House of Commons

Treasury Committee

Oral evidence: Bank of England Inflation Reports - 26 06 19, HC 596

Wednesday 26 June 2019

Ordered by the House of Commons to be published on 26 June 2019.

Watch the meeting

Members present: Nicky Morgan (Chair); Rushanara Ali; Mr Steve Baker; Colin Clark; Mr Simon Clarke; Charlie Elphicke; Alison McGovern; Catherine McKinnell; Wes Streeting; Alison Thewliss.

Questions 410-475

Witnesses

I: Dr Mark Carney, Governor, Bank of England, Sir Jon Cunliffe, Deputy Governor for Financial Stability, Bank of England, Professor Silvana Tenreyro, External member of the Monetary Policy Committee, and Michael Saunders, External member of the Monetary Policy Committee.

Examination of Witnesses

Witnesses: Dr Mark Carney, Governor, Bank of England, Sir Jon Cunliffe, Deputy Governor for Financial Stability, Bank of England, Professor Silvana Tenreyro, External member of the Monetary Policy Committee, and Michael Saunders, External member of the Monetary Policy Committee.

Q410 **Chair:** Good morning, and thank you very much for being here to discuss the latest inflation report. I will ask you all to introduce yourselves, and then we will get on to questions. Governor, can we start with you?

Dr Carney: Mark Carney.

Sir Jon Cunliffe: Jon Cunliffe.

Professor Tenreyro: Silvana Tenreyro.

Michael Saunders: Michael Saunders.

Chair: Thank you all for being here. Last week's Monetary Policy Committee minutes noted that market expectations of the Bank base rate have fallen further still. In the inflation report, you emphasise that, if a Brexit deal is struck, it will require more and more frequent interest rate rises than the market currently expects. Yet, the market did not really react accordingly. Why do you think that happened? Do you think the market has got it wrong? Why is it not reacting to what you are saying, Governor?

Dr Carney: The first thing to say is that there is a difference concerning the conditioning assumption in the report. We have to make a choice on what Brexit conditioning assumption we have. As is convention, we follow Government policy, which is to have a transition and some form of a deal. We do not prescribe exactly what the form of that deal is.

There is a difference between what that assumption is in the report, versus what the market has to weigh, which is some possibility of a no-deal outcome. The market is taking a mean—an average—across two different situations, whereas we are taking the mode, the most likely situation. It is most likely because it is Government policy and, to update it to the present, the stated preference of both candidates for the leadership of the Conservative party and, therefore, the next Prime Minister.

There is a natural tension there. The path of interest rates in the market's judgment—the judgment of many participants—is lower because they are ascribing some possibility to no deal. They are also ascribing in the event of no deal—there are various ways one can divine this—that interest rates would be lower than they otherwise would be. When we set out the forecast and talk about the forecast in the minutes, we are saying, "In the event that there is a smooth transition to some form of deal, consistent with achieving our remit, it would require some limited and gradual rate increases."

The way to square that circle in terms of the forecast is to note that, by the end of the third year of the forecast, the economy is in excess demand. So, demand is running at a greater rate than the potential of the economy, and inflation is not just above target but, in our judgment, would be continuing to rise on unchanged policy. You bring those together. There is an understandable difference in terms of the fact that we have to make a call; there is a bigger tension, as I say, between the conditioning assumption that there would be a deal versus a market that is ascribing a higher possibility—probability—to there not being an arrangement.

Q411 **Chair:** The political situation at the moment is that you have a change of Prime Minister imminent, with a potential change of policy and the 31 October deadline approaching. Is that making your job harder? Is it undermining the credibility of the committee, in the sense that the market is paying attention to what is being said by leadership candidates rather than by the committee?

Dr Carney: In the event that there is progress towards a deal, the committee's forecast becomes very relevant. In the event that the policy of the Government were to switch, the forecast of the Bank of England would switch accordingly. We have laid out in a variety of ways, as best we can, our reaction function, to use the technical term. How would we react to a certain set of circumstances? If there is a deal, we think that, all things being equal, there would be a requirement for limited gradual rate increases.

What we have said in the event that there is no deal is that the response would not be automatic. It would depend on the impact on demand and supply and where the exchange rate went. Some us, myself included—not all of us—have said that, on balance, the outcome is not equally weighted. It is more likely that we would provide some stimulus in that event. Certainly, what we have all said is that we would do what we could to support the transition in the event of a no-deal scenario, but there are no guarantees on that.

Q412 **Chair:** Perhaps I can put this to other members of the committee. Sir Jon and Professor Tenreyro, I think you were more of a view that, potentially, interest rates will not have to rise. Mr Saunders, you are more bullish on the prospects relating to interest rates. Sir Jon, perhaps you can talk us through this. Do you agree with the Governor that it is difficult to know where things are heading at the moment, given the political uncertainties?

Sir Jon Cunliffe: First of all, I subscribe to the May forecast in this inflation report—that if the economy evolves in the way we forecast, on the conditioning assumptions that the Governor mentioned, interest rates will have to rise gradually and to a limited extent. The issue is around where the risks are around that forecast, not whether I subscribe to it. It is the committee's forecast for the economy.

As to the gap between that forecast and where the markets are, there is always an issue. Markets do not always follow the views of central banks, and there could be good reasons for that. We take a different interpretation of the data. We have forecasts of the data that will come in. The market curve is made up of the judgments of thousands of market participants, and many will take a different view.

So you very often see markets take a different view to central banks. You see that now in the US, and we have seen it in other countries that actually publish interest rate paths. The market could take a different view because it thinks the reaction function of the Bank—how it will act—is different from the one the Bank has said. In this particular case, though, there is a very big difference: we have conditioned our forecast on the central assumption we have to make—it is one forecast and one policy; we cannot set three or four monetary policies for different states of the world—and the exchange rate and the market curve build in all the possibilities. I think that is where some of the discrepancy comes from.

Q413 **Chair:** Professor Tenreyro, perhaps you can talk us through your judgments. Where is the data pointing in relation to the need for interest rate rises in the foreseeable future?

Professor Tenreyro: I agree with my colleagues. Conditionally on a smooth transition to Brexit—that condition is embedded in our forecasts—I would expect interest rates to rise, again at a limited pace. We are very clear about the conditioning assumptions. If those were to change, of course, we would have to revise the policy implications. But as of now that is where I stand.

Q414 **Chair:** Mr Saunders, I am sure you cannot contain your joy at being back before the Treasury Select Committee twice within two weeks. We had your reappointment hearing last week—I think you were more bullish about the need for rate rises. Perhaps you can explain whether there is a difference between you and other members of the committee.

Michael Saunders: Sure. I broadly agree with the May inflation report forecast, but, conditioned on a smooth Brexit and the global outlook stabilising and then improving a little, I think the UK economy would probably do a little better than the central case in the May inflation report. That would reinforce the likelihood that interest rates here have to rise over time in a limited and gradual fashion.

To come back to your opening question on market pricing, I do not think it is a communications failure on our side. I do not think it is a sign of loss of credibility over the committee's commitment to the inflation target. I think it is the markets taking a view on the probability of a no-deal Brexit and a fairly strong view on the likely direction of policy in that case. I noticed that. We are not compelled to follow it.

Q415 **Chair:** Governor, before I move on, what I think I am hearing is that, in the event of a new Prime Minister being very clear that, actually, a deal looks impossible to achieve with the EU, and no deal becomes, if not the preferred outcome, then the most likely outcome, your next inflation report could look very, very different from the one we saw in May, because the assumptions would be very different.

Dr Carney: If that were the case. I would simply note that, at least at present, that is not the stated preference; it is not the plan A, to use the language of the week, of either of the two candidates. But, of course, it may come to that. If it comes to that and that is the policy, obviously we would adjust our forecasts.

Q416 **Chair:** The committee will have a lot of work to do.

Governor, your appearances before the Select Committee may well be coming to an end in the next few months. Your successor is being recruited. We wondered whether you had any advice you would like to give to your successor, or to those seeking the position, some of whom may not be sitting that far from you, about ways to approach the role.

Dr Carney: The most important thing to say at the outset is that the decision on the successor, just like the decision on any of the members of the policy committees, is for the Government. Obviously, this Committee plays a role in that with pre-appointment hearings. I would not want to say anything or give any indication that tipped the scales in any direction around that.

The only observation I would make, apart from stating the honour and the privilege that this role confers—it is absolutely that—is that I believe, having served in a different role and having observed the core of central banking over the course of the last 12 years, that it is a unique role because of the unique structure of the Bank of England. As you know, it is not just the monetary authority; it is also the macroprudential authority, the microprudential authority and the resolution authority, and it has tremendous responsibilities for financial market infrastructure. That is a great strength of the institution, but it requires a varied set of backgrounds and skills. Fortunately, whoever serves in the role will be able to draw on the varied background and skills of the members of the various policy committees and, most fundamentally, of the colleagues at the Bank.

Q417 **Chair:** Do you have any formal role in the appointment process at all?

Dr Carney: No. None whatsoever.

Q418 **Wes Streeting:** Good morning. Governor, in your opening remarks at the inflation report press conference, you said that "global tensions have eased". Given the subsequent escalation of the trade war between China and the US, does that still hold true?

Dr Carney: It held true for about 48 hours at best. I believe it literally was within that timeframe that there was a tweet of the President that threatened tariffs with Mexico on issues of migration, which was a fairly substantial widening of the potential uses of trade policy. That, coupled with the evident deterioration of the negotiations between the US and China, not only brought the trade tensions back to the fore but intensified them relative to where they had been earlier in the year.

