safety margin' between a household's mortgage payments and income that seeks to ensure the household sector is better able to withstand adverse shocks to income, employment and mortgage interest rates.

The FPC's two Recommendations complement each other in protecting households' ability in aggregate to service their debt. They also complement the annual stress test of major lenders, which assesses whether lenders can withstand sharp economic downturns, including large falls in house prices, while continuing to lend.

Last year, the FPC reviewed its Recommendations. It judged that they remain effective insurance. The Committee will continue to review its calibration and implementation on a regular basis. The latest evidence has, if anything, strengthened the macroeconomic case, suggesting that during the financial crisis, countries that had higher levels of household debt relative to income initially saw larger falls in aggregate consumption.

For example, data from the Living Costs and Food Survey show that, during the financial crisis, the fall in consumption relative to income among UK households with loan to income (LTI) ratios above four was around three times larger than the fall for those with ratios between one and two.

Recent studies from the US and UK also indicate that highly indebted households are more prone to cutting spending sharply because they are more likely to lose access to credit in a downturn, which reduces their ability to smooth consumption.

As part of that review, the Committee assessed the costs and benefits of the measures and concluded that the benefits substantially outweighed any macroeconomic costs of forgoing a temporary boost to economic activity from any loosening in underwriting standards. Indeed alternative policies of either using the CCyB or Bank Rate to achieve similar benefits of dampening recessions would be much more costly to the wider economy and present a greater risk to the FPC's secondary objective to support the government's economic policy of strong, sustainable and balanced growth.

The FPC monitors the extent to which its policies are, as intended, holding back increases in the number of highly indebted households. These measures have had a limited effect to date on mortgage availability. At the margin, some borrowers may have taken out smaller mortgages as a result of the Recommendations, as intended.

Since the Recommendations were introduced, mortgage loans have 'bunched' just below 4.5 times LTI. At the same time, lending at LTI multiples above 5 has declined. In part, this is likely to represent some individuals being constrained to take on smaller loans than they would have otherwise obtained. The size of this impact is small in aggregate. If the share of borrowers with an LTI between 4 and 4.5 had not increased from the level before the FPC Recommendations were made, and the additional borrowers in that category were to obtain an LTI of 5 instead, the value of new mortgage lending since the measures were put in place would be only 1% higher than it is today.

In part as a result of the measures, the UK household sector is resilient to increases in Bank Rate. The share of households with a mortgage DSR over 40% – above which they are more likely to experience repayment difficulties – has been around 1% over the past three years. However, the large majority of mortgagors would find their repayments affordable if mortgage rates were to rise appreciably. Interest rates would need to increase by 200-300 basis points for the share of households with DSRs at 40% or above to reach its 1997-2006 average of 1.8%. Another relevant change here is that more mortgages are now set to longer fixed rates. Before the crisis, mortgagors were not affected by interest rate changes for on average just over a year. Today, it is more like three years, reflecting a fall in the number of variable rate mortgages and a lengthening of the term of the rise in fixed rate mortgages. This will provide more time for households to adjust to the shock.

The FPC keeps its measures under review. It intends to monitor, in particular, the extent to which Bank Rate changes are passed through to mortgage reversion rates to assess whether there is a case for revising the calibration of its Recommendations. I support this for reasons set out below.

The mortgage affordability test is based on the mortgage reversion rate because it is the rate the mortgage will revert to contractually and can be avoided only if the borrower is able to refinance. The reversion rate is the (typically floating) interest rate to which a mortgage reverts after the initial often fixed rate contractual period.

Borrowers may be unable to refinance in an adverse shock, meaning that households could experience a sudden rise in their effective mortgage rate. For example, after the crisis, one third of mortgagors were on the standard variable rate.

Reversion rates have been relatively static in recent years. While initial mortgage rates have fallen, in part reflecting lower funding costs for banks, reversion rates have changed less. Reversion rates have remained just above 4%, much higher than Bank Rate at 0.75% and deposit rates of around 1%. This implies a spread between reversion rates and Bank Rate of around 3.5 percentage points, compared to a spread of under 2 percentage points in the lead up to the crisis.

This spread between initial mortgage rates and reversion rates increases the risk that households could experience a sudden rise in their effective mortgage rate if they are unable to refinance at the end of their current mortgage contract. It is therefore appropriate to capture these risks in the affordability test by linking it to the reversion rate.

