

Treasury Committee

Oral evidence: Bank of England inflation reports, HC 596

Tuesday 4 September 2018

Ordered by the House of Commons to be published on 4 September 2018.

[Watch the meeting](#)

Members present: Nicky Morgan (Chair); Rushanara Ali; Mr Simon Clarke; Charlie Elphicke; Stephen Hammond; Stewart Hosie; Mr Alister Jack; Alison McGovern; John Mann; Wes Streeting.

Questions 211-292

Witnesses

[I](#): Dr Mark Carney, Governor, Bank of England; Andy Haldane, Chief Economist and Executive Director, Monetary Analysis and Statistics, Bank of England; and Professor Silvana Tenreyro, Member, Monetary Policy Committee, Bank of England.

Written evidence from witnesses:

[Silvana Tenreyro](#)

Examination of witnesses

Witnesses: Mark Carney, Andy Haldane and Silvana Tenreyro.

Q211 **Chair:** Good afternoon, and thank you very much to our Bank of England attendees for coming to this first Treasury Committee session after the summer recess to discuss the inflation report. Obviously, we are sorry that Mr Saunders is not here, so perhaps you will pass on the Committee's best wishes to him.

Mark Carney: Yes, and on behalf of Mr Saunders, may I thank the Committee for its consideration?

Q212 **Chair:** Lovely. Obviously, this is a quiet session that has attracted no press interest whatsoever, so I did a quick Google search just now, Governor, and the headlines that come up are, "Mark Carney under pressure to extend stay at Bank of England", "Treasury in talks on keeping Mark Carney at Bank of England", "UK Government wants to keep Mark Carney on longer at the Bank of England", "Treasury plays down reports Mark Carney has been asked to stay on", "Treasury in talks to retain Mark Carney beyond 2019", "Carney still expected to leave Bank

of England in 2019", "Who will replace Mark Carney?", "Pro-EU Bank of England boss Mark Carney to give MPs gloomy—"—that is from *The Sun*. "Carney needs to be clear about his future at the Bank of England", and "Treasury in talks to keep Carney longer at Bank of England".

Governor, you will have seen the headlines and you will appreciate that the uncertainty around your tenure is of great interest, but it potentially does cause uncertainty. I would like you to let us know what your intentions are about remaining in your job.

Mark Carney: Well, if nothing else that shows the limits of social media. Let me say at the outset that I fully recognise that during this critical period it is important that everyone does everything they can to help with the transition to exiting the European Union—that is everyone from business people to parliamentarians to public servants, including central bankers. Accordingly, even though I have already agreed to extend my time to support a smooth Brexit, I am willing to do whatever else I can to promote a smooth Brexit and an effective transition at the Bank of England—I emphasise that second point—to make sure that the transition process is done in an effective and orderly manner. The Chancellor and I have discussed this, and I would expect an announcement to be made in due course. It is obviously a joint discussion, and I am not in a position to add to that at this point.

Q213 **Chair:** We can't tempt you to make the announcement now?

Mark Carney: I certainly can't make the announcement on behalf of the Government, but I am signalling a willingness to do whatever I can to support this process. I think we all know that there is a lot on at the moment. The Government have a lot on their plate, parliamentarians have a lot on their plate, and I would expect this issue to be resolved relatively soon, but as I say, it is not for me to resolve. It is a privilege for me to have this role. I work with an exceptional group of people at the Bank of England. It is an important time and we have an important supportive role to make sure that, whatever Brexit the Government negotiate and Parliament decides, it is as much of a success as possible. Providing a measure of continuity during this period should help that.

Q214 **Chair:** So you appreciate that the Government should be fully aware of the need for continuity and the need to end the uncertainty about this particular story?

Mark Carney: I would put it differently. I have made the Government aware of my willingness to do what I can to support the process, and leave the decisions that are for the Government to the Government.

Q215 **Chair:** In terms of succession planning and the discussions you have had with the Chancellor about that, would you agree that getting the best possible and the right successor takes time as well? How long would you estimate that a position like yours would take to fill?

Mark Carney: I guess the first thing, just to be clear, as you will appreciate—any discussions I have with the Chancellor, or any Governor has with the Chancellor, are confidential, and I will not start to break that. This is separate from that. There are many qualified candidates for this

position, and it is the responsibility of the Government to run that process. There are some advantages in that process being run in the context of the full knowledge of both the Government of the day and the applicants—those interested parties—about the position of the exact form of Brexit that the country has decided to take.

Q216 **Chair:** Thank you. I want to move on to another departure today, before we get into the report, which is the news that broke this morning that Dr Paul Pester had resigned as chief executive of TSB. Were you involved in any discussions? Was the Bank of England involved in any discussions? Do you agree that it is for chief executives, senior managers to take responsibility for things such as operational failures on their watch?

Mark Carney: Let me start with the second, which is that, absolutely, it is the responsibility of senior managers to take responsibility for whether there are operational failures, financial failures or conduct failures on their watch. That is absolutely the point of the senior managers' regime, which is now in place and to which we hold senior managers to account. As you will appreciate, the Bank of England, particularly the PRA, has been involved in discussions with the board and the former senior manager of TSB about the series of issues. There is an ongoing investigation, which is a joint PRA/FCA investigation of events surrounding that. I do not want to prejudge the outcome.

I saw your statement earlier today that responsibility has now been taken by the CEO for a series of quite fundamental failings that have disadvantaged a very large number of customers and affected confidence in the institution. We look forward to a new team being put in place. There is a normal regulatory approval process, including for the proposed change in role of the chairman, Mr Meddings, to become executive chairman. We will go through that process in an expedited fashion.

Q217 **Stephen Hammond:** Good afternoon and welcome. Thank you for coming to give evidence. Can I ask, Governor, initially, about a letter you sent to the Chairman on 12 July, which set out the fact that, as soon as the nature of the withdrawal agreement becomes clear and you are able to assess its impact, you will carry out the analysis and publish it at the appropriate time? I am assuming that you take the view at the moment that the nature of the withdrawal agreement is still opaque and, therefore, analysis is at an early stage.

Mark Carney: That is correct, and particularly correct, if I may say, Mr Hammond, for the MPC, which looks at the central scenario, so the most likely outcome for the deal and therefore a path for the economy.

Q218 **Stephen Hammond:** I want to come on to the central forecast in a moment, but obviously you have seen the letter from the Chancellor to the Chairman as well, which re-set out the analysis the Treasury had undertaken earlier in the year about the long-term impact on the economy of a no-deal scenario. The Treasury is making the point that it would be for the Bank of England—or the Bank of England has undertaken analysis on the short-term impact, that is, rather less than the 15-year horizon. Can you confirm whether the Bank is undertaking that analysis and what that analysis is likely to show?

Mark Carney: Again, recognising it is an MPC hearing, for clarity, the MPC does not have an alternate forecast of a no-deal scenario. Our core forecast, the one in this inflation report, and one we think approximates how businesses and households in the country are behaving, and on average—it's not perfect—where financial markets are, is one where it is an average outcome and a relatively smooth transition to an average outcome. You are very familiar with the range of potential outcomes that exist.

It is a different story for the Financial Policy Committee, which is, as you know, responsible for macro-prudential or systemic risks in the economy. That committee's job is to think about not the most likely scenario but the tail scenarios and therefore the downside scenario. The FPC has looked at the potential downside scenario, which is—and we are on record referencing this from our policy work—what is variously described as a no-deal scenario. However, I think it is important to be more specific than that because there is a scenario that moves to a WTO arrangement, with an orderly transition to a WTO arrangement, and there is also a scenario, as you can appreciate, which is no deal, therefore WTO but also no transition to no deal, and there is a series of variants in that. With that preamble, the FPC's job is then to look at, in that unlikely but possible situation, what the main risks are, what the main channels of those risks are, and how they could affect the financial system. That motivates action by the FPC. The FPC is on record as saying that the stress test we ran last year, which was motivated by events internationally, not domestically, was worse than the sum of the various risks in a disorderly, cliff-edge, no-deal Brexit scenario. The FPC then, jointly with the PRA, made sure that, in our judgment, the capitalisation and liquidity position of the banking system was sufficient to withstand this type of scenario—not just the no-deal scenario, but the more severe ACS.

A last point, if I may. The FPC, as you would expect, is in the process of updating that analysis and tail risk analysis, because as we move into this critical period we need to double check and ensure that we think we have covered off an unlikely but downside scenario.

Q219 **Stephen Hammond:** We can expect to see that analysis from the FPC relatively shortly?

Mark Carney: It is not something we would publish as a matter of course. We have taken that analysis as a building block in order both to catalyse a series of steps by the banks and to motivate the work we are doing with the Treasury—Parliament has acted on this as part of the withdrawal Bill, for temporary permissions, for example—and also directly with the European authorities to try to address some of those risks. *[Interruption.]*

Chair: That's the Treasury chipping in there.

Mark Carney: That's the Treasury on the cell phone, yes.

Q220 **Stephen Hammond:** And they have asked me to say—*[Laughter.]* On the BBC Radio 4 "Today" programme on 3 August, you said, Governor, that the possibility of no deal is "uncomfortably high" at this point. In terms of monetary policy implications, you talk about the level of

economic activity and a potential for higher prices for a period of time. You will obviously have seen that Dr Fox spoke last weekend about a 60:40 chance of a no-deal Brexit. What are the signs that would lead the Bank to conclude that no deal is now the central forecast? Do you or the Bank take the view that it is 60:40? I suppose what I am asking is: what does “uncomfortably high” mean?

Mark Carney: It doesn’t mean that. It doesn’t mean what the Secretary of State said. To be clear, what I was speaking of—he may have been speaking of this; obviously he speaks for himself—was a question around a no-deal, no transition period scenario. It is important to continue to make that distinction. I think we all recognise that it is a possibility. The negotiations are getting to a critical stage, there are a still range of views of the potential outcomes and sometimes things don’t evolve as expected. So there is a chance of the downside risk.

From the MPC’s perspective, what we are seeing is still an economy that by and large is operating as if there will be some form of agreement and certainly some form of transition. So if you look at, for example, firms’ contingency planning, less than 20% of firms are really putting in place actual contingency plans for a no-deal scenario. If you look at investment, which is muted but still positive, it is consistent with there still being some form of access. Consumer confidence has gone down, but it is still just below the historical average. All that is consistent.