One of the factors behind the committee's May forecast was that, at the time we were making it, there had been substantial progress—apparent substantial progress. I think if one had sat down literally earlier that week with both the Chinese and the American sides, they would have independently said there had been substantial progress. Things took a substantial turn for the worse following that, and those discussions are still ongoing, including with important meetings later this week. On top of that, the broadening of the fronts and the rationale for trade tensions has worsened the outlook, unquestionably, and, although it is early days, has begun to introduce some elements of confidence effects. There are signs of confidence effects on business investment activity much more broadly across the major economies.

I will finish with this: on one level, on simple tariff analysis, the trade measures lead to notable, but not that material, impacts on, certainly, the affected economies, and relatively marginal impacts on the global economy and the UK economy—what really matters to us. But it is the amplification channels, particularly through business confidence, that can be most pernicious, and there is somewhat limited ability of monetary policy to offset that. We have seen sharper moves in monetary policy expectations in markets, but one has to temper expectations about how much those policy changes could actually address greater uncertainty effects on business.

Q419 **Wes Streeting:** I am certainly not going to criticise the MPC for failing to predict the course of action taken by the President of the United States or others. It is the latter half of your answer I was most interested in, and I am keen to hear the views of other members of the MPC. How significantly is the risk of a global slowdown increased as a result, particularly, of the US-China dynamics? To what extent, in terms of the UK's exposure and the role of the MPC, are you concerned? Perhaps Sir John will start, and we can work down the panel.

Sir Jon Cunliffe: As I said before, the questions around the forecasts were questions of the risks around the forecasts, and that, I think, is one of the major risk developments that has happened between May and now. In May, we were not expecting it, but the signs were that a US-China trade deal was going to be reached. Now, we have signs not just of a broadening of the use of the trade lever for what I would call non-trade issues, which is the Mexican example, but a potential escalation in respect of China. Then, of course, there is also the potential US action on EU autos and car parts, which has now been postponed to November this year.

So the possibility is out there of more trade action. I think markets are more sensitive to trade news now than they were a year ago. Equity markets fell pretty sharply on the Chinese announcement, and the Mexico announcement actually affected the US yield curve as well. Markets are reacting more to this. There are the direct impacts of trade, but if it broadened into all Chinese exports to the US, with 25% tariffs, as the US has said, and potentially action on EU cars and auto parts, and if that then accelerated a decline of investment—investment has slowed in all the G7 countries now; it slowed last year in all apart from the US, and it has started to slow in the US, and you can see it in the difference between PMI indicators and soft data for goods, where the expectation is much worse than for services—I'm not sure at what point I would call it a global trade war, but the effects could be quite marked. It's not happened yet, but more of the ingredients for that, to me, look to be in the outlook. That is one of the areas where I think the risk to the May forecast is greater than in May.

Professor Tenreyro: I have not much to add. The direct effect of the these trade tensions and tariff increases on the GDP of either China or US is relatively limited. Therefore, the consequences for the rest of world are limited. Even if they were to extend to the euro area, again, the movements don't point to big effects. Clearly the markets are picking up other risks, and that is what feeding into the global sentiment. It's hard to rationalise for me, given that market sentiment can be very volatile and amplify developments in the real economy, but that is what we are seeing, and that certainly can affect financial conditions globally. We will have to be watchful for that.

Michael Saunders: I agree with most of that. In the May inflation report, we took the tariff changes as they were. Set against that, you had a drop in market expectations for policy rates in some advanced economies. If that was followed through, which is the conditioning assumption that we make, it would give some support to growth further out. Hence we had a forecast that global growth would stabilise and then recover slightly. The downside risks are increases in tariffs escalate, or that the effect of any given change in tariffs on global business confidence is much greater than we expected. Both those risks are there; they have probably both increased since early May.

Q420 **Wes Streeting:** I wanted to address a couple more issues in my remaining time. Governor, threats to central bank independence are being discussed once again. You will have seen some of the exchanges between the US President and your US counterpart Jay Powell. I wondered whether you have discussed this. Is there increased concern among your central bank counterparts about the risks to central bank independence? Particularly in the UK context, is there anything that gives you concern that monetary policy is becoming more politicised, or do you think the Bank of England's independence is sufficiently well protected to weather populist storms?

Dr Carney: There are several questions in there. The first is, is it something we have discussed? The answer is yes, it is something we have discussed. The best approach to this, whether it is in the UK or in other jurisdictions where there is a bigger issue—I would say this has not been a central issue here, to the credit of the system here and parliamentarians and others, and I do not think that monetary policy has been politicised in the UK—is that independence is operational independence. The goals are given, in the case of the UK, by statute and through a remit that gives more precision to the statute by the Chancellor; via the constitution, in the case of Europe; or by statute, again, in the United States. Independence is operational independence, as you know; it is the conduct of monetary policy to achieve a goal that is set in all those cases by the democratically elected representatives.

The primary thing that central bankers have to do is to continue to do their jobs, and not be influenced by pressure in either direction. I have full confidence, in the case that you mentioned, that the Federal Reserve will conduct a policy that is, in their judgment, the best policy to achieve their dual mandate, which is their objective. The timing or degree of any policy changes will be entirely determined by how, in their judgment, they can best achieve that dual mandate. That, of course, is what you would expect and you will get from this MPC and any future MPC.

What is relevant in the case of the MPC, given the relatively unique circumstances we are all in, is that the remit that is given to the MPC is one of flexible inflation targeting, which gives us some flexibility over the horizon in which we would return inflation to target under exceptional circumstances. We would have to justify whether circumstances were exceptional and clearly explain how we were using that flexibility and our limits and tolerance on that. We have done that in the past; if it came to having to do it again, we would clearly explain our rationale, and we would be rightly challenged through many venues, the most important of which is TSC testimony.

Q421 **Wes Streeting:** Thank you. Finally, the Westminster village has been busy googling GATT 24, to understand what it is and how it has made a sudden appearance in the debate about our future relationship with the European Union. You said that GATT 24 could be used only if the UK and the European Union had a withdrawal agreement in place, as, under WTO regulations, leaving without a deal would mean automatically moving to tariffs.

You will see that that position has been challenged by Boris Johnson. He told LBC that you, Governor, are "right in the sense GATT Article 24 paragraph 5b makes it perfectly clear that two countries that are in the process of beginning a free trade agreement may protract their existing arrangements until such time as they've completed the new free trade agreement. And that's a hopeful prospect, that is the way forward. Where Mark is right, is saying that implies mutuality. There has to be an agreement on both sides. But he's wrong in thinking it's not an option. It certainly is an option, people are wrong if they say it's not an option." I am not asking you to wade into the Conservative leadership race—I certainly do not have a horse in the race, between the devil and the deep blue sea—but I am interested in knowing whether you are wrong about this central issue.

Dr Carney: Thank you for the question. I am checking my notes, but I think there is one bit of Mr Johnson's quote that you left out, which is, "I don't know if he said it is not an option". So he spoke in the conditional—if I said it was not an option. That is the first point of clarification.

The second point of clarification is I did not say that there needed to be "the" withdrawal agreement for GATT 24 to apply; I said there needed to be an—

Wes Streeting: An.

Dr Carney: An agreement, yes—which you can appreciate, since we are all schooled, and I think Mr Clark has brought up this issue in the past, from recollection—consistent with what I am about to say, and, I believe, consistent with my reading of what Mr Johnson said yesterday. When I was asked about it, the question was, "Could you unilaterally use GATT 24?" and the answer is, "No, you can't unilaterally use GATT 24. There has to be an agreement." Again, if I may use Mr Johnson's words, there has to be a degree of mutuality in it, so there is some form of agreement between the two parties that you are working towards a free trade or a customs union agreement—something along that spectrum—and it has to be credible enough to the other members of the WTO that that is indeed the case. Then there would be some form of agreement—again, between the parties—that works towards that.

I will leave that to the trade experts and those who have studied all this. There are some limitations—or apparent limitations—to what GATT 24 can apply in terms of tariffs, rules of origin and product standards, but again, I will leave that to others. Just to be clear, this gets into, as many things in this broader topic do, questions of semantics and precise language. If one is asked, "Can you have no deal and GATT 24?", well, an agreement to use GATT 24 is a form of deal, at least in my understanding of the English language—I recognise that I am from Canada, but we use it. These are relatively small words, and I think I understand them. So, as I have said, there needs to be some form of agreement and an intention—a credible intention—to move towards a free trade or customs union agreement.

Q422 **Wes Streeting:** That was really what I wanted to understand. You are absolutely clear that GATT 24 does not apply in a no-deal scenario, when no agreement has been reached. It does not have to be "the" withdrawal agreement, but there needs to be "an" agreement.

Dr Carney: There needs to be an agreement. I believe that was plan B, as described yesterday.

Q423 **Rushanara Ali:** Good morning, Governor. I do not think I have as colourful a question as Wes. I want to go back and pick up on the response to the Chair's questions about the markets' response, the markets' rating the chance of a no-deal situation scenario as more likely than the MPC does. In February, you said that we are assuming that we do not jump from the current membership of the European Union to some new world overnight, and that we certainly do not assume that we jump from the current membership to a WTO world overnight; but certainly, given the noise in the leadership contest, and the coverage, and some of the things that have been said, the public, as well as the market, are reacting in a different way. In that context, do you think the probability of no deal is growing? In February, you said that there was no discussion of an extension or not of article 50. Where should we be looking—what should we be expecting? I know that I am asking you to do a bit of prediction, but what should we be thinking now? Where do we go from here?