However, if and when Bank Rate increases, lenders may choose not to pass those increases through fully to reversion rates. It is possible their interest margin can be maintained without increasing lending rates because their funding costs may not rise one-for-one with Bank Rate. In part that is because sight deposit rates, having reached close to zero, have not fallen by as much as Bank Rate since 2008. Lenders may therefore seek to raise deposit rates by less than Bank Rate in order to restore the historical spread between them.

If this were the case, it would – other things equal – reduce mortgagors' exposure to future increases in mortgage costs and could merit an adjustment to the 3 percentage point increase in reversion rates embodied in the affordability test. But several other factors would also need to be taken into account, including: the potential risks to household incomes and employment status.

24. Can you envisage circumstances in which the FPC and MPC would attempt to underpin or stabilise sterling exchange rates in order to meet the financial stability objectives? If so, what form might this action take?

The Bank has three potential sources of foreign currency liquidity to support its policy objectives: the standing swap lines with other central banks, the Bank's foreign currency reserves on its own balance sheet (c$25bn) and the foreign currency reserves on the Exchange Equalisation Account (EEA) owned by HM Treasury (c$180bn).

The MPC can instruct intervention only in support of the Bank's Monetary Policy objective. The Bank holds a relatively small amount of foreign currency reserves on its own balance sheet for this purpose. That could in principle be deployed by the MPC if the Committee decided to use this tool; this has never been used.

From a Financial Stability (FS) perspective, the Bank currently makes liquidity available in foreign currencies (US dollars and euros) on a weekly basis in its regular official operations. This is a sensible financial stability backstop, in case banks' holdings of liquid assets are not in the currency they need and they are unable to access relevant FX markets. The Bank can use swap lines to support such operations.

Although these liquidity facilities are not designed with the aim of stabilising the exchange rate, their existence as a backstop facility is designed to help maintain confidence in financial markets more broadly and could reduce the risk of dysfunction in the foreign exchange market.

FX intervention action is traditionally done in the spot FX market. Swap lines with other central banks are not designed to be used for these purposes. Primarily it is the Government's reserves held in the EEA that would be used given their larger size and the intervention objective set out in the EEA Act. The Government 'owns' the exchange rate policy, and it would be the Chancellor's decision to use them.

The global Foreign Exchange market is very large, with an estimated $6.6trn traded every day, and around $844bn in sterling-pairs. It is generally a well-functioning market. There are some scenarios where a market failure might occur and a public policy case for intervention might be justified. This would be most likely if a disorderly market prevented economic agents from carrying out normal currency conversion, financing and hedging activity, particularly if this persisted for a protracted period. Second, disorderly conditions in FX markets could spill over into other sterling assets (e.g. sterling money markets, bank financing, corporate bonds), which could result in forced deleveraging, dysfunction and an increase in risk premia. Third, there is potential that sterling depreciates very rapidly in response to a major event, perhaps with discontinuities in pricing. In themselves, rapid movements should not be a concern, with previous 'flash' events in various markets having had few material financial stability implications. But flash events could have second-round impacts, such as reducing confidence in market functioning and/or triggering large participants to exit the market. In that event, intervention might be justified to forestall the possibility of extended, damaging, dysfunction, or contagion to other markets. Such dysfunctions could be relevant to the FPC insofar as they might threaten the consistent supply of the critical services that the real economy demands from the financial system.

Any decision to intervene would come in response to an extreme deterioration in market functioning that was deemed unlikely to self-correct, and it might well be accompanied by a significant and persistent overshoot of the level of the exchange rate beyond that consistent with any reasonable set of estimates of fair value.

In my experience, the Bank takes a judgment-based approach to forming a view on the level of market dysfunction. This would incorporate qualitative market intelligence and a range of quantitative metrics relevant to the scenario, such as levels of volatility, traded volumes, bid-offer spreads, the level and daily change of the exchange rate. There is no agreed threshold for action, but certain deteriorations are a trigger to consider the case for intervention. This strikes me as appropriate.

25. The FPC is required to reach its views and decisions by consensus where possible, whereas the MPC routinely votes. How do you expect this difference to be reflected in the way you chair these committees, and what do you see as the benefits and risks of the FPC making decisions by consensus?