So from the MPC’s perspective, until something considerably changes and no deal moves to be the central scenario and households, businesses and financial markets start acting that way, one would not expect to see us adjust our forecast and certainly our orientation of policy. That is the first point. But the FPC—a different place with a different remit—has to focus on what can go wrong on the downside scenario, so we are very focused on this, as we have been for the last year and a half.

Q221 **Stephen Hammond:** Dr Haldane and Professor Tenreyro, the Governor said in the inflation report that a no-deal scenario would lead to higher prices for a limited period. If you look at that analysis, it obviously implies that there is probably a one-term shock to the economy in terms of higher prices. Do you think that the MPC would be inclined to look through that, or do you think that the risk from inflation to interest rates would be significantly raised and therefore the response about limited and gradual rises in interest rates would be changed?

Silvana Tenreyro: We will be framed by our remit. The remit is very clear that we have to hit a target of inflation of 2% and, subject to that, support employment and growth. Obviously, in exceptional circumstances we can extend the period over which we achieve that remit, as has happened before with the depreciation of sterling in relation to the referendum vote. I agree that there will be a potential increase in prices because of an increase in tariffs and non-tariff barriers. We will have to assess how much that pass-through feeds into CPI inflation, and the impact on employment and growth, so we will be balancing those in the same way as has been done with the referendum. Ex ante, the direction of policy is not clear: it will depend on the balance between the upward pressure on prices and the effect on employment and activity.

Going back to the previous point about our forecast, the Governor referred to the effect of Brexit on medium-term productivity. The forecast also picks up some of the short-term effects of Brexit through changes in asset prices, which are a conditioning variable in our forecast. That is obviously very sensitive to the evolution of the Brexit negotiation, so part of that is also picked up in the forecast and is feeding the analysis.

Andy Haldane: Not very much to add. Picking up a postscript to Mark's answer, we had a bit of a read on the probability of a no deal by surveys of market participants. For what it is worth, they would put the odds currently at around one in four. In other words, it is certainly not the most likely outcome, but has nudged up ever so slightly over the course of the last few months. It was probably about one in five, three or four months ago. But even then, that higher probability is roughly where it was a year ago. That is a bit of context for the no-deal probability.

On the implications for monetary policy, as Silvana set out very clearly, it is a bit dull when economists say, "It depends"; but it does depend. Just to add one point to what she said, I do not think we can take it as automatic that the shock to the price level would be a one-off. Much will depend on what happens to the supply side of the UK economy in the event of a no deal. If some of that supply side capacity would be chewed up, then even a fall in demand would not necessarily raise the output gap and therefore put downward pressure on inflation. So although the initial impact of a fall in the exchange rate would be this one-off, though still persistent effect on inflation, the impact on the output gap may actually be more persistent and could generate some second-round inflationary pressures.

Q222 **Stephen Hammond:** The implication of your answer is that it would be more difficult for the MPC to look through, as it did in the time after the referendum, because it may not just be a one-term effect.

Andy Haldane: That is quite right.

Q223 **Stephen Hammond:** On a technical point, on 12 August, I think, it was widely publicised in a lot of the Sunday newspapers that an increase in food prices is likely—that is from food producers. They were saying that it would be 12% in a Brexit scenario, but with a currency decline food prices might rise as much as 20%. Could you indicate roughly what percentage of the CPI calculation is food?

Andy Haldane: I could guess, but actually I would prefer to come back to you with a more accurate number. There is the direct effect, but there are also prospective indirect effects, which I think would be the right metric for doing your sort of ready reckoner.

Stephen Hammond: We would be very grateful if you could come back with a more detailed answer on that. That would be very helpful.

Mark Carney: If I may, we will come back with a more detailed answer, but in the scenario that you are discussing, which we all agree is not the most likely, you have a potential exchange rate impact, a direct tariff pass-through impact and potentially some supply disruptions on top of

that, although some of that is in the control of the United Kingdom, such as grandfathering product or drug authorisations or other aspects. However, the potential impact on inflation and pass-through is larger—not least because you have the tariff impact on top of the potential exchange rate—than we saw post referendum.

As Mr Haldane said a moment ago, there is also a supply hit that is not prospective—Dr Tenreyro mentioned the prospective one that gradually builds at present—but it would potentially be immediate in some cases, because of obsolescence in certain supply chains and other aspects. That is part of the “it depends” aspect of that answer, and it is very important.

I cannot bind a future MPC, but I expect that it would want to use the flexibility it has to support real activity, despite upward pressure on inflation, but only within the limits of its tolerance. After all, we have a clear remit to bring inflation back to that 2% target over the policy horizon, which is generally a two to three-year horizon. The past is not necessarily prologue in that scenario.

Q224 Chair: That is very interesting. I have just looked at a very nice picture on a newsletter of Mr Haldane surrounded by schoolchildren. For the non-expert audience—they may have better things to do than watch the Treasury Committee, but let’s assume that they do not—using the food prices example, could you put what you have just said in a way that will be more relevant to those households listening to what you just said? If we get to March next year and there is not an agreed deal on the table between the EU and the UK, and both sides decide to walk away and come back and carrying on discussions in a couple of months’ time, what is that likely to do to households’ cost of living interests?

Andy Haldane: For the schoolchild audience, it would constitute a material rise in the cost of things in the shops—particularly those things imported from overseas—as a result of a weaker pound and higher tariffs on those goods.

Q225 Chair: For how long will those costs be increased?

Andy Haldane: If this follows history—it might not—we know that the pass-through of imported inflationary shocks can persist for several years. In fact, we are living through that at the moment on the back of the referendum, with a leg down in sterling. It will have an effect on the cost of living that persists certainly over our policy horizon of two or three years.

Q226 Chair: In terms of making household budgets balance, we are also not seeing—Professor Tenreyro touched on this in his submission to the Committee—the wage growth that people had expected to see, given the strength of the labour market. People cannot be certain that wages will go up in order to be able to cover the extra food costs, for example. Would anyone like to hazard a guess at why?

Mark Carney: Again, we are talking about an extreme scenario, and one that we are working to avoid—certainly without a transition. There will be a period of adjustment if we move quickly to a WTO-type relationship. It is

likely, given the present pace of wage growth and the inflation effects that my colleagues have described, that the real income squeeze will return for households across the country for a few years. Now, there are ways to mitigate that, but there are limits to what monetary policy can do to mitigate that.

We are now leaving the schoolchildren behind, I'm afraid; I think we lost them at "constitute" maybe. I am talking about one of the challenges and judgments we have to make from a monetary perspective on the extent, at least over the short to medium term. I want to make it absolutely clear that I am not making a long-term judgment about WTO, about the productivity impact of WTO and the potential opportunities that could come in a WTO world. At least in that medium term there is likely to be an adjustment, because the economy needs to reorient itself from a very European focus to, let's put it, the rest-of-world focus and domestic focus, and that takes time. In some industries it will be quicker than others but it will take time.

In that period of time there is relative pressure on productivity and real incomes in the economy. The judgment that we need to make, and the judgment that the MPC made two years ago, was on how we take that adjustment in real incomes. Do we take it in the collective "we"? Do we take it more in fewer people in work or do we take it through a little higher inflation, more people in work and, unfortunately, a squeeze on real income during that period of time?

We can't avoid, at least for that medium-term period, that squeeze on real incomes, and that is what it likely means. Of course, there is the judgment that Parliament ultimately has to make. You are making a longer term judgment about the relative merits of not just a deal and the economics but sovereignty and other considerations, which is why you are there. Only parliamentarians can make that.

The point that my colleagues have been stressing and that I am trying to reinforce is that, from a monetary perspective, we would look, subject to our 2% inflation target remit, to do what we could to support and ease that adjustment, but there are limits to our ability to do so. The scenario we are talking about, which is no deal and no transition, is quite an extreme scenario. It is certainly very easy to see a case where those tolerances would be breached and policy would have to be tighter, not looser.

Q227 Charlie Elphicke: I have a couple of follow-up questions before I come to productivity. Mr Haldane, you were saying that if we leave on World Trade Organisation agreement terms, prices would rise because of tariffs. Are you assuming that we adopt the schedule of tariffs currently used by the European Union?

Andy Haldane: I am not sure I provided an answer with that level of detail.

Q228 Charlie Elphicke: You said a few moments ago that tariffs would cause inflation. Are you assuming that we keep tariffs as they are today?

Mark Carney: Shall I answer, if you are happy with that? Obviously, it is a decision for the Government of the day, as is the thrust of your question, whether to adopt the EU's tariffs, the WTO schedule or no tariffs, as a third example. In other words, that would be replicating a zero-tariff arrangement with the European Union as we have at present. But, of course, as you know, whatever the UK adopts in that scenario is adopted for everybody, not just the European Union.

Q229 **Charlie Elphicke:** I just wanted to clarify that because we have obviously had classic project fear from the food industry about how tariffs will go up and that will mean more expensive food in the shops, but the truth is that we could cut our tariffs on food and enable cheaper food in the shops for consumers and cheaper clothes as well, if we left on WTO agreement terms. Is that not the case: yes or no?

Mark Carney: It depends, and it depends on where the exchange rate goes, because it is the net of the tariff initially.

Q230 **Charlie Elphicke:** Let us just stay with tariffs and leave the exchange rate to one side.

Mark Carney: It is true in terms of the tariff component of it, if that is the choice, but the exchange rate determination is on the broader economic forces. It depends on how much the exchange rate moves, which would be a function of a variety of factors around the nature of the exit and other arrangements. But certainly, if you want to take option prices and financial market skews, in financial markets at present the expectation in a no-deal, no-transition scenario is that there would be another downward movement in sterling for a period of time, which—

Q231 **Charlie Elphicke:** But how much is the downward movement priced into the market predictions on this basis?

Mark Carney: Once I say it, it has more currency—if you will—so I would rather not.

Q232 **Charlie Elphicke:** Nevertheless, it is an important point to make, isn't it? If we leave on WTO agreement terms, we do not have to adopt the EU's tariff schedule. We can adopt one of our own that works for Britain and can help, in particular, the least well-off with the cost of clothes and food by reducing those tariffs on a selective basis. Is that not the case: yes or no?

Andy Haldane: As a general point of principle that is right. We would be a price maker on the tariff component and a price taker on the exchange rate component, and it would be the balance of the two—

Q233 **Charlie Elphicke:** In the referendum that we had previously, the Bank of England predicted in May 2016—I am reading from an article in *The Guardian* from the time—that a vote to leave the European Union would, "Increase unemployment. Hit economic growth. Stoke inflation." It doesn't seem to have happened.