Dr Carney: Well, it is a question, I am afraid, that I would really like to just turn back to you as Members of Parliament and representatives of Parliament more broadly. As you know, it is the responsibility of the Government to negotiate, or to navigate, the path forward and then, as appropriate, for Parliament to approve or not—the art of the possible here.

Taking a step back in terms of the economics—or the expectations in markets, to echo what Sir Jon said earlier—market expectations of no deal have gone up in recent months. It is hard to be absolutely precise about that, but there has been a notable increase in those expectations. That has increased to go back to where we were before—the tension, or the wedge, between the path of interest rates that would be consistent in a deal scenario or a transition to some form of deal scenario and where the markets think rates should be in a no-deal scenario.

In terms of our conversations with businesses around the country, our agents' surveys of business around the country, the degree of uncertainty is as high as it was just prior to the March 29th deadline among those businesses. If you squint, marginally it has gone up a bit. We have a survey that is currently in the field and we will come out with the August inflation report, so what I am quoting is kind of six-weeks stale. As best as I can tell—at least, I will give my judgment; I think my colleagues probably share it—this uncertainty effect that has been weighing on business, and particularly business investment, is continuing to operate. So expectations of no deal have gone up in markets. That uncertainty is still there for businesses and that is affecting the short-term economic performance.

Q424 **Rushanara Ali:** Sir Jon, did you want to add anything?

Sir Jon Cunliffe: No—I would make the point that we look to you. It is a political process, it is a parliamentary process, and we are a central bank.

Q425 **Rushanara Ali:** But have you discussed the possibility of a further extension?

Dr Carney: With whom?

Rushanara Ali: In the committee.

Chair: Have you discussed extending the 31 October deadline—there being an extension to that?

Dr Carney: I guess, to be clear, we take it up a level of abstraction—so not around a specific deadline. By saying that there is a transition or by using that conditioning assumption, we just assume a straight-line transition from where we are today to some average of the potential deal—something between a free trade agreement and a slightly deeper partnership, not more than that. So there is no magic date in our forecast.

We are certainly well aware that there are critical dates, 31 October being the most relevant one, and we are aware that the effect of those can be felt foremost in markets, also in businesses and, to some extent—I will finish on this—in households with respect to major purchases. Particularly the housing market is being affected by this, in our judgment.

Sir Jon Cunliffe: Can I just add one point? Maybe it is not for this hearing, but the Financial Policy Committee of the Bank, and the Bank's general preparations, clearly have focused on the October date, because that is the date on which a decision may be taken one way or the other; so in that sense yes, we have discussed that, and readiness and those things, but that is not within the Monetary Policy Committee; that is Financial Policy Committee.

Q426 **Rushanara Ali:** I suppose the main observation would be that it feels quite unreal that, despite everything that is going on, you are still working on the prospect of a smooth transition. There is a lot of concern out there, both in the markets and among the public, about what is going to happen; so although the extension has given a bit of breathing room we are building up to similar anxieties as in the run-up to March. Who is correct? Who is making the right judgment here, in terms of assessing where we might end up?

Dr Carney: I would say the following, which is that the markets, to the best of our knowledge—our analysis—are not saying at this point that no deal is the most likely scenario. The probability—

Q427 **Rushanara Ali:** The candidates are.

Dr Carney: Well, the candidates—again, this is my reading of what they have said—have said that their preference is for a deal, but, and this is not an exact quote, words to the effect of, "We need to be prepared to walk away if there can't be the right deal." It is the combination of that—the market assessment is that it is more likely that there is some sort of path to some sort of deal than not. That could change, and asset prices would change accordingly. We are in a position, from the MPC's perspective, we have a convention, we follow Government policy—it is still Government policy and, as I say, it is still the preference of the two individuals, one of whom will become the next leader and therefore Prime Minister.

From an FPC perspective, though—the other side of the Bank, to reinforce what Sir Jon said—it is as you would expect: we are spending all our time preparing for no deal, because that's what we do. We prepare for what would be the worst-case outcome from a financial stability perspective, and we do that in order to ensure that the financial system is part of the solution, not part of the problem.

We have testified to this effect before, and I will re-emphasise it today: that we still are in a position where we are confident that the core of the financial system is resilient to a no-deal Brexit. So it would be part of the solution, not part of the problem, with the very important caveat that financial stability does not equate to market stability; it ensures that economic impacts of no deal are not amplified—in fact, dampened—but it doesn't remove those core economic impacts.

Q428 **Rushanara Ali:** The final question is for Professor Tenreyro and Mr Saunders. The May and June MPC minutes noted that the outlook depended significantly on the nature and timing of EU withdrawal, and the reference to "timing" was new. What should we read into its inclusion? How does the timing of Brexit affect the outlook for growth and monetary policy?

Professor Tenreyro: Clearly, the timing matters—assuming a withdrawal agreement, the parameters of that agreement and whether there will be a transition period will be important in the forecast. We will need those inputs in order to improve our forecast, clearly—so whether we have a two or three-year transition, and how long it will take to finalise all the terms of the agreement will be important. So that forecast certainly will be revised as we learn more.

Michael Saunders: I would add that what you can see in financial markets is that perceptions of no-deal risk have risen significantly. Those uncertainties are having a significant adverse effect on firms' willingness to invest and to hire, and having some impact also on consumers' willingness to spend, especially on major purchases. The incentive for firms and households to defer spending—to put things off—is really high when you have a deadline which is not that far off, and a series of rolling deadlines would probably imply a heightened uncertainty and have a greater adverse effect on growth. That is not a reason to do the thing that businesses fear—to crystallise the risk that firms are worried about—but the outlook for the economy would be different if you knew now that there was going to be a smooth Brexit, compared to one where you have a rolling series of deadlines and at each point there is a risk of a no-deal Brexit.

Q429 **Charlie Elphicke:** Good morning, Governor and fellow members. Just to pick up on the points that my colleague Mr Streeting was making about GATT 24—it is true, that would require agreement with the European Union, but let us look at that. We know that in the event of no deal the transit convention will be extended, so there will be no delays at the channel ports. That is well understood. But were tariffs to be imposed, that would inevitably mean a level of trade friction. Has any work been done to look at how much the total tariffs would be on imports from the European Union—payable to the UK—and on the tariffs going in the other direction, and how much the liability and total tariff costs would be in each direction?

Dr Carney: In terms of a formal MPC forecast, no—obviously. I refer to the discussion we have just had in terms of conditioning assumption.

In terms of looking at the potential impacts of trade frictions on the economy, of which there are tariffs, but then almost the more substantial ones become those around product standards, rules of origin and then shorter-term frictions with which you are very familiar—I will call them logistical issues or teething issues for the new system—work has been done and reported to this Committee, and I will remind Members of the scenarios that we use. The Financial Policy Committee said, "Let's look at the worst case of those various frictions and make sure that the financial system can handle the indirect effects of those." Now, since we reported that, the Government have come out with their intended tariff schedule on inbound—imports—and we have information about a more favourable inbound tariff schedule than the EU common schedule, which reduces some of those trade frictions, so one can make calculations in terms of the impact on trade.

There are also the TSP procedures that have been announced by the Government, so simplified procedures for 15 months, and the waiver of security checks for six months. The Government have indicated that they would follow those procedures, which would also have the impact of reducing some of those frictions. As you can appreciate, given the round-tripping of eight out of 10 trucks, that is very important, but what also matters is what is done on the other side, where it is our understanding that there has been progress, but where we have less visibility.

To pull it together, what we care about is the economic impact. We haven't tracked the relative pound value of the various tariff schedules and the impact; we care about the overall economic impact, which has to be brought up. Because we are in a situation where, as per the last conversation, the stated policy of the Government—still Government—and the preference of the two candidates, is for a deal, from an MPC perspective we are still conditioned on that. Then, from an FPC perspective, the best thing we can do is to make sure that we are ready for the worst case—not start to ease off in terms of bank liquidity, bank capital or bank preparedness by saying, "Oh, maybe things won't be quite as bad," because if we know we are ready for the worst case, any upside we get in terms of fewer frictions, greater trade, is to the pure benefit of the economy.

Q430 **Charlie Elphicke:** That is really important. We know we acceded to the transit convention in January this year, so we know that there is no need for any delays or problems at ports, or indeed in the island of Ireland if alternative arrangements are sensibly embraced. I have researched tariffs, and the impact of tariffs if we were to retain the common schedule. Imports from the European Union would be about £12 billion for the Exchequer, but that would obviously raise prices. For exports, the other way round, it would be £5 billion for the Exchequers of the European Union, because it is the case, is it not, that the European Union sells us twice as much in goods as we sell the other way round. Have you looked into what the demand implications of that might be in the UK economy? In the event of friction, that demand would need to be fulfilled from increased domestic production or elsewhere, because of the competitive dynamic of the pricing readjustment.

Dr Carney: Let me unpack a bit of what you said at the end. I will let your first couple of sentences hang out there on their own, and I won't be drawn into commenting on them. There would be import substitution, in the event of tariffs or other trade frictions, for those goods that we could produce domestically. Of course, the intent of the Government's tariff schedule is to have as close to zero, if not zero tariffs for those goods that we can't produce domestically, or rather that we don't have a comparative advantage to produce domestically—that is a better way of putting it. That is why the tariff schedule is more favourable than the general tariff schedule of the European Union. That is my supposition.