Both Committees have a very well developed process of deliberation leading up to the decision-making part. My sense is that important aspects of that deliberation process are not that different – and therefore nor is the role of the Governor as chair. At the heart of deliberation is reasoned argument, and my job will be to enable that to happen in a way that contributes to good decision-making in both Committees.

That said, I think that the important starting point on this question is to recognise the different decision-making tasks of the two Committees. While it would be wrong to characterise the MPC decision as a binary choice from the outset ("up or not", "down or not"), I think it is reasonable to characterise deliberation in the Committee setting as a funnel that will tend to lead to that choice.

It is somewhat more complicated in the world of unconventional monetary policy where there is more than one decision (i.e. on the rate and on QE quantities) but my sense is that at least in the current environment that does not make a large difference to the decision process. Also important is that the decisions are about numbers not about a choice of words (though words obviously come into play in agreeing the best collective judgment of the MPC in the Monetary Policy Report).

The FPC is a different process because many of the individual decisions are mutli-dimensional, and choices of words can matter in shaping their effects (this is not the case for the choice of the Counter-Cyclical Capital Buffer or CCyB). Moreover, and again with the exception of the CCyB, FPC decisions are more structural and less easily reversible in the sense that their consequences can be long lasting. The FPC also makes a lot more decisions in a single round of meeting, covering a range of topics, but I would put less weight on this as a distinguishing feature of the FPC because in my experience there has never been a case of trading off preferences ("if you give me what I want on this subject I will back your preference on that other subject which you care about"). I have never detected it, and would not approve of it.

Finally, transparency in terms of published minutes and reports, and the accountability process are very important too. For instance, in the case of the FPC, it is very important that where a consensus is in effect an umbrella for some different shades of opinion, that those opinions are set out and described in terms that can add to the understanding of the consensus. But the same is true for the MPC in the sense that different opinions and votes need to be well explained.

26. What is your assessment of the FPC's overall record since its establishment in developing and embedding the UK's macroprudential policy regime and improving financial stability? What do you think its priorities should be over your term as Governor?

As I have mentioned before, I have been a member of the FPC since it was created, so my assessment of its record is not unbiased.

One way of looking at this question is via an international comparison. I think the FPC is among the most developed financial stability decision-making bodies anywhere (if not the most developed). In 2016, the IMF described the FPC's then much shorter track record as "encouraging". In my view there is reason to continue with that view. If I were to single out a number of the FPC's achievements I would point to the bank stress tests, work on mortgage lending and high indebtedness, Brexit preparations and assessment, and the application of the CCyB.

In terms of priorities for my term, I have a number, but I would note – in the spirit of the last question – that these have not yet been the subject of reasoned argument with my FPC colleagues.

First, I think the FPC has to do more to embed a broader understanding of its role and functions, and this will be an important task for me as Governor. My FPC colleagues have done important work in this area, for instance through speeches. But I think there is a recognition that we have more to do, and that it is important because when financial stability does come under stress, and at some point in the future this will happen, the FPC's position and effectiveness will be strengthened by better understanding. That said, I would not expect the CCyB to become a matter of widespread everyday conversation. It is highly technical, and our task is to convey the broader essence of why financial stability and the FPC matter.

Second, I think we have more to do in developing the framework for assessing and describing risks in a systematic way. This is not because the FPC is lagging others in this respect, but rather because it is a challenge for all such bodies. There are interesting developments such as the IMF's "GDP At Risk "framework", but in my judgement, none has yet really nailed the issue.

Third, since the crisis the bank capital regime, or capital stack as it is often known, has been reformed and enhanced. This is good. But it is now about as complicated as it is possible for it to be. One diagnosis of this situation is that, rightly, the capital stack is now the outcome of three policy areas at work; microprudential; macroprudential; and resolution. It was a flaw of the pre-crisis world that only microprudential made up the stack. However, complexity brings its own risks, not least the likelihood of limited understanding. I agree with Mark Carney who has pushed for being able clearly to summarise the capital stack in terms of a total number, and this is obviously a focus of firms and markets. But I think we also need, and this will have to be done internationally, to think about how we can simplify the stack itself without compromising on its effectiveness.