Mark Carney: With all due respect to *The Guardian*, I would rather quote what the Bank of England said in the Inflation Report at the time, which was that we felt it was slow economic growth that would lead to a sharp

depreciation in sterling and an increase in inflation. All of those have come to pass. I will not use up your valuable time by reading into the record again the precise figures behind that, although I am happy to detail them in another letter to the Committee if that is desired.

Silvana Tenreyro: Can I add one thing? Part of the reason that the effect was mitigated was that there was a big stimulus from the Bank of England at the time. The Bank cut rates and increased the QE programme, so that probably smoothed the impact of the shock as well.

Q234 **Charlie Elphicke:** Moving on, Professor Tenreyro, the Bank of England seems to take a view that wages are set to go up on a trend basis, but I think they have fallen since the August MPC meeting. Is there a risk that interest rates are being raised prematurely on the basis of labour market strengthening?

Silvana Tenreyro: Actually, private sector regular pay growth has been above 2.8% since February 2018, including the latest reading in June, and whole economy regular pay growth has been above 2.7%. These are relatively high—relative to the productivity growth that we have seen during this year—so I do not agree. Wages are going up. In the forecast we have a further pick-up that is informed by the shortages in labour markets, which is suggested by a number of indicators, such as employment growth and participation rates. We have heard from the Bank's Agents across all regions that companies are having difficulty recruiting and retaining staff, and this is translating into higher wage increases.

Q235 **Charlie Elphicke:** Much appreciated. Governor, the Chancellor said recently that leaving the EU on WTO agreement terms would wipe 10% off GDP and mean £80 billion in extra borrowing. Do you endorse that analysis?

Mark Carney: I have not seen the detail of the analysis, and would not expect to. As per the earlier exchange with Mr Hammond, we forecast the most likely scenario for the next two to three years. That works for the MPC, and then we look at tail-risk scenarios, which are different from forecasts of the most likely thing, but are "What could go wrong?"-type analysis, which include forecasts of macroeconomic variables but also, very importantly, financial market variables in downside scenarios. But, again, the horizon for that is relatively short term—out two, three, five years. We do not make, and have no intention of making, a longer term forecast of the impact of any Brexit scenario on the economy.

Q236 **Charlie Elphicke:** Mr Haldane, in terms of productivity, you have said in the past that AI will mean lots of jobs will be lost in the British economy. How many jobs do you think that is? You gave a speech in August on this.

Andy Haldane: I did. There have been a whole raft of studies over the last few years that have looked at the potential degree of gross job loss from this transition, from both AI and other elements of new technology. They span a pretty big space—anywhere between 10% and 50% of the global workforce being displaced. Whichever end of that it is, it is a

significant number. Of course, the other side of this equation is how many new jobs, gross, are created, and the span of space of possible outcomes on that is even wider.

What you shouldn't conclude from this is that it is an inevitability that we will find ourselves with the unemployment rate permanently higher than it has been in the past. It will all hinge on the degree of new job creation. What you can say with somewhat greater confidence is that, given the potential scale of AI, big data and all the rest of it to displace current positions and professions, those gross job losses could be at least as large, and possibly even larger, than those we have seen in previous industrial revolutions.

Q237 **Charlie Elphicke:** One can glimpse the future through the prism of the past. Looking at the first, second and third industrial revolutions' employment rates, helpfully set out in a chart in the Governor's excellent speech on 5 July at Northern Powerhouse, it doesn't actually look like any jobs were lost at all over the period of those revolutions, so why is it that we are suddenly talking about mass unemployment when it hasn't happened in the past?

Mark Carney: May I jump in? Thank you for reading that speech.

Charlie Elphicke: A very interesting speech.

Mark Carney: It was a very good event, I must say—The Great Exhibition of the North, which was in exactly the spirit of your question and was consistent with work that both my colleagues have done. In the longer term, the employment share is exactly what it was in the late 18th century. We have seen through each of those industrial revolutions a return to that relative share of employment—the proportion of the population that is employed. One of the points of that speech, Mr Haldane's work, Professor Tenreyro's work on productivity and others, is that getting the institutions right helps ensure that the transition that is engendered by these industrial revolutions goes as rapidly as possible.

The fact that you are asking these questions now at the start of, if you will, the fourth industrial revolution is encouraging, because that is the point at which we think about how it could affect labour market institutions, educational institutions, tax and other sides. For us, an important corner of this is the financial system. How do we—not the MPC per se, but the Bank of England—make sure the financial system is effective for this new economy so that people can transition from the sunset jobs to the sunrise jobs as quickly as possible? We will get back to that point. The question is—and it is actually quite a big opportunity—how quickly do we move people into that? By thinking about it now, we make that transition as effective as possible.

Q238 **Charlie Elphicke:** Thinking about the financial system and jobs in the future, can you say where things are on euro clearing and whether we think we should be robust in saying we will continue to be so and do it after we leave?

Mark Carney: That is an outstanding segue. Look, there are huge economies of scale and scope in the clearing of derivatives based in the UK. It is not just in the interests of the euro markets, the dollar markets, the yen markets, the Canadian dollar markets for that matter, as well as sterling, that that concentration remains and is held to the same standards of resilience. I met with some senior American officials today on exactly this issue. We will continue to work to ensure that London retains its position, because it is in everybody's interests. Yes, it supports employment in the UK, but more importantly the broader effects are through resilient financial markets across the world.

Q239 **Charlie Elphicke:** Professor Tenreyro, you were going to add something. Sorry I cut across you earlier.

Silvana Tenreyro: Counteracting the effect on the demand for labour, which Andy was referring to, there will probably be a shrinkage in the supply of labour as we all age and our populations are ageing. The dependency ratio will increase, which will also counteract the effect a little bit. That is, in part, the rationale for why companies are now investing in robots—it will make up for the lack of young people in the labour market.

Q240 **Stewart Hosie:** Governor, I have a couple of questions on capital liquidity, but I have something I was going to ask you first. Earlier, you said that the Bank would have an important supportive role during the Brexit process. The precise nature of that support will obviously be dependent on the final Brexit deal, the market's reaction to it and the precise fiscal and economic policy which the Government adopt, likely to be laid out in the Budget. Are you concerned about the reports in *The Times* today which suggest the Budget might be brought forward until before the Brexit deal is known so that any fiscal or economic help which might be required cannot possibly have been announced in the absence of a deal? How much more difficult would that make the work of the Bank?

Mark Carney: I will make a general point first which is that monetary policy is always taking fiscal policy as given. In other words, it takes time to prepare Budgets, to pass Budgets and to enact them. Monetary policy is very nimble and could move this afternoon if there were an emergency, for example. We always take it as given, and then optimise policy given where fiscal is. I certainly would not want to prejudge.

Secondly, there will always be another Budget after the one expected this autumn. Thirdly, I would not want to prejudge what would be in that Budget. I have no knowledge of what would be in that Budget at this stage. We will take our responsibilities, given whatever decisions the Government takes on fiscal policy.

Q241 **Stewart Hosie:** Indeed, but given you have said that you take fiscal policy as a given and the forecast which the OBR will lay out which will be published at the Budget are the forecasts, I understand that—

Mark Carney: Yes.

Q242 **Stewart Hosie:** Clearly, the impact of a bad Brexit will require a level of support potentially from the central bank. It would also require fiscal

decisions to be taken, presumably to provide a different sort of support to the economy. I am simply asking, would it not be better if you knew the fiscal path and the actions to be taken after the final deal was known, rather than, in one sense, operating blind because a Budget would have happened just before a decision and the potential consequences had happened.

Mark Carney: Again, the expressed intent of the Government for a long period has been that there would be a Budget this autumn. We will take that into account in setting our policies. We will also take into account the automatic stabilisers that are part of the fiscal arrangements here that would act and are quite substantial in the UK economy. I would expect that, if there were a Brexit outcome that would be substantially different than consistent with the underlying forecast of the existing Budget. As is always the case, we would be in discussions. I would be in discussions with the Chancellor and we would be in discussions with the Treasury about what, if any, potential fiscal adjustments might be made. We would take that into account, providing the appropriate degree of weight to them in setting monetary policy. It is part of the reason—there are obviously formal requirements to consult between the Governor and the Chancellor and we would speak regularly—why a senior Treasury official attends each MPC meeting, which is to provide some sort of real-time perspective on where the fiscal stance is.

Q243 **Stewart Hosie:** That is helpful. In your Mansion House speech, you said the additional capital that the Bank had been provided by the Treasury, “will significantly increase the amount of liquidity the Bank can provide through collateralised, market-wide facilities without needing an indemnity from HM Treasury to more than half a trillion pounds”. Why does the Bank need that additional money?

Mark Carney: The Bank’s responsibilities, as you can appreciate, because you were part of this, have expanded considerably over the course of the last five years. We went from effectively a monetary policy institution to one with a wide range of responsibilities for financial stability. Lender of last resort responsibilities have been considerably widened as well as the resolution authority for failing financial institutions—failing banks particularly—also, oversight and liquidity responsibility for financial market infrastructure, such as the CCPs question earlier. So there has been a considerable broadening of our responsibilities and potential calls on our balance sheet. That is a core point.

Additionally, the Bank of England had neither much capital nor an ability to replenish that capital, unlike most central banks. Many central banks either have large inherited capital, or they have access to seigniorage—the first call on seigniorage—and then the residual is dividend out to the Treasury. In the UK, the seigniorage goes directly to the Treasury.

The issue is the risk-bearing capacity of the Bank of England balance sheet in a world in which it has expanded responsibilities. It has actually been quite low, meaning that each time we did quite normal core central banking, we would often have to go to the Treasury and negotiate, or get an indemnity from the Treasury. This is a much more transparent way of having capital and means that we can support the system across a very

wide range of foreseeable circumstances, including one that we put in place after the referendum which was called the Term Funding Scheme. This is a financing scheme that allows us to lower bank rate down to 25 basis points. In our view, this gives us the potential to bring it all the way towards zero to ensure that banks would pass on those reductions. Back then, we had to ask for an indemnity from the Treasury in order to do that. Now, we can do that on our balance sheet. We did not do this because of short-term considerations, but it is not irrelevant to the shorter term discussion we had earlier about potential stances and monetary policy in a more severe short-term Brexit outcome.