There would be import substitution, and the first question from a forecasting perspective is: how long does that reallocation of capital and labour to those areas take? If we were in the case of a no-deal scenario, or whatever—an agreement that meant a material change to the flow of goods across the channel in both directions—we would look at all these effects in aggregate. In order to conduct monetary policy, we need to see the aggregate impact on demand, on supply and therefore on inflation pressures, and to set policy accordingly.

Q431 **Charlie Elphicke:** Just to touch on the article 50 extension issue, is there not a real issue and a real problem that if a Prime Minister marches the country up the hill like the grand old Duke of York and then marches it back down again, that creates a level of uncertainty in the economy and businesses constantly do not know whether they have to restock or de-stock? How economically damaging is that kind of policy approach?

Dr Carney: Three quick comments. First, I will just take the opportunity to note that obviously there was a large stock-building impact in the first quarter. Just under half the companies we speak to expect to maintain or have the ability to maintain those stocks, so they would just hold those stocks in place. Unfortunately, some of them, if they have perishable or other goods, would have to draw them down and then build back up. So, there was a big stock-building impact in the first quarter. We do not expect a repetition in the second quarter, which is one of the reasons for the expected volatility in the data.

On your bigger question, I am going to associate myself with two things that Mr Saunders said. The first is that rolling short-term uncertainty is particularly damaging for business confidence and activity, because it makes all the sense in the world to just wait a few months to find out what the answer is if you believe you are going to find out the answer, whereas if it is generic uncertainty off in the distance, businesspeople tend to get on with it. That would be the attitude. The second thing that Mr Saunders said, which I also agree with, is that crystallising the thing that businesses are most worried about, on balance—which would be a loss of trading relationships, with the absence of transition—is the worst way to resolve that uncertainty.

Q432 **Charlie Elphicke:** Are we getting to the point where this uncertainty is damaging and we need to conclude matters one way or the other at the end of October, and bring this nightmare to an end at Halloween, by whichever means may be necessary?

Dr Carney: There is a reason why the 40-plus trade deals that have been struck over the course of the last quarter century between advanced economies have always had some form of transition from the status quo to the new arrangement. Those arrangements in general have been arrangements that have increased immigration. This would be the reverse, so I would underscore that, as we have always said, whatever arrangement we are coming to, it is highly desirable to give businesses enough time to adjust to that new reality. That would be the best outcome for the economy.

Professor Tenreyro: But of course the outcome matters.

Chair: Yes. It is not just the fact of having an outcome; it is actually what the outcome is.

Charlie Elphicke: May I ask Professor Tenreyro for her observations on this in general?

Chair: No; we are going to move on.

Q433 **Colin Clark:** Good morning, Governor. Were you surprised that data published recently by the ONS showed that business investment in the UK rose by 0.5% in the first quarter of the year, whereas it declined in all quarters of 2018? Could this be a turning point in UK business investment?

Dr Carney: Well, there's always a possibility, Mr Clark, but in the short term I don't think so, and I think the committee shares that view. There are a couple of things that happened in the first quarter. First, let me say that investment data is normally quite volatile and is almost always revised, so we always have to take the first data points with a grain of salt.

Secondly, in the first quarter there was a new accounting standard: IFRS 16. I know that Mr Baker has followed that closely and is pleased to see that operating leases are now properly treated as investment. If you strike a longer-term operating lease, particularly for things such as ICT equipment, you are investing as a business, and that should show up in the national accounts. Whenever something like that comes into force and then is applied, it is very difficult for the ONS to back out the adjustment or the effect of the new approach. So it is certainly possible, if not probable, that some of that measured strength is a one-off because of the introduction of this.

The third thing that at least I personally I would give a little pause to is the initial judgments in the ONS accounts around stock building and ascribing them to stocks. The stock building information in the official accounts is not that timely; we get it from surveys and others, which is probably better. We have every reason to believe that there was a substantial stock-build both here and in Europe in the first quarter. Some of that may be showing up in those investment numbers.

The last point is that the survey data on business investment has reverted to type in the second quarter. In other words, it continues to be quite lacklustre, which would be consistent with the conversation we have been having this morning.

Q434 **Colin Clark:** On that point, the Bank's agents' scores for investment intentions in both the manufacturing and service sectors have fallen to their lowest level for nearly nine years. Does the growth in business investment in the first quarter of 2019 indicate that your agents' scores for investment intentions were overly pessimistic? Was pessimism baked in?

Dr Carney: Not at all. I would put much more weight on the agents' scores. There is not a business investment boom going on in the country right now, and I think we all know why that is the case. It goes to the right way to resolve the issue. There are much bigger factors determining the ultimate arrangements that would be had with Europe, but that uncertainty is weighing on business investments. That is absolutely clear. We are picking it up from the agents, we pick it up from direct conversations, and it will show up in the data. I am pretty confident that it will show up in the second quarter.

Michael Saunders: Can I add a couple of points? The point about IFRS 16 is quite important. The ONS made some adjustment for it, but the adjustment was uncertain. It noted that the impact of this change would be greatest on the category of ICT equipment and other machinery. If you look in detail at the numbers, investment in that category rose by 6.5% in the first quarter, which I think is the biggest rise for five or six years. So I think you have to have a suspicion that that accounting change just affected the overall investment numbers.

Also, in terms of firms' investment intentions, we do not just use the agents, valuable though their feedback is; there is a whole stack of surveys on investment intentions from the CBI, the British Chambers of Commerce and Deloitte, and they all give a fairly gloomy message.

Sir Jon Cunliffe: I repeat the point I made about the international environment. Up to about the middle of last year, you had support for investment from the international environment. You had support from trade, because trade is rich in investment goods, and actually you are now seeing throughout the G7 slowdown not just in confidence but in investment intentions as measured by these sorts of surveys. So there may be an idiosyncratic UK thing happening after four quarters of investment decline in 2018. But, I think like other members of the committee, I put my money much more on something around the change in the accounting standard and stock building. If you think about Q1 for the UK, it was one of the most extraordinary quarters in terms of uncertainty and political news that one has seen.

Q435 **Colin Clark:** Would the change in annual investment allowance have stimulated investment? When I visit businesses, they tell me that they are making investment because they have to. When we last saw the

Chancellor, he said that the weakness in business investment is due to investment postponed, not forgone. Is there any way of proving that? Do the agents indicate that investment is being put off, as opposed to being lost?

Sir Jon Cunliffe: There is always some investment that needs to take place—people need to do that—but if it is investment that has even a relatively short payback period and you can afford to delay it, then for the rolling uncertainty that Mr Saunders mentioned my judgment is that people would put that off. Then there is some indication that for the larger ticket investments—things that have a longer period to pay off—people have just put those off.

Q436 **Colin Clark:** Is there any way of estimating investment postponed? Is there a calculation? We know that the Bank's Decision Maker Panel survey suggested that nominal investment could be between 6% and 14% lower, were it not for Brexit uncertainty. Is there a way of calculating that?

Dr Carney: That is one of the calculations; I was going to use that as an example to your question. It is not a perfect example, but basically we survey, on a rolling basis, 3,000, but it is of a bigger set of companies that employ more than 1.5 million people across the country.

One of the questions is, "What are your issues? What do you see as the risk? What are your top issues of uncertainty?" For those who have Brexit as one of their top three issues of uncertainty, you can compare their investment, normalising for other things and controlling for other factors, relative to those who say, "It doesn't affect me; I have a business that is either entirely domestic or I export to the US and have no European supply chain." It is through that that you can get that range of calculations.

The only imperfection in what I have just said around that is that you are then making a leap that all of the investment that is postponed, or not taken because of Brexit uncertainty, is postponable investment—in other words, it is not an opportunity missed. But it does gives a sense of the orders or magnitude.

Michael Saunders: You can also compare the UK with other major advanced big economies. If you compare the UK with the rest of the G7, from 2007 to 2015 we broadly cracked the average of the other major advanced economies. Since Q2 of 2016, business investment in the UK is up 1%. Across the other G7 countries, on average it is up 12%. In the States it is 16%. If you look at the other background drivers of business investment in the UK—great return on capital, cost of capital, capacity use—they are all pretty favourable. I suspect that we could, under different circumstances, have had the same kind of strong investment growth that other G7 countries have had.

Q437 **Colin Clark:** I suppose this comes back to the crunch that the Chancellor was suggesting. Has investment simply been postponed? I know the Governor has just answered the question. Or have we actually lost the opportunity of that investment? There is a worry. Has UK productivity been affected by that drop in investment?

Professor Tenreyro: The true answer is that we will need to wait and see. Right now in our forecast we are expecting a bounce-back in investment. We are expecting that most of it is postponed, but obviously we will find out as we reach that exit from the European Union, and we will see what happens with investment. As of now, we can have estimates and educated guesses but time will tell.

Q438 **Alison Thewliss:** Household spending has proven resilient since the EU referendum, even as sterling fell, resulting in a fall in the savings rate. The inflation report suggests that the household savings rate has tended to fall alongside declines in unemployment, and that could explain the low level of savings. Does that mean we ought to be relaxed about the sustainability of those savings, as they are underpinned by low unemployment?

Dr Carney: To some extent, yes—"relaxed" is a strong word for a central banker. In terms of the dynamics of household spending, there has been a strong increase in employment, and real income growth, at least in the past couple of years, has returned after a long hiatus. Households are spending out of that real income growth; this is not debt-fuelled consumption in any way, shape or form. In that regard, the pattern of household consumption is sustainable.