Fourth, since the crisis there has been a shift in the balance of financial intermediation in many parts of the world from banks to non-banks. We should not be surprised at, or resistant to, this, but we should understand the consequences. It has meant a shift in the balance of intermediation from contracts where the firm acts as principal (banks, insurers) to ones where the firm acts as agent (investment management). That changes who bears the risks in ways that are not always as well understood as they need to be, into a world where the value of savings is not guaranteed in the same way. And it can create new risks in terms of how investors respond to large shocks such as a decline in asset values. The FPC has done important work in this area – for instance, on liquidity risk in open-ended funds, but my view is that there is more work to be done.

Finally, the whole area of operational risk touches on the work of the FPC inevitably. This, too, will grow as an area of work.

27. What is your assessment of the macroprudential tools available to the FPC, including the Countercyclical Capital Buffer, and whether they are sufficient to guarantee financial stability without monetary policy being used in support? Are there any additional tools that you think the FPC may require in order to meet its financial stability objectives?

My general assessment is that this question tends to be discussed in a way that misses the important point. Discussion tends to proceed on the assumption that the FPC has a fixed bag of tools and then asks whether it needs more. Allied to this is the further element of the discussion which goes along the lines of since we don't know what we don't know, there must be tools out there yet to be delivered, hence the toolkit is not adequate. But this misses the point that since the FPC can make recommendations to other bodies (notably the PRA and FCA), and by doing so it can attach all the tools of these other bodies, of which there are a lot more.

Finally, the targeted nature of macroprudential tools makes them a natural first line of defence against financial stability risks, imposing lower costs on the economy than a change in monetary policy. But monetary policy can be used as a last line of defence, and that should continue.

Prudential regulation

28. What is your assessment of the Prudential Regulation Authority's (PRA's) and PRC/PRA Board's overall record since their establishment in developing and embedding the UK's post-financial crisis prudential regulatory regime? What do you think its priorities should be over your term as Governor?

I should observe that I am hardly a neutral commentator on this question since I led the work to establish the PRA, was its first CEO and Deputy Governor from 2013 to 2016, and have been a member of the PRC continuously since it was created.

That said, I do think that the PRA has achieved a much needed and major transformation of the prudential regimes for banks and insurers. Among the achievements, I would pick out:

- Banks' capital and liquidity positions have improved dramatically over the past decade. This was demonstrated by the 2017 stress test (and repeated in 2018 and 2019). For the first time since the Bank of England launched its stress tests in 2013, no bank needed to strengthen its capital position. The test showed that losses that would have wiped out the entire equity capital base of the banking system in 2008 could be fully absorbed within capital buffers.

- The PRA and FCA have now completed ring-fencing reforms to protect critical UK retail banking services from the risks that come with wholesale banking activity. This is the largest ever reform to the structure of the UK banking system.

- Through the introduction of the Senior Managers Regime, the PRA and FCA have introduced a single regime for identifying the most senior decision-makers in banks, insurers and major investment firms, and setting requirements on them. This clearly establishes the link between seniority, responsibility and accountability. It both strengthens individual accountability and reinforces collective responsibility among boards.

- Last year marked the fifth anniversary of the PRA's secondary competition objective (SCO). Building on the success of the New Banks Start-up Unit, the PRA has introduced the New Insurer Start-up Unit, to make sure that new firms can introduce new ideas to the market. Now fully embedded in the PRA's policy processes and supervisory approach, the SCO will help to maintain a regulatory environment that promotes innovation.

- The PRA, along with the rest of the Bank and the FCA, has worked to make sure the core of the UK financial system is ready for Brexit, whatever form it takes. The PRA has, with the FCA and HM Treasury, ensured that the necessary legal instruments, regulations, authorisations, and supervisory arrangements are in place to ensure continuity. The UK's regulatory framework will be fully functional when EU law ceases to apply directly in the UK.

- As financial firms use technology to an ever greater extent, cyber risk becomes an unfortunate inevitability. The PRA and FCA are at the forefront of promoting cyber resilience, working closely with UK and other international regulators. To improve firms' cyber defences, the largest banks at the core of the UK financial system are subject to penetration tests (known as CBEST) and must address any deficiencies. In parallel, to ensure resilience, the PRA and FCA have begun setting standards for how quickly critical financial institutions must be able to restore vital services following a cyber attack. This is consistent with the wider approach the PRA, the Bank, and FCA are pursuing on operational resilience, ensuring firms plan for failure, and can recover critical functions appropriately quickly.