Q244 **Stewart Hosie:** Is that a long shorthand way of saying that the Bank was under-capitalised?

Mark Carney: No question, the Bank was under-capitalised.

Q245 **Stewart Hosie:** Was it therefore limited as to how much liquidity it could provide?

Mark Carney: That was one of the consequences of it. Having an effective working relationship with the Treasury meant that there were ways to get around that, but not in a transparent format. Fortunately, jerry-rigging—if I can use that term—the system worked, but this is a much more transparent and professional way of managing the Bank’s balance sheet.

Q246 **Stewart Hosie:** I am slightly intrigued. I see why people can make a case that removing the requirement to seek an indemnity would enhance a central bank’s independence. But in extremis, asking the Treasury to indemnify the Bank when large chunks of money were being used—potentially—in bail-out situations was a bit of a check and balance on how the Bank used its balance sheet. We are now talking about half a trillion pounds of additional collateralised market-wide facilities: that is more than the total sum of QE. Is there something else going on behind the removal of the need to seek an indemnity?

Mark Carney: No. This is liquidity, not capital. It is providing liquidity, particularly liquidity to ensure that markets function effectively. One of the great strengths of the UK’s financial system is that it is home to global markets. The collective we—particularly the Bank of England—have realised that in extreme stress situations in those global markets, there can be a jump to illiquidity that can lead to more severe stress, as well as adverse feedbacks on the markets themselves, financial institutions and the real economy. These stress situations can happen anywhere on the globe, they are not domestically generated.

We revamped our entire approach to liquidity in a process that culminated in 2013. It is called the new sterling market framework, and it puts in place weekly and monthly auctions that take a wide range of liquidity against them. They can be flexed in size and prices that are market-driven. This is about the longer term but it is helpful to bring it to the shorter term to explain it. It has given us an ability to have—we currently have £400 billion-worth of collateral of financial institutions—banks, broker-dealers, asset managers and financial market infrastructure - pledged at the Bank of England—£400 billion. That would translate to

potentially £250 billion of liquidity, so that gives you a sense of the haircut that we take on the underlying collateral. But that is the order of magnitude, if you recall, of what we proposed—the backstop we had for markets on the morning after the referendum. So the scale of this is quite considerable, and it helped to ensure at that time—it was not really drawn on—that markets did their job. Prices moved quite substantially, but they moved in an orderly fashion. There were not jumps to discontinuity; there was not stress in the market, and things moved forward.

Given the scale of the wholesale markets that we have in the UK and for which the Bank of England shares responsibility, it is important to have a balance sheet that is fit for purpose. Ultimately, what this does is to make sure that there is finer and more consistent access to the underlying cost of mortgages and borrowing of UK households, but also very importantly it helps to insulate the domestic financial system, and therefore real economy, from this very large international so-called wholesale financial system that exists alongside it.

Q247 Stewart Hosie: I understand the point you were making earlier about capital and the additional responsibilities of the central bank—the requirement to hold more capital. I understand the description you have just given about liquidity, and the liquidity auctions you have described—that is a normal function of delivering liquidity to the market; I understand. But in extremis, if large chunks of taxpayers' money, in essence, or debt, from the Treasury to the Bank, are going to be deployed to assist what are private businesses or public businesses potentially, as you say, anywhere in the world, is it not still right that there should be some line of responsibility and an indemnity sought in those specific circumstances?

Mark Carney: There are two things. One is the set of circumstances. The set of circumstances I am describing are: necessary liquidity for the functioning of financial markets, particularly sterling financial markets, so our core markets, and also to ensure effectively that we can lower what is called the effective lower bound on interest rates, which was 50 basis points; we think it is approaching zero now. So we have that ability to do it. There are other circumstances. For example, liquidity provided to a potentially failing institution—different from market liquidity—would be an indemnified activity.

Secondly and very importantly, there is a whole governance arrangement that is put in place alongside this new capital framework, which includes regular risk reporting. The Treasury has access to our regular, quarterly risk reporting. The Court is responsible ultimately to oversee the balance sheet and responsible to the Treasury, this Committee and taxpayers. But also, the Treasury has a direct line of sight to that risk reporting; there is enhanced risk reporting associated with that. So there is an entire governance that comes with it as well. And of course we are responsible; we are the stewards of that capital.

Q248 Rushanara Ali: I have a few follow-ups on Brexit, I'm afraid, and then exchange rate intervention. Mr Haldane, you mentioned earlier that one in four surveyed now thinks that a no-deal scenario is likely; that is up

from one in five. And obviously the Governor's remarks about no deal and some of the risks are prevalent in the press. Do you think that now is the time for greater urgency, in terms of relaying greater urgency to businesses? I think earlier the Governor mentioned 20% of businesses have put in contingency plans. Is it time now to get them to step up and increase the percentage to a much higher level, given the Governor's comments in the press about the risks of a no-deal Brexit? If we do hit the extreme scenario of a no-transition, no-deal Brexit, should we be pursuing a more aggressive stance to make sure that businesses are prepared for a worst-case scenario should it occur?

Andy Haldane: As Mark mentioned earlier, as part of getting a better idea of how companies are preparing themselves and responding to Brexit, we have used our agency network and surveys first to get a better idea of how great companies see that risk as being, and secondly to see what they are doing in response, be that adjustments to their investment plans or to their contingency plans. That paints a pretty mixed picture, I think it is fair to say. Have fewer companies than would be ideal thought through the consequences and put in place contingency plans? I think that would be a reasonable assumption to draw from the numbers that Mark mentioned and that we have put together.

In terms of our responsibility as MPC, it would not be necessary to opine on that issue, but to figure out what the implications of it are from the behaviour of companies, whether that is the investment plans they have in place, or their hiring plans. That we have done. We have a survey designed specifically to assess the scale of risk that companies are facing and to gauge the scale of loss to investment projects that that might give rise to, and that has significantly informed our outlook on the economy.

When it comes to nudging companies that might so far not have taken sufficient account of this issue in their own plans, that feels to me more naturally as something that is for the Government rather than the central Bank. The technical papers that have been published so far on the implications of no deal I took to be in the spirit of providing greater clarity for companies about those risks, with a view to them then acting on them. We are monitoring this, we are figuring out the implications of this for the economy, but when it comes to actually getting companies to change gear, that feels beyond the remit certainly of the MPC.

Q249 **Rushanara Ali:** So in your view—perhaps, Governor, you can come in on this—apart from publishing what I would call their doomsday scenario in the summer, should the Government be insisting that companies that do not have a contingency plan now start to get one? That is in light of your remarks, as well as the prospect of a no-deal scenario becoming more likely. Since Brexit, in the sessions that you have attended there has been much more reassurance, but that is now slipping in terms of the prospects, and in terms of the language that has been used to date, until recently by yourself, as well as about the prospect of a deal. I suppose the question is: is the Titanic about to sink, and will the violins continue to be played, rather than actually taking action while it is possible to avert a disaster?

Mark Carney: First, I think we should recognise that there are a range of companies—a substantial proportion—that are not directly affected by Brexit. They are not part of the European supply chain; they do not sell to Europe and they don't source products from Europe. They are affected by the general macroeconomic environment, as opposed to directly affected by Brexit.

Q250 **Rushanara Ali:** It says that 20% have got plans. What percentage do not?

Mark Carney: There are various surveys of this, but roughly half do not have or plan to have plans.

Q251 **Rushanara Ali:** So half do not have plans?

Mark Carney: It is a substantial proportion. I associate myself with what Mr Haldane said, which is that—and perhaps I will go one step further—ultimately, these are decisions for individual companies and businesses. They have to set their priorities and make the judgments, and they are best placed to make those judgments. From the Bank's perspective, it is paramount that we take the necessary steps. We are prepared to do what is appropriate to meet our remit on the monetary policy side—subject to that 2% target—to provide what support we can for the adjustment. Secondly, and very importantly for those companies and households across the country, we need to do, are doing, have been doing and will get done whatever it takes to make sure that the financial system is in position, prepared and has all the contingency plans, that we have all the contingency plans, and that the one thing the economy can definitely rely on is a functioning financial system.

Q252 **Rushanara Ali:** You are absolutely confident now that you are in place to be able to do that—notwithstanding the uncertainty over whether you will continue, which will hopefully be resolved soon—and that you have everything in place to cope with a no-deal scenario?

Mark Carney: There are two aspects to that. We talked earlier with Mr Hammond about stress tests and FPC tail scenarios. We have conducted and will refresh that exercise in the coming weeks to make sure that the banks have the capital and liquidity and are in position. Mr Hosie's questions about liquidity are also very relevant to that contingency.

There is another set of issues that are cross-cutting and that the FPC is on top of, and has published on: this traffic light system of issues that the UK cannot self-solve. We can take necessary steps, but they are insufficient without similar steps being taken by the European Union. We are working through those issues with the ECB. The Treasury and the Commission are present at those meetings. Progress is being made, but those issues are not, in our judgment, fully solved. Our commitment to this Committee and to the British public is to continue to publish and tell it like it is on those issues. In that traffic light system, there is still a lot of amber or red, and it needs to be green by the time we get to March 2019.

Q253 **Rushanara Ali:** How confident are you that we will get to green by 2019?

Mark Carney: There is work to be done, and it is not entirely in the control of the Bank of England, or of the UK authorities writ large.

Q254 **Rushanara Ali:** If you had to put a percentage to it?

Mark Carney: European authorities are engaged in this and are focused on these issues, but in the end it is about execution, and we have to make sure it is executed. I do not want to prejudge that that will happen. But to take a step back to where I started on the stress side, when we think about stress and a financial scenario that could happen in a no-deal, disorderly Brexit, we assume these things are not solved. They should be solved—that is in everyone's interests—but we have to assume they are not solved and find what needs to be done to help cushion the impact of that. It is in everybody's interests to solve them, but sometimes things do not get done, particularly in a situation where very many complicated issues need to be addressed in a very short period of time.

Q255 **Rushanara Ali:** Your confidence has clearly been shaken, given that you have put out a statement saying that there is a real risk of a no-deal scenario happening and that politicians should work for a deal, which I fully endorse.

Mark Carney: If I may, I am not sure I said exactly those words. I said that the risk of a no-deal Brexit is uncomfortably high. I think the statement from the Secretary of State within days of that was entirely consistent with what I said.

Q256 **Rushanara Ali:** Just on sterling, how vulnerable is it given the current level of uncertainty about the economy and the possibility of a sudden devaluation?