One can only get a few sentences away from the issue, but the issue on the horizon is whether the pattern of employment growth and real wage growth is itself sustainable. Of course, that will be influenced by the Brexit negotiations, the end state and the transition to that end state. It is possible that there will need to be an adjustment to household spending. Certainly, the views of households as a whole—you see this consistently across various surveys—is that individual households or individuals view their economic prospects as good, and they have a degree of confidence about their own economic prospects, but they are concerned about the overall economic outlook. At some point, those two will be reconciled.

Q439 **Alison Thewliss:** What do you feel it would take for those two things to be reconciled?

Dr Carney: Resolution of the Brexit negotiations, and probably the crystallisation of the consequences of whatever arrangements come into place.

Sir Jon Cunliffe: May I add one point? Households have a tendency to use their savings to smooth consumption. There is quite a strong history of households using savings to smooth consumption patterns. Of course, there was a shock to real household income growth with the depreciation of sterling after the referendum and then the inflation that came after. So we had a period up to 2017 when household real income growth was being eaten away by the increase in inflation. Some of that dip into savings that you see households doing is because it is intuitive that when people are more secure about their future employment, they feel less need for precautionary savings.

Going forward, as Mr Saunders said, we have seen strong real income growth relative to what we have seen in recent years, from more employment and from pay getting up to 3.25% or 3.5% levels. In our forecast, that is flattening off a bit. There will still be some real income growth, but perhaps not as strong as the second half of last year.

One of the issues is whether households will now seek to rebuild some of the savings they used to smooth consumption. If you look at the chart that you referred to, it goes up and down quite sharply—we saw quite a big drop in that period. Or will they actually carry on consuming? Those things will be greatly affected by Brexit, but you might see some rebuilding of some of that saving.

Q440 **Alison Thewliss:** A good number of people in the UK cannot afford to have savings and have not got money put by. If those who can afford to are not really saving very much at all just now, does that store up problems for the future?

Dr Carney: It can, and that is something we watch particularly closely, from a Financial Policy Committee perspective, to see whether there are growing cohorts of people who are living hand to mouth or—this is of even greater concern—who are relying on debt, particularly if it is to fund current consumption.

Generally, across the economy what has been happening is that households have been deleveraging, so the relative level of their debt burden has been going down relative to incomes, and their ability to service those debts is actually near a record low. That is partly because interest rates are low, but even in the scenario where we see a smooth transition to some sort of Brexit deal, we are saying that we think only limited and gradual rate increases would be required to keep the economy effectively where it is today.

We should stop and just recognise that as we sit here today—I would like to get this on the record—inflation is on target, unemployment is slightly below our judgment of the equilibrium on the employment rate, and the economy is near an equilibrium at this stage.

Q441 **Alison Thewliss:** I would like to ask Professor Tenreyro and Mr Saunders about retail sales, which grew in each month of the first quarter. Households' expectations about their personal financial situations have remained fairly resilient. In your view, have households responded to uncertainty over the date of Brexit, and do you expect uncertainty over Brexit to restrain consumer spending as we approach the next deadline?

Professor Tenreyro: Ignoring the data that just came out today, so far consumer spending has held up quite strongly, and that reflects the strength in the labour market: they have seen wage growth and employment is at a high level. From their personal perspective, they are in a stronger position now, and that has fed into consumption. Compared with companies, they seem less affected by Brexit uncertainties. However, when we look at big-ticket items such as housing, that is where you see the biggest impact, and we have seen the housing market weakened. So far, they have been in a strong position because of the tightness in the labour market.

Michael Saunders: I agree with that. Brexit uncertainties are clearly dampening housing activity. In terms of retail sales, there is a structural shift going on, in that large retailers are underperforming compared with smaller retailers. That has been the story for several years. When you look at the surveys of retail sales, such as those from the CBI and the BRC, they tend to cover the large firms that are losing market share; in the retail sales figures, the smaller retailers are doing quite well, but they are not generally in those surveys. What we have seen is that overall consumer spending and overall retail sales have been a bit stronger than the surveys of the large retailers.

Q442 **Alison Thewliss:** To pick up on the point about housing, Professor Tenreyro, do you feel that the house price inflation slowing presents risks to the wider economic outlook, or should it be welcomed as a correction in terms of housing affordability?

Professor Tenreyro: Clearly it is not a risk to overall consumption, because that has been holding up quite well. The collateral channel in the UK is relatively weak, so I am not concerned on that margin. The adjustment in prices might reflect both an adjustment toward affordability and a change in relative prices due to Brexit. We have seen a big adjustment in the relative price of non-tradeable goods vis-à-vis tradeables. Most of that adjustment happened through the depreciation of sterling that made tradeable goods relatively more expensive, or non-tradeables less expensive. I see that this might be part of a more protracted adjustment in the price of non-tradeables, which we see mostly on housing and rents. It is more of the latter, an adjustment—not just on affordability levels, but also in the fact that we now have lower prospects of productivity growth in the tradeables sector.

Q443 **Alison Thewliss:** That is interesting. Do you think that last year's increase in the Bank rate has had any noticeable effect on the housing market?

Professor Tenreyro: We are obviously tracking that. We have a clear remit on the inflation target and, subject to that, growth and employment. It might be that interest rates affect the housing market, but not in a concerning way for us in terms of macroeconomic stability.

Michael Saunders: Can I just add something? The impact of those rate rises—there have been two so far—on mortgage rates has been pretty small. If you look at most mortgage rates, they are around record lows and have risen by less than the Bank rate since the start of 2017. I don't think that has had a major adverse impact.

Professor Tenreyro: This is not because of the Bank rate. Just to clarify, my interpretation is that it is not that the Bank rate has not had an effect on mortgage rates; what we have seen since the crisis is a strong trend down in mortgage rates, due to more competition. Now, when we measure the effect of monetary policy on mortgage rates, we need to take into account those pre-intervention trends. That is to say, we cannot just look at the change in mortgage rates following a Bank rate, but rather at where mortgage rates are, relative to where they would have been had the trend continued. Based on that metric, which is the way we typically measure policy interventions in general in economics, the pass-through has been complete. In that sense, it did affect mortgage rates and stopped the trend down; if anything, we are seeing a slight trend up right now.

Dr Carney: I reinforce that point. While it is true that mortgage rates have gone down, my judgment, consistent with Professor Tenreyro's, is that competition in the mortgage market has continued to increase. One of the factors—one benefit of having the structure that we have is that Sir Jon and I have the benefit of sitting on the PRC as well as the MPC—is the ring-fencing of retail banking. That is a reform that came into place, and it is very important—it helps to end "too big to fail"—but it has had the consequence of reinforcing the degree of competition in the mortgage market. To translate all that, we think that that competition effect is helping to keep rates down, or to lower rates, and they would be lower if we had not had raised interest rates. We did not raise interest rates because of the effect, but there are two effects going on there. Teasing them out is an important distinction.

Q444 **Alison McGovern:** I want to ask some questions about wages. In relation to my first question, there may be a simple answer—that we do not know because of Brexit. If that is the answer, I invite you to give it, and I can then ask the rest of my questions. My first question is about regular pay growth, which has been about 3.5% for a little while now, even though unemployment has fallen. Do we think that that is pay growth topping out, or do we not know because of Brexit?

Dr Carney: We will not hide behind the Brexit excuse. We should have a discussion, as you suggest, Ms McGovern, about what is going on in the labour market. I think it is helpful to take a quick step back and recognise that pay growth has built up to 3.5%. If we go back three or four years, it would have been around 1.5%. It has steadily built over time, broadly consistent with the MPC's expectations; certainly, pay growth around 3.5% has been our expectation.

In the May forecast, we also signalled—I think Sir Jon alluded to it a few minutes ago—that we expect some coming-off of measured pay growth in the third and fourth quarters of this year. Part of that is statistical-level effect, in that we had quite strong readings earlier, and those drop out of the calculation. I will hand back to you, but first I will make a couple of quick points.

One, we have seen tightness in the labour market feeding through to wage growth. We also look more closely at regular pay growth, as you rightly alluded to; the bonus component is fairly volatile, so we tend to look through that. Thirdly, one of the things it is important to recognise, which

I am sure you do, is that pay is ultimately related to productivity, and productivity growth has been relatively modest, unfortunately, for some time. If we go back to before the crisis, one would expect, with a tight labour market, healthy wage growth in the 4.25% or 4.5% range. However, at that time, productivity growth was at 2.25% or 2.5%; now it is sub 1%. These types of pay growth—

Q445 **Alison McGovern:** Let me ask about productivity specifically. The inflation report, in relation to the capital-labour ratio, says that uncertainty over Brexit might be causing firms to take on staff, rather than make investments, to meet demand. Do you think—a brief answer would be appreciated—that that will exacerbate our current productivity problems?

Dr Carney: I do think that the slow pace of investment is going to reinforce the poor productivity performance, all else being equal. At the aggregate level, it is certainly true that businesses have been hiring, not investing.

Q446 **Alison McGovern:** Deputy governor Ben Broadbent, when he came before the Committee recently, said the following of Brexit uncertainty: "when we talk about uncertainty we are really using that as a euphemism for downside outcomes. It is very clear in the direct conversations with businesses and surveys and what business organisations have said, that in this particular case that is a no deal outcome for Brexit. Choosing that deliberately"—that is, no deal—"may reduce uncertainty. It will not increase investment, at least for those firms that have any connection with trade with the EU, whether directly or indirectly. That is pretty clear." Do you agree with him?