The PRA's strategic goals as set out in the 2019/2020 Business Plan are:

- have in place robust prudential standards comprising the post-crisis regulatory regime, and hold regulated firms, and those who run them, accountable for meeting these standards ('robust prudential standards and supervision');

- continue to adapt to changes in the markets in which the PRA is involved and pre-empt and mitigate risks to its objectives ('adapt to market changes and horizon scanning');

- ensure that firms are adequately capitalised, and have sufficient liquidity, for the risks they are running or planning to take ('financial resilience');

- ensure that operational resilience is established in the prudential framework and through time becomes as embedded in the supervisory approach as financial resilience is today ('operational resilience');

- ensure that banks and insurers have credible plans and capabilities in place to enable them to recover from financial stress events, and that the PRA supports the Bank as resolution authority to have a credible strategy to manage a firm's failure in an orderly manner ('recovery and resolution');

- facilitate effective competition by actively considering the proportionality of the PRA's approach as it contributes to the safety and soundness of the UK financial system ('competition');

- deliver a smooth transition to a sustainable and resilient UK financial regulatory framework following the UK's exit from the EU ('EU withdrawal'); and;

- operate effectively and efficiently by ensuring that resources are allocated to work that best advances the strategy and reduces the greatest risks to the delivery of the PRA's statutory objectives ('efficiency and effectiveness').

The PRC has decided to conduct a strategic review of the PRA in 2020. This review is envisaged to have three outputs: the headline strategy for the PRA for the coming period; flowing from this, a new set of strategic priorities for the PRA; and based on these to update the PRA's target operating model. I welcome this initiative.

29. To what extent are you concerned about the operational resilience of UK financial services firms?

In my view, operational risk and the need for resilience is the area that has risen furthest and most rapidly up the league table of risks in the period since the financial crisis. Today, it is very near to the top of that table, and a major issue for the Bank, PRA and FCA. Moreover, it is not like some of the other risks that we deal with, most notably because it can change and evolve as a threat very rapidly, in part because of the wide range of vulnerabilities and in some areas because of the presence of hostile actors.

From the perspective of the PRA, operational incidents have the potential to threaten the safety and soundness of firms in extreme but not implausible scenarios. The existing regulatory framework places responsibility on firms for their operational resilience. For example:

- The Senior Management Function (SMF) 24, the Chief Operations function, places legal responsibility on an individual within a firm for its internal operations and technology.

- There are rules in place regarding management and governance; risk management; contingency planning; and oversight of outsourcing arrangements.

The regulators work closely with the National Cyber Security Centre (NCSC) which provides preventative advice and support in the event of a cyber attack across all sectors including financial services. Likewise, the regulators work with the Information Commissioner's Office (ICO).

Increasing the operational resilience of authorised firms and Financial Market Infrastructures (FMIs) is a shared priority for the Bank of England (as supervisor for FMIs), the PRA and the FCA. The regulators published a co-ordinated Consultation Paper (CP) last December which builds on the concepts set out in the operational resilience Discussion Paper published by the authorities last year. The policy proposals make clear that firms and FMIs are expected to take ownership of their operational resilience and that they will need to prioritise plans and investment choices based on their impacts on the public interest.

If disruption occurs firms are expected to communicate clearly, for example providing customers with advice about alternative means of accessing the service.

Under the proposals, firms and FMIs would be expected to:

- identify their important business services that if disrupted could cause harm to consumers or market integrity, threaten the viability of firms or cause instability in the financial system;
- set impact tolerances for each important business service, which quantify the maximum tolerable level of disruption they would tolerate;
- identify and document the people, process, technology, facilities and information that support their important business services; and
- take actions to be able to remain within their impact tolerances through a range of severe but plausible disruption scenarios.

To complement the policy proposals on operational resilience, the PRA has published a Consultation Paper on 'Outsourcing and third-party risk management'. The objectives of this consultation are to deliver on the Bank's commitment to "facilitate greater resilience and adoption of the cloud and other new technologies", as set out in the Bank's response to the Future of Finance report, and to support the proposals on operational resilience. It reinforces the PRA's expectation that firms should ensure that their important business services are able to remain within their impact tolerances when they rely on outsourcing or third party providers.