Mark Carney: I would say that some of the level of sterling certainly reflects that possibility. If I could turn it to glass half full, in the event of an agreement and a suitable transition to that agreement, we could see a more positive momentum behind the currency.

Q257 **Rushanara Ali:** And in a glass half empty scenario?

Mark Carney: One would reverse those sentiments.

Q258 **Wes Streeting:** Good afternoon. I want to explore the MPC's view on what is happening in the labour market and how that is impacting on your thinking and decision making. To what extent do you think pricing power in the labour market has been shifting from employees to employers?

Silvana Tenreiro: That is a hard question. It is very hard to measure the bargaining power of workers vis-à-vis employers. There are two measures that we use typically to gauge that. One is the labour share—the share of income that goes to workers. That has been falling in most advanced economies, but interestingly, in the UK, it has been fairly stable. We do not see that fall reflected here. Another measure of monopsony power, or how much power employers have, is the Herfindahl concentration index in labour markets. That increased from '98 to 2007, and since then it has been falling. It is now at a level similar to what it was back in '98. We don't see it reflected in those measures of concentration. Obviously,

unionisation rates have been falling, so that may have had an impact, but it does not get reflected in the labour share and the concentration metrics.

We've seen a phenomenon in many economies that economists call the "job polarisation effect": the share of workers in the middle of the skill distribution has fallen, and there has been a surge in the share of workers at the low and high ends of the distribution, so there are some interesting dynamics going on there. The bargaining power at the more micro level may have changed, but it doesn't get reflected in the aggregate. As for the biggest gains, recently increases in wages have been higher at the lower end of the distribution, probably reflecting the minimum wage and the tightness in those markets.

In all, the picture for the UK is very unclear. We haven't seen big changes. There has been a change in the US and other advanced economies, but in the UK, it is not reflected in the data.

Mark Carney: I'll supplement that, and I am sure that Mr Haldane has something to add. On pricing power of workers, or bargaining, part of what's important is the ability and willingness to switch jobs. As you're well aware, so-called churn in the labour market has been well below historical averages until the last 18 months—certainly in the last 12 months, it has gone back to around historical averages. That's important and goes back to the stance of policy, because one of the things we see in the labour market, and in surveys, and hear from our Agents around the country, is that people moving jobs are, not surprisingly, getting more substantial pay increases than those staying in jobs. But as this phenomenon goes back towards historical averages, we expect some of that to filter down into the existing workforce. That's a short-term point; I know you are asking a longer-term question. By the way, it goes a tiny bit to productivity and diffusion of ideas as well.

I'll make two other quick points, if I may. Professor Tenreyro referenced the labour share. Unusually, in the UK, labour share has held up relatively well. Andy might have something to say about an aspect of that on pensions; I'll let him expand. What hasn't happened in the UK but has happened in a number of other advanced economies is that wage growth has decoupled from productivity growth in recent years, so we have seen this gap open up. It hasn't happened in the UK. Productivity growth hasn't been great, which is why wage growth is in the high 2s, as opposed to the low 4s. That's mildly encouraging, but my last point is a cautionary point, and goes back to Mr Elphicke's discussion on automation. One of the things that tends to happen in economic history when you have an industrial revolution, or a big technological change, is that you get this period of productivity growth, a so-called Engels pause—we know where that came from. As the technology starts to be deployed, initially the benefits go more to capital than they go to labour. We're not seeing that, but that's one of the things in thinking about how you change institutions to make sure that you minimise that period of time. That's a big, big topic.

Q259 **Wes Streeting:** Andy, can I put to you a challenge around some of the assumptions that we might be making? In terms of the relationship between productivity and wage growth, I wonder about the extent to

which one of the reasons that we have a productivity problem in this country is because any productivity gains made through technology are not being passed on through higher wages.

If you think about the supply of cheap labour and the gig economy—for example, what is happening with companies like Uber and Deliveroo, who had a clobbering from the Work and Pensions Committee—putting aside the workers' rights dimension, which is obviously important to Labour MPs like me, there is also an issue about the lack of incentive for companies to improve their productivity and the need to pass on the productivity gains through wage increases. If you have a supply of cheap labour and you haven't got proper collective bargaining rights to ensure that companies are treating their workers fairly, there is no incentive for some companies to improve their productivity, is there? They can just rely on cheap labour to make their business model work.

Andy Haldane: There is a lot in there. Let me try and make a few points.

First, on an aggregate level, on what has been happening to pay, we know it has been a weak 10 years—a lost decade, in fact. On an aggregate level I think we—and everyone else—have been a bit surprised by how weak it has been, but 10 years on, we now have a pretty good idea of why we didn't fully get the weakness in wages. That has been a combination of two things: one has been a weakness in productivity, which has been persistently surprised to the downside on an aggregate level, and the second has been that the natural rate of unemployment has come out somewhat lower than we thought. Our estimates a few years ago would have been 6% or 7%, and now they are just a shade north of 4%. I think had we known that then, and had we known how weak productivity would be, we would have pretty much got the weakness of wages over the last five to 10 years. I say all that because we don't need lots of extra explanations on top, I don't think, to make sense of what has happened over the last 10 years.

Having said all that, do I think there is something importantly different going on in the labour market than has been in the past? I do, for some of the reasons you say and some of the reasons that Mark mentioned. One distinguishing feature this time has been that the pick-up in pay has been almost entirely focused on those moving job. Those sticking in their position have seen their pay flatline, and that remains pretty much the case even now.

People move jobs, in part, to get a rise in pay, of course, but in the past that has eventually shown up in higher pay for everyone, because you have to pay up to stop people crossing the street—to retain labour, as well as to attract labour. That has happened to a somewhat lesser degree during the course of this recovery than in previous recoveries. Why might that be? Mark touched on this, but some of it might be that people feel less secure in their job than in the past. Some of it is probably also linked to some of the longer-term institutional features of the labour market, which include the secular fall in the degree of unionisation, the secular fall in the degree of collective bargaining and the changing in the contractual terms for a larger number of employees. These are issues that were picked up by Matthew Taylor in his report. Could that be having an effect

over and above the aggregate effects I mentioned? Yes, I think it probably does.

In the US, there is some interesting evidence looking at the link between productivity and pay on a sector-by-sector, firm-by-firm basis. It finds the following interesting finding: that the greater the degree of what Silvana called monopsony power—in other words, the power of an employer vis-à-vis the employees—the weaker the link between pay and productivity. If you do have a gain in productivity at a firm level, that is then less likely to show up in higher pay. Why? Because in that situation the bargaining power lies with the company—that's the monopsony bit—rather than with the employee. At present, I think to the extent that those effects exist here in the UK, they probably exist on a sectoral or company basis, rather than on an aggregate basis. That does not mean they are unimportant; I suspect they are very important for some sectors and some industries, and for a great many workers.

Q260 Wes Streeting: Is that something that the Bank is going to do some more work on, or something you are encouraging others to do some work on? It is an interesting question.

Andy Haldane: I know for a fact that Silvana is looking at that.

Silvana Tenreyro: Yes. We see that phenomenon in the UK data, precisely as Andy described, but again, we see that at the micro level. At the macro level, it's not there. That means that there are a number of sectors or firms that have seen an increase in monopsony power, but other sectors where that monopsony power has, if anything, decreased. That is what is different or unusual in the case of the UK economy vis-à-vis others.

Q261 Wes Streeting: Can I pick up a related issue as well, which is about underemployment? I am sure you won't have missed the criticism that Danny Blanchflower and others have made of the MPC underestimating underemployment, or not factoring in underemployment sufficiently. I wonder how you respond to that, and the extent to which it is included in your thinking. He points out that again, the MPC is anticipating wage growth. We have had 17 inflation reports from February 2014 to February 2018, and each of those has overestimated wage growth. I think it is a fair question that he is posing, which is, "Why should we have confidence in what the MPC is saying about wage growth this time?" You might think that's an unfair criticism, but if you could answer it?

Silvana Tenreyro: I am actually looking at his paper; I have it in my hands. In his own regressions, actually, the effect of underemployment on wages is negligible. It's statistically significant, in the words of econometricians, but economically it doesn't add relative to the effects of unemployment, productivity and so on. We definitely take that into account in the Bank, but if I take his own regressions seriously, it's not adding up in the forecasting of wages. He makes some interesting points about wage growth, but I think what he doesn't take into account is that productivity growth is much lower now, so we cannot expect the wage growth rates that we saw before the crisis or in periods of higher productivity growth

Mark Carney: If I may, to supplement that—just because you have read it into the record—for example, a year ago, the Inflation Report projected AWE growth of 2.7%. That is exactly what it is today, and that is a point that my colleague, Ben Broadbent, made at our press conference the other day. It is a complex picture; it always is a complex picture in the labour market. You're asking some fundamental structural questions.

From a monetary perspective, the big picture is that wage growth, 2010 to 2015, was running at 1% or 1.5%. It picked up to 2% in 2016; it picked up to close to 2.5% in 2017; and it has now picked up to 2.7% or 2.8%—measured in various ways, depending on bonus—but if you look at underlying wage growth, there has been this steady build at a time when productivity growth hasn't really picked up. I mean, it bounces around, but it hasn't really picked up.

The consequence of all that is that unit labour costs, which were running post-crisis, 2010 to 2015, at less than 1%—around 0.5%—moved up to 1.5% and now to 2% on the data. We think we're moving to 2% to 2.25%, and that 2% to 2.25% unit labour cost growth is the rate of labour cost growth that is consistent with the 2% inflation target. That's one of the reasons why core inflation is running just around 2%—1.9%, to be precise—at present.

My last point, if I may, is that you've got that bigger picture, but that's also a picture of slow build, and of course, what is the guidance of this MPC? A reiteration, even with the rate increase, of limited and gradual rate increases, which is consistent with an economy that is moving at a different speed than in the past.

Q262 **Wes Streeting:** I am sure that this debate will run and run, but it is helpful to tease out some of these issues on the record.

Finally, just on the rate rise, Danny's criticism of the MPC is partly about wages, but he has also said—I am quoting from his *Guardian* piece from 3 August—"Personal insolvencies are up; there has been a slowing in the commercial property market, which is often suggestive of a slowing economy. The number of homes on the market is up but the number of buyers is not. The housing market is slowing, and raising the cost of a mortgage will slow it further. Brexit represents a major downside risk...as does the possibility of trade wars."