Dr Carney: I agree that uncertainty is a euphemism for the downside risk. I agree that the crystallisation of that downside risk would have an economic impact and would involve—this is not in his response, which you just read—a degree of capital scrapping. There will be some plant equipment activity and, unfortunately, skills—you cannot scrap your skills, but they become less useful—that would become obsolete.

Alison McGovern: There are a lot of people in this country who already feel their skills have been scrapped.

Dr Carney: Okay. That dynamic is weighed against the activity that would come as firms adjusted to the new realities.

Q447 **Alison McGovern:** To come back to wages and the overall picture, you described the statistical ups and downs, but that is not what we are really interested in; what we are really interested in are the fundamental movements in our economy. Average weekly earnings growth from 2002 to 2007 was around 4.5%; from 2010 to 2017, it was less than 2%. You have described the wage growth that we have had and the cause of that, and risks to productivity of Brexit. We have workers in the UK economy who have already permanently lost out in terms of wages, do we not? Will they ever make that back?

Dr Carney: It depends. It depends on the path we take, on a host of other decisions that they take and on policies that the country could pursue. I would not write it off. I would underscore that it has been a very difficult decade following the crisis. It has been the worst decade for real income growth since the 1850s. It is only in the last few years that there has been persistent growth in real incomes. We are finally in a better position, where households are starting to get ahead; they are starting to earn more on average than the rate of inflation. That is exactly what we all want. That would be further reinforced if productivity growth picked up. Our job is to make sure that prices remain under control, and we will conduct policy accordingly.

Q448 **Alison McGovern:** In relation to the deputy governor's comments, therefore, that Brexit uncertainty is a euphemism for downside risks, should the British public be worried at this point that, after that decade-long struggle on wages, all we have facing us is downside risk?

Dr Carney: Those risks do not have to crystallise—they don't have to happen. That is not all that the British public is facing. They are starting from a better position than has been the case since prior to the crisis.

Q449 **Alison McGovern:** Thank you. I want to ask Professor Tenreyro a quick question. In a recent speech, you said that muted domestic price inflation could be a more reliable guide to inflationary pressures than pay growth. Could you say why you think that?

Professor Tenreyro: I discussed that in my speech in Glasgow. Labour is not the only input in production—there are others. To me, the fact that inflation is not responding to wage growth pressures means that there is more capacity in the economy that is keeping inflation low—or at target, to be precise—other than monetary policy. I also discussed other factors: the decline in mark-ups, which reduce the gap between wages and costs, in general, and prices. That should be seen as an increasing efficiency in the economy to some extent, because they reduce the degree of monopoly power in the market.

I also speculated that productivity growth may be slightly higher than we see in ONS measures. It is unusual to see such high levels of wage growth with no pressure on prices. But that is more speculative. Again, when we see revisions to the data in five years' time, we will know. Then, I spoke about the relative adjustment in prices vis-à-vis non-tradeables. Basically, the low inflationary pressure is mostly concentrated in rents and non-tradeables, which to me speaks about the effects of Brexit causing this readjustment in relative prices.

Q450 **Alison McGovern:** Finally, on immigration, the MPC forecasts are conditioned on the ONS's principal population projections. They forecast a decline in net migration to 200,000 by 2021, but migration is outpacing that, mainly due to non-EU migration. How would that affect your forecast?

Dr Carney: That is all correct, and, as an assumption, we use the ONS's projections. In general, at the aggregate level, shifts in migration, whether positive or negative, have a marginal impact on overall wages and inflation. You are bringing supply into the economy—if I can use that term—but also those individuals take their wages and spend a substantial proportion of them in the economy, which brings demand. I am happy to circulate this to the Committee if it is of use, but we summarised the macro-analysis, certainly in 2015, and in the inflation report, but also subsequently. Even if the difference in migration is in the 100,000 range, the impact on inflation two or three years out is around 0.1 in either direction. That is something, which is why we track it relative to the ONS, but it does not radically shift the stance or policy. On the last point, my work outcomes are relatively favourable; in other words, people come in to work and add to the productive capacity of the economy.

Q451 **Catherine McKinnell:** The UK is often cited as one of the most—if not the most—regionally imbalanced countries in Europe. We have previously discussed that you receive regional information from Bank agents, but to what extent does that information translate into influencing or informing your economic forecasts?

Dr Carney: You are right: we do receive regional information, and all of us spend time in the regions on visits with businesses, third sector organisations, schools and others, to stay in touch with the variety of economic experiences in the country. As you say, there is quite a wide dispersion, as you will know from personal experience. On a micro level, you get a sense of where there is relative tightness or where there is slack in the economy. That is part of a mosaic picture of the economy as a whole—again, I underscore that we can only make policy for the economy as a whole.

Some analysis can be done looking at the differences within regions. For example, I don’t have something ready made to present to you, but in terms of pressures in regional labour markets or service price inflation, looking at regional analysis can help inform us about what the common drivers of the inflation process are. There are ways we can draw on that information, but the important point is that, particularly in the case of the MPC, we are making policy for the United Kingdom as a whole.

Q452 **Catherine McKinnell:** To what extent are those regional disparities a factor in themselves? To what extent do they effect the overall economic performance of the country?

Dr Carney: I would put it this way. Unfortunately, there are disparities in education across the regions. Clearly, one of the most powerful policies, if not the most powerful policy, to improve productivity, life experiences and wellbeing in the economy would be to bring education experiences across the country up to a common level, and certainly to the best level.

I am going to make an unfortunate analogy, but now that I have started, I am going to continue with it. One of the experiences—Andy Haldane and others have talked about this—with productivity in this economy and other economies since the crisis is that there has been a so-called long tail of businesses. Frontier firms are as productive as ever in charging ahead, but that tail has lengthened and grown fatter—there is a fair bit of evidence on that—so the diffusion of that expertise has taken longer for businesses. I would argue that is also the case in terms of education outcomes in general, in the country. It has been an issue for some time that the best educations and some of the poorest educations are available in the country, and that has an effect on life outcomes, obviously, but also on productivity growth.

Now, that is not the kind of thing that changes overnight, so, again, it is largely for the MPC. It is taken as given, because it is what influences the potential of the economy and the potential growth of the economy, to put it in economic terms.

Q453 **Catherine McKinnell:** Another thing that Andy Haldane said—he made a very interesting speech on this—is that it would be helpful for policy makers to look at these issues through a local lens as well as through the national lens, although I appreciate your position. To what extent do you do that? To what extent do you enable the local picture of how people's day-to-day lives are impacted to influence the decisions you are making? Or to what extent do you think that we should be doing that, and what do we need to do that?

Dr Carney: First, again, we have a remit given to us by Parliament, and one of the reasons why Parliament has given us a price stability remit is that high and variable inflation hurts the least well-off the most. So we always have to remember that it is not just because we are locked—we have to follow what you give us—but because the best contribution that monetary policy can make to welfare is to remove the really damaging impact of high and variable inflation.

If I may, I will go back to the earlier question about central bank independence. Prior to the Bank of England's independence in setting monetary policy, inflation averaged 6%, and since independence it has averaged 2%. Prior to independence, inflation was five times as volatile as it has been since independence. There is real value in that for people across the country.

The other comment I will make is that yes, it is important that we are out in the regions, that we talk not to just businesses but to the third sector, and that we meet people who want to give us their perspective. That is why we have put in place citizens panels and have much broader outreach—so that we hear the impact—but it is also important for us to make the case for why what we do at a national level has that value.

Q454 **Catherine McKinnell:** I guess what I am asking is that for the moment you would not change anything about how that is done. You do not think that there is more that we could do to contribute towards reducing that regional disparity.

Dr Carney: I will give you one quick example. From an MPC perspective, I don't see it; from a Bank of England perspective, yes, there are things we can do. We have just released a response to the van Steenis "Future of Finance" report. In our response, one of the major things that we are advocating, and putting in place the building blocks for, is to deal with the fact that half of the SMEs in this country cannot access funding; there is a £22 billion annual funding gap. There are ways to address that with new approaches to financing them, so we are providing some of the platform for that. That is something we can do that will help reduce regional disparities. It is good for the economy and it is consistent with our remit; it just does not happen to be consistent with the remit of the MPC.

Q455 **Catherine McKinnell:** Okay. I have just one last question, because we have covered Brexit in quite some detail this morning. However, there is quite clearly also a regional disparity element to it. And all the analysis shows that the regions, and particular the north-east, will be most impacted by whatever Brexit outcome we arrive at—a no-deal Brexit would be especially devastating. Are you confident that those differential impacts are being properly understood at the highest levels of Government?

Dr Carney: I will only give an analytic answer—the highest levels of Government can speak for their understanding of this. The Government have published a sectoral analysis on this, and I would say it is broadly consistent with our analysis of the industries that would be most affected in the short term. The north-east, the north-west, Northern Ireland and the west midlands are the regions that would be most affected. London and the south-east would be the least affected, based on that analysis. Industries such as pharma, food and transport—particularly transport equipment—are the sectors that are likely to be most affected. All of this, of course, is dependent on the nature of the future trading relationship and the transition to that.

Q456 **Catherine McKinnell:** But given the impact of a no-deal Brexit that the analysis shows, do you not therefore have concerns that it is still being talked about as a viable proposition for our economy and the economic future of the entire nation, but particularly for the regions that will be most affected?