All of this is very important work, which I think puts the UK regulators at the forefront of international practice, and which I will maintain as a key priority. But I have to be clear that these operational risks are and should be a concern irrespective of the good work being done, for the reason that we face rapidly evolving risks and hostile actors. That said, I also encourage firms as part of my current role, and will continue to do so, to take all sensible steps to avoid self-inflicted problems caused by poor management and oversight, poorly maintained technology, poor change control etc.

30. How confident should we be that the Bank's resolution regime will solve the problem of 'too big to fail' in banking?

Again, I should declare a past which gives me some interest in the answer to the question. Off and on I have undertaken bank resolutions, activities to reduce the impact of bank failures, and the provision of emergency liquidity assistance to banks since the earlier part of the 1990s. My first bank resolution was National Mortgage Bank, the resolution of which was completed in 1994. Shortly after that, I undertook a number of operations by the Bank to limit the impact of the failure of Barings. During the financial crisis I led the Bank's resolution work and established what is now the Resolution Directorate. I was heavily involved in the early work of the Financial Stability Board internationally to strengthen the policy and practice of bank resolution with a view to solving the problem of 'too big to fail'.

The modern UK resolution regime emerged during the financial crisis. At the start of the crisis, there was no regime, and this severely hampered dealing with Northern Rock. By the end of the crisis, a new statutory regime was in place, and had been used to resolve the Dunfermline Building Society. But this left a great deal to be done to solve the too big to fail problem, as distinct from having the tools in place to resolve smaller banks and building societies.

The regulatory system in the UK is not designed to ensure that no firm ever fails. While comprehensive reforms made since the crisis have reduced the probability of a major bank failing, the owners, creditors and management of banks, must be subject to the disciplines of the market. Neither banks nor investors should anticipate public support, and banks should be incentivised to serve customers, clients and investors without taking excessive risks, thus ending 'too big to fail'.

Where bank failure does occur, it must be able to happen in an orderly way – so that financial contagion is minimised, and that households and businesses can continue to access the banking services on which they rely. This means that insolvency is not a credible option for major banks as it is not feasible to keep a bank open if there is a freeze on its ability to pay depositors and creditors.

The Bank has stated that major UK banks are on course to being fully resolvable by 2022. The Bank has developed its Resolvability Assessment Framework as the roadmap to deliver this commitment. Resolvability is therefore a strategic priority for the Bank in the next two years, and it will have my full support and attention. The RAF sets out the three resolvability outcomes needed as a minimum for a firm to be considered resolvable:

- Have adequate financial resources in the context of resolution
- Be able to continue to do business through resolution and restructuring
- Be able to co-ordinate and communicate effectively within the firm and with the authorities and markets so that resolution and restructuring are orderly

Firms are required to assess their financial, operational and oversight capabilities against these outcomes to ensure they can be resolved in line with the preferred resolution strategy the Bank has set for them. Grouped under each resolvability outcome, the RAF describes the capabilities firms should have to address generic barriers to resolvability (e.g. maintaining continuity of access to financial market infrastructure through resolution and subsequent restructuring). The RAF makes resolvability a responsibility of firms themselves, requiring the eight largest banks in the UK to publish a disclosure on their preparations for resolution so the market can hold them accountable. Simultaneously, the Bank will make a public statement on these firms' resolvability. These disclosures will happen every two years beginning in June 2021. By requiring firms to make their own disclosures about their resolvability, the RAF ensures banks are accountable for their own resolvability.

The Bank sets a preferred resolution strategy annually for all UK banks, building societies and PRA-regulated investment firms to support planning. Bail-in is the preferred resolution strategy for the largest and most complex UK firms. These are the firms that would cause disruption to the economy were they to enter an insolvency and cease operating. Bail-in involves recapitalising the firm by imposing losses on its investors and converting its debt into equity so it can continue to be authorised and provide services to its customers, whilst an orderly restructuring takes place.

The Bank has implemented the FSB's international standards for loss-absorbency in its MREL policy. The Bank's MREL policy sets out that large firms must have loss-absorbing capacity in resolution of at least twice their minimum capital requirements by January 2022, with interim requirements being met in 2019 and 2020. This can be made up of regulatory capital, as well as other eligible debt liabilities. Since 2015, UK banks have made good progress towards meeting their MREL requirement, and have issued approximately £200bn of MREL-eligible debt. The Bank intends to review the MREL policy this year in line with previous public commitments.