There was a unanimous decision to increase the rate of interest. There is the speculation that this is coming—it has been there for quite a few cycles, actually. I wonder whether the unanimity implies a sort of assuredness about the rate rise or whether you think the caution he is attaching to rate rises, even going so far as to suggest that perhaps a cut in rates might have been an option—I just wonder how you are using real-world data to inform your decision making on rates. Jay Powell was remarkably candid in his Jackson Hole remarks, when he said that US monetary policy is done by "navigating by the stars". Given there is so much uncertainty around, I wonder about the extent to which you sometimes feel you are navigating by the stars.

Mark Carney: I highly recommend Chairman Powell's speech. Andy was there for it so he can comment further, but his point was that you have these stars: where the natural rate of unemployment is in the economy, the so-called U star; where the underlying equilibrium rate may be, the R star, and so on. In the end, that is useful context, but you don't use those things as part of an equation to slavishly follow; it is just a reference point for thinking. I felt that Chairman Powell's point—I have discussed this directly with him—was much more fundamentally about what is happening in the real economy.

I will refer back to my point on what is happening in terms of underlying build in wages and labour costs. I will add one thing to the list that you cited, from Professor Blanchflower, which is that you can look at these things and say yes, there is downside risk to the Brexit outcome, but there is also upside risk to the Brexit outcome. We talked a lot about no deal. There could be a deal. That is the more likely scenario, I still think. Maybe we could say that the possibility of a deal is comfortably high as opposed to uncomfortably high for no deal. In a deal scenario, there is a removal of uncertainty, with transition. In that scenario, we would expect a pick-up in investment, more people to move jobs, and a pick-up in consumer confidence and underlying activity, all of which would be consistent with the path monetary policy has been on. Sometimes, there certainly is a risk of focusing only on what can go wrong and, with the core path, particularly with a transition period, there is upside to this economy.

Q263 **Wes Streeting:** What percentage would you attach to the prospects of an upside risk attached to a good deal—

Mark Carney: Again, you as parliamentarians are better placed to make those judgments, not just in terms of what can be negotiated but in terms of what Parliament will support. You are living this, but the expectation in financial markets, in business—even though business is holding back on a bunch of investments—and in UK households is certainly that there will be some form of agreement and some transition to that agreement. I think everybody recognises that there could be a lot of headlines between now and then and there are risks that it won't happen, but that is the core expectation and, if I can just finish on this point, were the MPC operating in real time with an economy that was behaving in that way— That is one reason, certainly from my perspective, although others can speak, why it was appropriate to take the decision we did in August, which was to nudge up interest rates. If this path continues, we need those limited and gradual rate increases to keep inflation on target and to have the real wage growth that the British people deserve.

Chair: I think we can guarantee that there will be many, many headlines about Brexit over the next few months.

Q264 **Alison McGovern:** I have a few follow-up questions, on both rates and the labour market.

Another quote that no doubt was marginally irritating to folks at the Bank was from Stephen King, HSBC's senior economic adviser. On this issue of the unanimity and what the unanimity indicated, he says that it has "nothing to do with an unlikely meeting of minds on the domestic

economic outlook” and that “unanimity may have an entirely different rationale. It’s called fear”. How far do you think that, with the rate rise, we are trying to defend weakness in the British economy? Dr Carney, you have previously made extensive speeches about imbalances in the UK economy. How far is the business the defence against potential weaknesses?

Mark Carney: I will say two things, one around unanimity. There was not unanimity in the build-up to the decision to raise rates. Mr Haldane felt that we could have done it earlier than we did, as did those who had voted in advance of the August decision. Eventually, others, myself included, felt that we had sufficient evidence that it was time to raise rates. There was not unanimity in that respect.

Secondly, I go back and repeat what I said—I will not repeat all of it; don’t worry, Mr Streeter—in terms of the path the economy has been on, is on, and is still, irrespective of all the headlines, most likely to remain on, which is one of gradually using up slack, and gradually building wages and inflation. I do not recognise Stephen King’s description at all, quite frankly.

There are imbalances in this economy. They have been reduced over time in recent years, but there still are some significant imbalances. There are pockets of high indebtedness. There are issues in the housing market and so on. Of course, the committee that has principal responsibility for addressing those is the FPC, and—I will finish here—the MPC meets regularly with the FPC to discuss some of these imbalances and understand how the FPC is addressing them. That takes that element largely out of the equation.

We are sort of the last line of defence on imbalances and financial stability. If the FPC were to exhaust all its tools or options then monetary policy would become a better instrument, but at least speaking for myself I do not recognise that at all. If there were an element of that—last point—it would show up in the minutes. We have a responsibility to say why we are doing things, and we would explain that argument.

Silvana Tenreiro: Yes, I do not recognise that either. A big consideration was the domestic inflationary pressures building up. I wrote that in my report. The labour market has been tightening. It is extremely tight right now. Employment growth and the participation rate have been invariably high. Unemployment is at a record low. Again, companies are reporting difficulties recruiting and retaining staff. Vacancy rates are consistently high. That has translated into a pick-up in wages and, given the low productivity, that is putting pressure on unit labour cost and unit wage cost, which then feeds into inflation. That was an important consideration.

In terms of the unanimity, I think there was a build-up towards that, but—

Q265 **Alison McGovern:** I will come back to the labour market, and I will have some questions for you, Professor, in a second. Just to finish on the rates issue, Dr Carney you rightly say that there is an upside risk if a deal gets done, and particularly if it is a deal that fulfils the needs of the British economy well. That would be of benefit, clearly, but do you worry

that the Bank potentially lacks tools in the future to deal with some of the downside risks of what could happen?

Mark Carney: Beyond the issues that we have publicly identified that are so-called cross-cutting issues where we in the European Union have to work together and we each have to solve both sides of this—*[Interruption.]* Those are the issues that I worry about. If your question, which I may now be better understanding because you want to come back, is whether we can fully insulate the British economy from the effects of an undesirable outcome, or a no-deal disorderly outcome, the short answer is no. We can help with the adjustment. We can help to some degree to smooth it, but in the end we need to set monetary policy. The star we navigate by is the inflation target that is given to us by Parliament, and we would have to set policy accordingly for that.

Q266 **Alison McGovern:** Okay. To come back to the labour market, because I think this is really crucial, and we have had a fairly good discussion on it, everybody has talked about the institutions, and mentioned getting those institutions right. I think you referred to the secular reduction in union involvement in the labour market; some of us would think it was more of an article of faith, from politicians on the right, but I will gloss over that. Could you just say a bit more about the fact that some of the research that has come out from the US has been really in-depth and fine-grained? Are we likely to be able to have more information, Professor Tenreyro, about the impact of those institutional changes on the British labour market?

Silvana Tenreyro: I am happy to share the results of concentration or market power on the side of employers, and how that translates into the link between productivity and wages. I think there are many studies on the effect of unionisation rates for the UK and for the US. I have not worked on those, but I am happy to share my results.

Andy Haldane: As you mentioned, there is very helpfully a widening and broadening body of research that is looking at very granular data, both on what is happening in the labour market—the jobs market—and on what is happening in the company sector, and most importantly joining the two together to tell joined-up stories about things like company productivity and worker pay. That is making for a more nuanced story about the link between things like pay and productivity.

Having just come back from the Jackson Hole shindig, as Mark mentioned—

Mark Carney: It was a serious conference.

Andy Haldane: A very serious shindig— central bankers' retreat.

I think that data is making for a much more nuanced set of stories. Let me give you an example. Are the margins of companies in the UK and globally going up or down right now? That is a pretty fundamental question to us as the MPC. You know, if this rise in wage costs that was mentioned earlier is coming through, will that ultimately show up in prices and higher inflation, or will it be cushioned in margins?

It turns out that that is a pretty difficult question to answer, because there are such different sectoral patterns in what is happening to margins. So, you take a sector like supermarkets. We think their margins have been compressed very materially over the last few years and that is one reason why food prices have come in low. There are other sectors for which the opposite might be true and for which there are rising degrees of concentration and possibly a rise in prices—see accountancy profession.

So this granular data—this micro-data—that he mentioned is very important for telling these slightly more nuanced stories about the link between pay and productivity, and its implications for us as policy-makers.

Q267 Alison McGovern: I just have two more brief questions about this, but I do think it is a very important issue. Professor, in your submission—I think that Mr Haldane said it already—you mentioned being surprised by the data and perhaps being informed by the bank's Agents about some of the real-world impacts and features of our economy.

Are you concerned about, or are you thinking about, potential bias that might be unwittingly getting into the data from Agents? It wouldn't be a completely wild thought to imagine that the businesses that were prepared and wanted to speak to the Bank of England's Agents might be self-selecting in some way. And where we already have—clearly—an insufficient picture or perhaps a lack of a full picture from the data, and therefore speaking more to real-world actors in the economy, how will the Bank make sure that that is done in a way that is not self-fulfilling?

Andy Haldane: You are right. If ever you are on a regional visit—I am sure you do yours as well—there is a natural gravitational pull towards those companies that are doing well. Those are the entrepreneurs who want to see you and they have got the most to say, which risks giving you a somewhat unreflective or unrepresentative picture of how well a sector or region is doing.

Our own Agents visit more than 8,000 companies a year. They seek, as much as humanly possible, to get a representative sample. They test their contact database against the sample of UK companies to ensure as much as possible that they are mirroring the economy at large. We are already taking some steps to try to get some somewhat different lenses on how different segments of the economy and society are doing. That does mean speaking to unions, it means speaking to charities, it means speaking to the public sector and it means speaking to ordinary citizens. We have made a big effort in that direction over the last few years. We will make a further big effort in future. I am hoping that is reaching down to the parts that historically we have not sampled quite as fully. I think your point is right. We have a good base from our agency network right now. Could it be improved and expanded? Yes, I think it possibly could. That is certainly the plan.

Q268 Alison McGovern: One final question, if I may. We are talking about a disaggregate, whereas historically the Bank, the Treasury and politics have discussed economics in the aggregate. Some of that explains why there can be quite a difference of view depending on where you sit in the economy and what your perspective is on it. Will we see more from the

Bank in future concerning the impact on different groups in the broader economy?

Mark Carney: Maybe I will take a quick shot at that—I recognise the time. I think it is important to pick up what Professor Tenreyro said.