Dr Carney: We are a taker of whatever policy the Government pursue and Parliament approves, and we will do whatever we can to achieve—we will achieve—the inflation target, and through other arms of the Bank we will support financial stability. I will just ask whether Sir Jon can make a point.

Sir Jon Cunliffe: I just want to make one point on the earlier question, not to answer that one.

Chair: Well dodged.

Sir Jon Cunliffe: I think sound monetary policy and control of inflation is a necessary foundation for regional policy being carried out by the authorities—the Government. The one thing that is worth thinking about is that not everything that is produced in the north-east for UK consumption is consumed in the north-east, and vice versa. Actually, the regions of the UK trade with each other to an enormous extent. Some things are produced and consumed locally, for example haircuts and services, but other things are produced in the regions for the whole of the UK. That is why one needs to keep the economy of the whole UK on a stable footing, because otherwise those things cannot happen.

Q457 **Mr Baker:** I need to declare my registered interest in Glint Pay. May I begin by congratulating you on how you have navigated these tricky waters of Brexit and the leadership this morning? I want to ask you about monetary policy and some of the bigger issues that have come out of several evidence sessions and that you have touched on this morning.

I should just say that my rejoicing briefly over IFRS was in relation not to operating leases, but to the treatment of expected credit losses, which features at length in the Bank's and the Prudential Regulation Authority's annual reports, but I feel sure that we will come back to that on another occasion.

Governor, back in 2014—it feels like a million years ago, I know—you told this Committee that monetary policy was at an extraordinary if not emergency setting. Since then, of course, we have had five more years of near-zero interest rates and another £70 billion in bank asset purchases. Would you acknowledge that monetary policy is still at extraordinary if not emergency settings?

Dr Carney: Thank you for the question. What has transpired since then has been that the judgment and probably the level of the equilibrium interest rate—the level of interest rates against which one would measure the setting of monetary policy in the UK—has remained low. In our judgment, and we published an analysis of this in—it has been a long time, so I am getting my inflation reports mixed up—

Dr Tenreyro: August 2018.

Dr Carney: In August 2018. Thank you. Our general view of where equilibrium interest rates could be was that around 2% to 3% was the nominal space. In the UK they were lower because of the uncertainty effect and, until very recently, the fiscal drag. Policy rates—as you know, 75 basis points—should be judged relative to a relatively low level of equilibrium interest rates here.

My point is that in my judgment monetary policy is accommodative but not, at this point, extraordinarily accommodative. It is accommodative, and appropriately so, given that there are some headwinds—we have been discussing them this morning—from the uncertainty that exists. But if those start to be lifted, that is one of the reasons why, at least in my judgment, some upward adjustment in policy would be appropriate.

Q458 **Mr Baker:** We are still in a set of circumstances where rate rises will be limited and gradual.

Dr Carney: Yes, we are still in circumstances—to go to the thrust of your question—where the overall level of interest rates, in our judgment, is materially lower than historically. In the history of the Bank of the England—three centuries plus—the average rate of Bank rate equivalent would be 4½%. We think the rate that would be consistent with the economy operating at full capacity, and with inflation remaining at target, all things being equal, is considerably lower than that.

Q459 **Mr Baker:** You have made speeches in the past—one back in 2012, before you were appointed—about the interplay of monetary policy with wider issues. In particular, you told this Committee: "It would be absolutely welcome to raise interest rates. It would take some pressure off macroprudential policy". Could you outline some of the pressures that this interest rate environment is putting on macroprudential policy today?

Dr Carney: I think that any time that rates are low and stable, there is a risk that businesses, households or financial market participants will extrapolate that far out into the future and take excessive risks. Those risks are compounded if the view develops that the central bank will always be there to rescue, particularly financial market participants, if things go wrong, and that if risk crystallises the central bank can somehow convene against those. That is a dangerous situation.

We are fortunate in the structure of the United Kingdom; we have a robust macroprudential authority that is given clear direction from Parliament, has appropriate tools and, in my experience, has been appropriately reactive. There has been pressure on macroprudential policy, but macroprudential policy has responded to those pressures. In a moment I will introduce an issue, if I may, where we have concerns.

In terms of housing, the housing insurance measures that we have put in place have helped to address the risk of excessive debt build-up, which was discussed earlier. I will use that as one example where macroprudential has responded. If that hadn't been the case, there would have been more pressure on the MPC to step in eventually and respond with monetary policy, which would have had the impact of sacrificing hitting the inflation target for broader stability. That is a very difficult call. We could do that in extremis, if macroprudential policy becomes exhausted.

One of the issues in the development of the financial markets over the course of the last decade has been the strong growth of market-based finance, and the growth of funds that have daily liquidity and invest in increasingly illiquid assets. This is precisely the type of activity that happens. To be clear, I am not talking about a specific situation; it is a general situation. There are $30 trillion of these types of assets across global finance. Sir Jon, myself and the Bank as a whole have been raising this issue. This is a potential developing systemic issue. That is because the logic is that there is daily liquidity but the underlying assets are illiquid and so the reliance is absolutely on ongoing market liquidity, which itself almost has a derivative reliance on monetary conditions being infinitely accommodative, and that is just not going to be the case.

Q460 **Mr Baker:** Thank you. I want to bring in the other members of the panel in a moment, but I am just very conscious that it has now been 10 years. A generation of young people are growing up accustomed to interest rates that are still, by historical levels, extraordinary. Would you agree with me that some of these risks, particularly the one you just articulated, and also the mindset that is created in people as they grow up with these interest rates, represent a growing problem if this goes on for many more years?

Dr Carney: It does represent a problem, but—and I am going to quote an absent colleague—"Umbrellas don't cause rain." Jan Vlieghe gave a speech to this effect, which is the effect that we have a set of structural forces that have kept these equilibrium rates down. They are not going to disappear overnight. There are demographic forces, there is the structure of the international monetary system, there are issues on productivity—a variety of issues that are keeping these down, and they are not going to snap back overnight. So what the central banks have been doing is, relative to that lower level of interest rates, providing the support, but it does mean that the other arms of the central bank and other authorities have to be very alert to these types of issues.

Q461 **Mr Baker:** I am not trying to catch you out; I am trying to understand from a public policy perspective what the long-run consequences are of where we are. I really feel that when we go to and fro over this issue of demographic change and so forth, the structural factors to which you are referring have not snapped into place. Yet interest rates snapped down after the crisis. So if our current interest rate environment is attributable to those long-run structural changes—demographics and so on—surely that is not consistent with the way that interest rates had to be rammed to the floor immediately after the crisis. Those are two very different phenomena.

Dr Carney: I am glad you are raising this. You do have these longer-term structural factors, and we have published a lot of research on this as an institution—it may be a good opportunity to feed some of that back into the committee. It actually looks at disaggregating, in our judgment—not the MPC's judgment, but that of colleagues at the Bank—the structural forces. I recall that I raised this issue back in 2013, when I first became Governor here—that there were these issues around the structural.

You have a longer-term trend of, in our judgment, a decline in so-called equilibrium interest rates, driven by structural factors, that will eventually dissipate and revert. But post crisis you get a huge shock to the functioning of the financial system, and in and of itself you get a level jump in terms of the level of those rates.

For example, I know that our estimate at the Bank of Canada of the equilibrium rates in the United States in 2009-10 was minus 6%—orders of magnitude of that. That is not the case today. Right now on the Fed—to anyone listening to this, this is no steer on the Fed—public debate is about, "Is it around 2%, 2¼%, 2½%?" It is from minus 6% to 2¼%, and that delta—that difference—is largely explained by the absolute impairment of the US financial system post crisis, the rebuild of it, and then some positive developments in the US on productivity and other factors. You get the point, hopefully: those are quite different scenarios.

An obvious question is, "How did the US get to minus 6%?" They didn't drop rates to minus 6%, but that was the effort in terms of quantitative easing and the other asset-purchase programmes and things, which I know you are—

Mr Baker: There is a reason I had to declare my interest, but I can assure you that my intellectual approach to monetary policy precedes the investment, but there we are.

Dr Carney: Actually, I was not alluding to that; I was going to say that you are well familiar with these policies and have strong views on their efficacy, but in effect the Fed, in my judgment, was able to get policy down to a level that was consistent with unprecedentedly low—in fact, negative—equilibrium rates.

Q462 **Mr Baker:** I am very keen to move on to zombie firms, but could I just briefly allow the other panel members to comment on this interplay between monetary policy and the overall macroprudential framework?

Sir Jon Cunliffe: I would say two things. We could send you the chart that shows where we think the long-run trend real rate has gone down because of slow-moving factors such as demographics or productivity. Then, the shock of the financial crash pushed the short-term equilibrium rate way below. I think we published that in August 2018, and it would give you an idea of where we think those are. It pushed it a long way down.

There are two different things. The long-run interest rates have been coming down for 40 years in this country, and then you have a financial shock on top of that. The interest rate will always be what is, if you like, necessary to balance savings and investment and supply and demand at any given time. So the question is how do you deal with, potentially, as the Governor said, macroprudential. From looking at the UK, I have not seen in UK aggregates a particularly faster growth in credit than in nominal GDP. Credit and GDP are growing at roughly the same level, so I do not see that very low interest rates have led to explosions in house prices or consumer borrowing.

There is some deterioration in the credit quality of corporate borrowing, but corporate indebtedness has not gone up that much. Internationally, you see an increase through the market-based channel that we talked about, and there are some macroprudential risks there.

Mr Baker: As usual, I wish we had an hour to discuss this.