Firms are also making progress on removing legal, operational and structural barriers that could prevent the Bank from resolving them in an orderly manner – for example, ensuring firms' financial and operational contracts cannot be terminated by the counterparties upon the firm's entry into resolution and that their operations can continue through a resolution.

In terms of confidence in the resolution regime, I would make a number of points. There is no doubt that substantial progress has been made towards ending too big to fail. There is further to go, but my current assessment is that the objective is achievable by the target of 2022. However, that will not be the end of the story. The nature of large banks will no doubt continue to evolve, and this will require changes to resolution plans and tools no doubt. It is imperative that these plans are kept up to date, and in particular that the long periods in which resolutions do not occur are not the cause of an erosion of the capability. Likewise, it is important to ensure that the Bank can at all times undertake what should be the more straightforward task of resolving a small firm.

Finally, we tend to think in terms of resolutions prompted by the insolvency of firms in a classic balance sheet sense. Resolution must also be ready to deal with the possibility of a firm that fails as a consequence of being crippled by an operational event.

31. The Chancellor's recommendations for the PRC say that the Committee should have regard to the competitiveness of the UK as a domicile for international financial services. In your view, how should the PRC balance this with the PRA's objective to promote the safety and soundness of the firms it regulates? More broadly, do you perceive any pressure for a lighter-touch regulatory regime in the UK and how would you respond to such pressure?

I want to start the answer to this question with some background context which I believe is important. As regulators, both the PRA and the FCA are required to act in the public interest. That interest is defined by the statutes governing the regulators as made by Parliament. As such, regulation is a public good in the sense that the benefits are open to all and can be consumed by all without rivalry for shares of the benefits.

In practice, some members of society may benefit more than others from the actions of regulators, but that should be for a clear public interest reason, not because the regulator chooses to favour one group over another. A very good example of this is the FCA's approach towards vulnerable consumers. Parliament has given the FCA a statutory objective to protect consumers, but our governing legislation also acknowledges that consumers should take responsibility for their decisions. This avoids the moral hazard that otherwise regulation encourages irresponsible behaviour. But, clearly, some consumers are better able to take responsibility than others. A high-level definition of vulnerability would suggest that it is in the public interest to ensure more protection, and place less reliance on consumer responsibility, for those who are vulnerable. That is what the FCA seeks to do, and I have been a strong advocate of this approach as developed in the FCA Mission.

Both the PRA and the FCA have competition objectives, something that was a new feature of the legislation that established the two regulators. These objectives have an important difference: the FCA has a full-blown primary competition objective (it is a competition regulator and uses these powers), while the PRA has a secondary objective which relates in essence to the competition effects of it own actions. This difference makes sense and in my view has worked in practice. Importantly, it has driven a change of thinking and approach in both regulators.

In each Parliament, both regulators receive a letter from the Chancellor setting out the Government's broader public policy priorities, and in recent times these letters have said that each regulator should have regard to the competitiveness of the UK as a domicile for international financial services. It seems to be appropriate that competitiveness in this sense, which is not a pure public good (the benefits are intentionally more available to some members of society than others) should be an objective of Government, and that it should be reflected in the hierarchy of objectives of the regulators in the way that it is today.

Nonetheless, there are calls from some quarters to raise competitiveness to the status of a full objective of the regulators. Before the financial crisis, the Financial Services Authority was required more directly to consider the UK's competitiveness and things did not end well, for anyone, including the FSA. There was what I call a 'rising tide lifts all boats' approach, namely that lighter touch regulation and a competitiveness duty would benefit everyone in society. That clearly did not happen and it would be unwise to forget the lessons of this experience. Moreover, both the PRA and the FCA believe that carrying out their competition and other public interest objectives is the best way to create the conditions for firms to compete on a sustainable basis.

I hope this explains how I would (and do) respond to calls for lighter-touch regulation. At present, I do not detect strong pressure to go in that direction; indeed, my experience at the FCA would suggest the calls are frequently for more rather than less regulation.

I would also draw a distinction here with arguments for differences of approach to regulation post-Brexit and the outcomes we want to see. There is in my view scope to change the former without compromising the latter.

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