Let me answer it directly. Yes, we are talking more to different groups—Andy just referenced it—whether it is through his town halls, broader outreach or using social media and other mechanisms. We are talking to those broader groups. But in the end, as with the micro research the Professor has been doing on monopsony power and pricing, for us to do our job, we have to look at that at the aggregate. We can go down to those groups, which we increasingly do, to understand better what is going on and potentially see what is coming, but, certainly for the purposes of monetary policy, it has to show up at the aggregate or on a big enough scale in order for it to influence prices, price dynamics, the path of GDP growth and unemployment—the variables that matter for the conduct of policy. The challenge is not to be too captured by the next big thing and extrapolate it to the economy as a whole. The automation discussion is important, but getting the timing of that right and understanding the extent to which it is building through the economy is crucial for the conduct of monetary policy. You are in a different place as parliamentarians, because these types of shifting dynamics, whether they are in labour markets or product markets, can affect a host of policies that start local and build nationally. In conducting our own responsibilities, maybe we can contribute a bit to that understanding, but we cannot be captured by things that do not show up in the aggregate over the relevant horizon.

Q269 **John Mann:** I don't know about the next big thing, but the labour economists haven't quite got to the last big thing, have they? That is, the computer and the concept of flexible working. Your research, Professor Tenreyro, and Blanchflower's, talked about underemployment. If I was in your institution, I would be looking at overemployment: how many hours people are working, where they are working them and whether they are demanding a little bit more money, because rather than doing the 40 hours that they would have been expected to do, they are actually doing 60 hours and they are in essence required to do so, and how endemic that has become at all levels. If the Chancellor was so obliging, would it be worth having a trade union economist actually on the MPC for the first time?

Silvana Tenreyro: That is a question for the Treasury. It is not a question for me.

Q270 **John Mann:** It is. I am asking whether that might assist your deliberations on the MPC.

Mark Carney: Maybe I can supplement that. As you know, the appointments to the MPC is a decision for the Government. It is very valuable and important for us, as members of the MPC, regardless of our background, to engage with trade union economists, the trade union movement and trade union negotiators when we are out on agency visits, and more substantially with the major unions, to understand these

dynamics, and also to engage with processes such as Matthew Taylor's and others that catalogue some of the bigger trends and changes in work.

As you are well aware, I met with a series of unions in Bassetlaw at the start of the summer. That put a lot of meat on the bones on some for the drier statistics of what is happening in terms of apprenticeships, pension dynamics and underlying wage dynamics. That engagement is crucial and core to our job, regardless of where we come from.

Q271 John Mann: Governor, as the meeting has gone on you have become more bullish about the likelihood of a deal. You said over 50%, then seemed to go higher than that, in terms of its possibility. I just wonder whether the Bank is overly optimistic in its thinking. There are 94 days of Parliament sitting for Parliament to get approximately 323 MPs to vote a deal through. Some in here might think that is undesirable, but those who might think it is, should that availability be open, would think that is highly improbable.

Mark Carney: To be clear, and I thought I was clear in what I was saying, for the conduct of policy, the MPC's forecast is based on some form of deal—an average deal, if you will—and a smooth transition to it. That is the way the forecast is constructed. In our judgment, we have that forecast because that is the way businesses, on average, although not every business, and UK households are behaving. Even the financial markets, and particularly the foreign exchange market, and various valuations can be used to an extent to determine this. Andy gave survey evidence of a one in four probability of no deal. By definition, the flip side is that there is a three in four probability of a deal. The way that people are behaving—to put pressure on you as parliamentarians—is in expectation of a deal.

The MPC takes the economy and those expectations as a given, and we then conduct policy accordingly. That is the central scenario. The Bank as a whole is not complacent whatsoever, because we have a whole other side to the Bank—the FPC, the PRC; I'll stop there—that is focused on what could go wrong and on preparing us for that scenario to mitigate any fallout.

Q272 John Mann: But by definition, with businesses saying that there is a 75% likelihood of a deal, no deal would be a major shock to the system.

Mark Carney: Yes.

Q273 John Mann: If there is no deal, and inasmuch as anything is predictable in politics, there would be a very strong likelihood that, come the end of June next year, there would be a new Prime Minister. Let's say it is Boris Johnson. Is your willingness to "do whatever" and stay on equally the case with Boris Johnson or Jacob Rees-Mogg as Prime Minister?

Mark Carney: Of course. These jobs are technocratic. We serve the remits given by Parliament and the Government of the day. It is a reasonable expectation in these roles that, at some point during the term, there will be a change in Chancellor and Prime Minister, in the party in Government and in international circumstances.

Q274 **John Mann:** But the point being that this one, if it were to happen, would be just at the end of June.

Mark Carney: It is not personalised. Our job across these institutions is to fulfil our remits and—to bring it to the specifics of Brexit— whatever form of Brexit the country ends up pursuing, to do whatever we can to make it as much of a success as possible. We would contribute to that success; we obviously cannot deliver it. That is irrespective of the form of Brexit, the composition of the Government and other domestic or international variables.

Q275 **John Mann:** So, Mr Haldane, if there is a change of Government there will be a 3% productivity target set for you. What tools will you use in order to meet that requirement?

Andy Haldane: As the Bank of England?

John Mann: Yes. That's the Labour policy now.

Andy Haldane: It is. The general point here is: is it a good thing to have targets for those things—objectives of Government policy, like inflation? Yes, I think it is a good thing to have. Do those targets need to be numerical? Well, if you can specify them in numerical terms that is also probably a desirable thing to have, for reasons of clarity, but then you come to the question of who it is that is best placed to deliver on those targets.

Q276 **John Mann:** Yes, and this proposal is that it would be you—the Bank of England MPC 3% productivity target, giving you more power than you have ever had in your history. I am just asking what tools you would use, so I can better understand the situation we could be in soon.

Andy Haldane: Let us say productivity. We do know—I think we know—that some of what the Bank does already has an important bearing on productivity and living standards—in particular, our existing statutory mandates around price stability and financial stability. We know from historical experience in this country and elsewhere—

Q277 **John Mann:** Sorry, they are not tools to meet a 3% productivity target. So, any of you: what tools would you expect to employ to meet a 3% productivity target next year?

Andy Haldane: I was getting to your question, I hope. I want to make the important point, first, that our pre-existing tools have some important bearing on productivity and living standards. They are certainly, I would say, necessary conditions for rising productivity and living standards; but they are not sufficient. What my sense would be of what are the long-term determinants of an economy's productive capacity, a company's productive capacity: it is things like a skilled and educated workforce. It is about having access to adequate infrastructure. It is having—

Q278 **John Mann:** But that is not going to deliver next year, if you are given a 3% target for next year. I am asking what tools you would use for next year.

Andy Haldane: The fact is central banks do not build roads or railways, hospitals or schools. They do not train apprentices and they do not, by and large, teach schoolchildren. Longer term those are the things that determine an economy's—

Q279 **John Mann:** Longer term I can see: five, 10 years. That is beyond a parliamentary cycle. So next year, Governor: a 3% productivity target—and you are set that. What tools will you use to reach it?

Mark Carney: Well, you used the term earlier that we would have greater power. I would suggest we would just have greater responsibility, but not additional powers with which to achieve those responsibilities, beyond what Mr Haldane was just saying: providing some of the necessary conditions for productivity, being monetary and financial stability. Look, there are things to which we can contribute regardless of whether we have a target or not, and what is part of our secondary objectives under financial stability—the FPC—which is to support the Government's economic policy. Those relate to the medium-term development of the financial system—particularly elements of FinTech and lending into small and medium-sized enterprises and other aspects, which should contribute on the margin to productivity; but I wouldn't pretend that this would be material over the horizon you are discussing. It is important work, but we wouldn't have the tools, Mr Mann, to support that.

Q280 **John Mann:** But you would be asked to write a letter immediately after the Budget, which could be next summer, therefore—immediately after it—on how to reach it. So you would be asked to comment on the tax and spend decisions of Parliament. So I am asking how you are going to be doing that. Isn't the reality, Professor Tenreyro—you are independent, so you are freer to speak on this, I think—that the basic tool you would have to use would be to cut welfare spending in order to shift money towards speculative attempts at productive spending? That would be the only tool available to you to raise productivity next year up to 3%.

Silvana Tenreyro: It is hard to come up with any example of a country that increased productivity from one year to the other.

Q281 **John Mann:** I am asking about what the tools would be.

Silvana Tenreyro: Again, any concrete tool that would achieve that in one year just doesn't come to mind. When we think about increases in productivity, as Andy and Mark have said, we are thinking about investment in innovation and in skills—there are many things that have to change. This looks a lot more like fiscal policy than monetary policy, and so it would be a very different situation and different powers, and so we would have to rethink the independence of the Bank.

Q282 **John Mann:** I presume you were consulted on this.

Mark Carney: Consulted on?

John Mann: The policy.

Mark Carney: I am not consulted on Labour party policy, if that is the question. You are referring to the Turner report, is that correct?

Q283 **John Mann:** No, I am referring to the speech that has been made. It was very precise that this productivity target will be set for the Bank of England.

Mark Carney: Two points. The first is that we have a wide range of tools to achieve the mandates that we have, which are considerable and broad and are building blocks for sustainable growth, and ultimately what comes with that is productivity. Secondly, to reiterate, we do not have the sort of tools that influence the structural drivers of productivity, which are—in my judgment and speaking for my colleagues as well, given what they have said—in our judgment the only elements that drive sustainable increases in productivity. Yes, if there is a lot of slack in the economy and you boost the economy in the short term, there is a cyclical pick-up in productivity, but that is not a structural pick-up in productivity. It doesn't move it from 1% to 3%, in your example.

Q284 **Mr Clarke:** I am going to talk about interest rate rises in a moment, but I wanted to come back to this issue of food prices after Brexit. It is obviously something that will attract a good deal of popular comment and will concern a lot of people. Mr Haldane, I wonder if you were aware of the Resolution Foundation's UK trade policy observatory report from last year. That looked at what sort of overall impact a series of options would have in terms of food prices. They concluded that, across all food and goods reverted to most favoured nation tariffs with the EU was expected to raise prices by 2.7% on average. They argue that that is because of the raw price of the construction good—say, wheat as part of bread; actually, only about 10% of the cost of a loaf of bread is the wheat because there are obviously associated costs concerning the production and delivery of the bread, which is relatively expensive because it is quite bulky relative to its value and so on—and that therefore looking at the headline tariff changes is less instructive than looking at the overall impact of the price change. Is that reflected in the commentary that we have had today? Is that a nuance that you would accept as an economist is legitimate?

Andy Haldane: I haven't read the Resolution Foundation report that you mentioned in any detail, so I need to go away and look at that, but as put, that sounds reasonable.

Q285 **Mr Clarke:** And as put, does the 2.7% average increase in food costs in a MFN tariff situation with the EU sound reasonable?

Andy Haldane: To Mr Hammond's earlier point, that is one I would prefer to take away and reflect on a bit.

Mr Clarke: It would be interesting if that could be added to that.

Chair: If you are going to write to us on that issue, it would be very helpful to get your perspective on this as well.

Mark Carney: We can easily do that.

Q286 **Mr Clarke:** Thank you.

On the interest rate rises, since you raised the rates last month, to what extent has that increase been passed on to consumers? Dr Carney, do you want to lead on that?

Mark Carney: Sure. I can start on that. There are two sides to the equation, as you are aware—borrowing costs and rates for depositors. Historically, what we have seen in this economy, and it is more or less true for other economies, is that the rates move relatively quickly through borrowing costs, with a bit of a lag to deposit costs—or deposit rates, sorry.

Mr Clarke: It may soon be deposit costs.

Mark Carney: Well, yes, exactly. That is part of the story and I will come to that. What we have seen, obviously, is that with variable rate mortgages—mortgages that are tracked to the Bank Rate—it is instantaneous, and for those that have SVRs, it is relative full pass-through.

On the fixed-rate mortgages side—mortgages with rates that are based more on market rates—what has happened with new rates is that, as markets had anticipated that it was relatively likely that rates were going to increase—it wasn't fully priced in but as it picked up—the reference rate, the OIS rate, had been going up and therefore there had been a steady increase in that element of those mortgage rates. In the context of pretty heightened competition in mortgage markets as a whole, which have dampened that a tiny bit and we can send you the precise numbers, but more or less a complete pass-through, as we would expect, is the best way to say it, given that there is a bit of a lag on the fixed-rate side.

On the mortgage side, you don't see much on consumer credit because, quite frankly, the rates are so high and it is really driven by the riskiness of that lending as opposed to the shorter-term borrowing costs. You don't see much there. For small and medium-sized enterprise and corporate borrowing, it is more or less in line with what I said on the mortgage side, so you see the pass-through there.

On the deposit side, we are seeing thus far—and it is very early days and, for a couple of reasons, if we could have had this hearing a couple of days later I would have preferred it, but one of the reasons is that we would have had the quoted rates report, which comes out on 7 September. That will give us our first look on an aggregate basis—we have supervisory evidence but on an aggregate basis—of where the pass-through is. Our expectation, given history and the low level of overall rates, is that we would see about 40% or so of the rate increase, so 10 basis points as opposed to 25 on deposits. It varies a bit between instant and term. Why is that the case?

Q287 **Mr Clarke:** A lot of consumers will legitimately ask that.

Mark Carney: Exactly. I understand consumers' legitimate concerns and, I should say, the real concern of consumers that they have suffered for a long time with very low interest rates and they are looking for a return on their money. One of the things that has happened over the course of the

last decade has been that, historically, you would have Bank Rate above the rates paid on deposit and, as Bank rate went from 5% down to 0.5% and then a little lower, that relationship flipped. It went from 1.5 percentage point spread to about 30 basis points, where Bank rate was below the deposit rate. The margin that banks and building societies were making was compressed by almost two percentage points, if you add the two up. What has happened since is that some of that spread has been restored, so it has gone up to about 30 basis points. We will find out later this week where that has moved since. The big question—and I will finish here and hand back for your follow-ups—is what does that say about competition in the market. Should I lead on to that?

Q288 **Mr Clarke:** Yes, I think it would be helpful because that would be a legitimate consideration.

Mark Carney: It is a consideration. It is not a consideration for the MPC, obviously, and it is only a secondary consideration for the PRC. It is a primary consideration for the FCA, as you know, and the Competition and Markets Authority. When we look at it, our question is: if you think about that spread—and I am only using one spread as an example, that Bank Rate spread to deposit—it used to be 1.5%; it is now at 30 basis points. Of course, we have to raise rates, more over time, but will it go all the way back to 1.5%? If it does, all things being equal, it means there has been no real shift in competitive dynamics. We think there should have been some improvement in competition in deposit markets, but there are questions about how much. We have authorised 37 new banks in the course of the past five years but they are still relatively small. There is still relatively high concentration in the sector.

Q289 **Mr Clarke:** What share of the market do they represent, roughly?

Mark Carney: The big six: I would say around three quarters. It is substantial. The question is what are other forms of alternative savings products and other forms of competition and what is going to happen in terms of a couple of structural developments that we and the Government have been working on. First, the ability to port your data under GDPR, and secondly, consumer switching costs. Those have been taken out. Also, just using various platforms and even things such as—maybe I should hand back—the reforms we are doing for the so-called RTGS. With that system, which is the core of the payments system, we're allowing new competitors to bypass banks and come directly into it. That is one of the ways to get more competition into the market for funds for individuals. When you have a market that is that concentrated—it is similar in Canada and Australia—you need to make quite substantial moves on the competitive side to see a shift.

Q290 **Mr Clarke:** That's quite interesting. In the Bank's June inflation report, you had a chart that showed the spread around the base of mortgages since 2005. Pre-crisis—pre-'07—the spread was much narrower than it is today, which would suggest that competition pre-crisis was somewhat higher than it is now. I don't know whether that's fair. Is that a fair interpretation?

Mark Carney: I would ascribe that more to a misplaced euphoria in the mortgage market. Remember, these are spreads including spreads for very high loan-to-value mortgages—90% or 95% LTV mortgages—which were very tight and were, quite frankly, mispriced, as subsequent events determined. I think it is more than that it was more competitive. I mean, it was competitive, but it was stupid competition, if I may put it that way.

Mr Clarke: Yes, indeed. Reckless.

Mark Carney: Unfortunately, the taxpayer picked up the tab for a lot of that stupid competition—think Northern Rock, Bradford & Bingley and a series of others. Now what we are seeing—I don't want to be absolutely conclusive, but my personal view is that this is directionally right—is that in the mortgage market we have better competition, so it's not all going to extreme underwriting standards. Underwriting standards are being held up, in part because of FPC action. What we are seeing in the short term—and then I will hand back to you—is that the ring-fencing of retail banks, which is a structural reform, has meant that there are pools of liquidity that are adjusting and competing more in a mortgage market that is relatively soft, because housing turnover is not as high as it has been in the recent past, so there is more competition for fewer mortgages. That is helping to keep a lid on overall borrowing costs.

Q291 **Mr Clarke:** One final question to you, and then I will turn to your colleagues. If there were to be an improvement in the transmission of rate changes through to the consumer, and efforts to stoke competition in the market didn't gain meaningful traction, at what point in the future do you think you, or indeed the PRA, might need to revisit some of those questions? Obviously, this can't continue indefinitely. I appreciate that some of this is just the very long-term resolution of a very serious crisis, but at some point we have to say, "The sector's got to do better than this."

Mark Carney: There are two things. If I may make an MPC point, just while I'm on that. This is a very important issue. From an MPC perspective, though, the actual demand stimulus of higher interest rates to demand in the economy, or the effect on demand in the economy, is relatively modest. There is a much bigger impact from the reduction in demand—the headwind to demand—of the increase in the cost of borrowing. That is just so we are clear.

At what point? I think we have got to a period where we have dealt with the underlying issues of the crisis. Ring-fencing will be implemented as of the end of this year, major Brexit decisions will be taken over the course of the next several months, and a lot of work is being done by the Treasury, and also at the Bank, in terms of thinking about the new elements of the domestic financial system—I'll call it FinTech, but that covers a variety of activities. You bring all those together, and there is a natural point at which, regardless of where interest rates and these spreads are, it is sensible to look at the competitive dynamics in the market. Some of the big structural changes have happened, including Brexit, ring-fencing and the whole post-crisis reform programme, and

we—the collective we—are potentially embarking on some of the structural changes that could come from new technologies.

Q292 **Mr Clarke:** Indeed. I think it is in the sector's interest that it does that, in terms of the confidence it carries among the public. There will always be those—we have heard about 3% productivity targets—who come with a much less market-friendly appetite if we can't get the banking sector into a more amenable situation when it comes to actually delivering for the public.

Professor Tenreyro or Mr Haldane, do you have any points you want to raise about the transmission of interest rate changes through to the consumer, with a particular focus on whether there are any obvious steps we could take to try to improve that?

Andy Haldane: Mark pointed out that there is something of a disconnect now between the way the lending side, the mortgage market and the unsecured borrowing market is now functioning, which appears much more contestable than was the case pre-crisis, in a healthy way. On the deposit side—the liabilities side of banks' balance sheets—there is much less evidence of that being true.

For now, we can tell a story about correction from past extraordinary situations but there will come a point where that question is begged. One reason it might be different, of course, is that on the lending side you are talking about a relatively smaller number of people with relatively large loans, whereas, on the deposit side, it is a large number of people with often relatively small amounts of money, which may mean they are less likely to switch and toggle between rates of certain types.

If that is the case, it is about that—in other words, depositor inertia—as distinct from industry structure. That points to a different sort of set of solutions. Within that, I would mention just one, which is open banking. I think open banking, originally nudged by the CMA, could indeed be transformational and the UK in a way is blazing a trail on that set. It is too early to tell quite how that will affect behaviour among depositors but I am hopeful that could be a significant leap forward for the industry.

Mark Carney: Could I just put a quick addendum on that? Because I think it is absolutely right. The question is: what else structurally needs to be done to make open banking truly flexible and seamless, so that there can be aggregators that potentially sit above the banks and allow the individual, who does not want to spend all their time deposit rate shopping but actually have somebody else do it for them? It meets anti moneylaundering, counter-terrorism financing and other statutory requirements in a seamless way. Part of that identifier is portability of data, so it is about having that structure in place.

The last point I want to add is that what we have done is to think about what that open banking, if it really takes off, potentially means for the health of the banking system, so that we can put the existing banking system in a position where it is not an impediment to this rolling out, if it really does gain traction. That was in what is called the exploratory scenario that the FPC did last year with the PRC.

Chair: Thank you all very much indeed for your time this afternoon. I am sure we will be seeing you all again very soon. For now, thank you.