Sir Jon Cunliffe: I am sorry; I have gone on for too long. I think the rate will cycle along around the long-run trend rate, but lower rates will be a feature of the landscape for a considerable future.

Dr Tenreyro: The numbers and estimates at the Bank and at the Fed, for example, are that the trend rate has fallen by 200 basis points. Rather than the 4% to 5% range that we had pre-crisis, we are getting long-term equilibrium rates of 2% to 3%.

The interest rate in itself is not a goal; it is an instrument for us to achieve the target. At the moment, we have inflation right on target and unemployment at 3.8%. With a different interest rate, we would probably not be hitting the target.

Q463 **Mr Baker:** By way of bringing you in, Mr Saunders, and also to squeeze in my last question as context, a KPMG analysis found that 8%—possibly up to 14%—of listed firms in UK are what KPMG terms "zombies" and are able to stagger on only because of low rates. Do you recognise that analysis and do you share my concern that it might be a real phenomenon and that we should be alarmed that such a proportion of firms may be staggering forward because it is a low interest rate environment, which has implications for the other prudential work of the Bank?

Michael Saunders: Let me also answer the previous question a little bit and then turn to that. For the period in which I have been on the MPC—nearly three years—macroprudential issues really have not been a major factor in my voting on monetary policy. The household debt-to-income ratio has actually fallen slightly over the last couple of years. I did vote for tighter monetary policy in 2017 and 2018, but that was really because of the closing output gap rather than macroprudential issues.

On zombie firms, I have seen the KPMG analysis. The work that we have done suggests that the share of firms with low profits relative to their interest payments is pretty much stable now compared with where it was pre-crisis; it is not particularly high or low. To be sure, if monetary policy was tighter and interest rates were higher, some of those firms might not keep going. There would be a cost to that in terms of lost output, jobs and living standards. The outlook down the road would be that inflation would be below target and we would be failing to achieve our remit. Some firms that are currently doing okay would then probably be pushed to the edge—some firms would then become zombie firms.

It is also worth noting that I do not think that this issue has impeded new business creation in recent years. New business creation in the UK has been running above the pre-crisis pace in the last few years. Low interest rates, in terms of their support for growth, have provided a helpful background in that sense.

Mr Baker: It has been a very interesting canter around. Thank you.

Chair: Yes, we could touch on that for a long time.

Q464 **Mr Clarke:** Likewise, we could touch for a long time on QE and how we start to withdraw it from the system. I suppose that is the flipside of what Steve was just saying: we have artificially low interest rates, but we have also had a load of artificial money. In terms of how we actually start to withdraw that, we have a situation where the Bank has set out that the withdrawal can commence once the Bank rate hits 1½%. Now, 1½% is obviously low, but it is still not within the inflation report's forecast period up until 2021. Is it really something that is actually going to happen in anything approaching the near term?

Dr Carney: Thank you for the question. I apologise for editorialising but, from our perspective, we would not recognise the term "artificially low interest rates"; we have interest rates that are appropriate for achieving the inflation target. I would go back to something that Mr Saunders said, which is that a few years ago you would have had a group that suggested that we should be raising rates much faster at that time. It was post referendum, during the Brexit process. We made a couple of upward adjustments to interest rates, but nowhere near the extent that was recommended. Lo and behold, we are here today with inflation on target and the economy at or above full employment, so the rates are broadly consistent with our remit.

You are right in terms of the market curve. There is not an expectation over the forecast horizon of the next three years—this is even more the case than it was in May—that rates will get back to that level of 1½%. Consistent with that, or if something like that comes to pass, which very much depends on circumstances, we would not expect to reduce the quantum of assets purchased.

The reason for the MPC's position—it is an agreed position of the MPC—is that we want to use the Bank rate as the marginal instrument of monetary policy. We want to be in a position where, if the economy continues to progress and the rate is gradually moving up, we would have the room to provide conventional stimulus to the economy, in the event that there were a downturn. Inevitably there always is a downturn, for one reason or another—a shock from abroad being one example. We want to have the ability to do conventional stimulus.

Over the history of the independence of the Monetary Policy Committee, a rate cycle of around 150 basis points is what has been used and what has been required in order to provide that stimulus. Since we have brought the effective lower bound of rates—in part because of some innovations, in terms of the TFS and other things, which you are familiar with—near to zero, that would give us the room to respond.

Q465 **Mr Clarke:** You have preserved conventional stimulus, but is the concern that you have done so by perpetuating extraordinary stimulus? In the event of a really significant downturn—which, for various structural reasons, we would now hope is much less likely to happen than it was 10 years ago—have we now got sufficient ammunition in the arsenal, if a really serious crisis came along? You have put so much QE in, so could we repeat the experiment and get the same beneficial effect, if indeed it has had a beneficial effect?

Dr Carney: We cannot purchase ammunition by raising interest rates inconsistent with achieving the inflation target—I think "false economy" is too polite a term for that strategy; "stupid" is probably a better term. As the economy evolves consistent with the May forecast—which, as we have been discussing, is very much conditional on certain Brexit outcomes and other factors, including the globe—and if things transpire like that, then you would be expected to withdraw stimulus and raise the Bank rate, to a limited extent and at a gradual pace.

Q466 **Mr Clarke:** When can we expect to see a more developed plan from the Bank on this point? Obviously, the predictability of this withdrawal process will be essential to carrying the market with us and avoiding the kind of taper tantrums that we saw, particularly on the other side of the Atlantic.

Dr Carney: That is a very important question. I think the first element of having a developed plan is to provide some clarity about what is not going to happen. We are not in a situation today where the market is speculating whether we might withdraw a bit of QE, or move Bank rate or whatever. It is very clear that the reaction function of the committee, the tool we would use, is Bank rate. Even the 150 basis point guidance is something that we won't consider until we are around there; it is not an automatic trigger where as soon as we get there, we would instantly start to reduce QE.

There is a pretty good chance that this is going to be beyond my time on the MPC, so I am not trying to bind the committee, but I think it is consistent with the discussions that we have had around this issue—and others can comment—that as the rates began to approach that level, it would be sensible to provide some perspective on the potential resting place for the balance sheet of the Bank, so, what you are reducing QE down to.

I would make a general comment on the size of the balance sheet of the Bank of England. Because of the change in the way liquidity is provided to the financial system, the scale of the financial system, and even growth on the margin of currency, the size of the balance sheet is going to be bigger in the future than it was prior to the crisis, so not all of this QE has to be sold down.

I will stop there.

Mr Clarke: I was going to say, it is probably helpful, given that this will outlast your tenure. Mr Saunders?

Michael Saunders: This is an issue which we might have to face at some point, but I think if we reached a time either when rates are close to 1½% or when the market curve implies that we will get there pretty soon, you would expect us to say something at that point.

Q467 **Mr Clarke:** But at the moment, in your view, that is not something that is sufficiently close to merit such an indicative pathway.

Michael Saunders: Well, we have a policy rate at the moment of 75 basis points, with the market curve not getting to 1½% for quite a large number of years.

Professor Tenreyro: I would not take the market curve as the reference, because we can deviate from that, as we said, but I still think that we are not very close to the 150 basis points. I think we will keep working and keep thinking about how the unwind is implemented. Again, I don't think this is imminent. As we said, the unwind would depend on the circumstances at the time, so we won't rush.

Mr Clarke: Sir Jon?

Sir Jon Cunliffe: I think you put your finger on it when you said that the market needs to have a clear view of what is going to happen and, by inference, what is not going to happen. The other statement we made, which was very important, was that we saw Bank rate as the primary instrument of monetary policy. We have talked about why the market curve is reflecting lots of different things at the moment, but the market can see Bank rate. It has a number, it can see when we are approaching that number, and it then needs to think about QE.

But there is one thing that you wouldn't want to do. Because the unwind is something that the market will have to absorb over time, you would want to be as clear as possible, and once you started, you would want to be able to start in a predictable way. You might have to reverse it, but you would want it to be as predictable as possible.

I think we have set out the first steps of the plan, and actually this is not now something which the market seems to be expressing uncertainty about.

Q468 **Mr Clarke:** No, indeed. I suppose the caveat to this is that if you do have to raise interest rates in certain Brexit scenarios—particularly, presumably, a no-deal Brexit—the 1½% might suddenly heave into view significantly more rapidly than is currently anticipated. That being so, what impact does that have on your ability to start to unwind QE, and indeed to make sure that the market is ready for that process?

Dr Carney: I think that that is a helpful question to remind people that rate response is not automatic and there could be sustained inflationary impacts. We would respond as you would expect us to. I think in that circumstance, particularly if it is an abrupt no-deal circumstance, I would recommend that we would lean on the conventional, the primary instrument; we would use that. We would make it clear to the market that we were addressing a particular circumstance, we were bringing inflation back to target on a policy-consistent horizon—explaining all of that—and I would be minded to let sleeping dogs lie in terms of QE. *[Interruption.]* Yes. And then, when things settled down, my preference—again, not tying things—my preference would be that one would revisit and the opportunity would have been created.

I would go back to the earlier exchange and what Professor Tenreyro said, which is that if the longer-term equilibrium interest rate in the United States, globally and in the UK as an open economy is in that range of 2% to 3%, we will get to a position, provided the economy is back at full employment and inflation is under control, where that will be a natural resting place for the Bank rate, and this exact discussion becomes very relevant in those circumstances. But people should not expect us to jump up all of a sudden and surprise the market with an announcement around QE. This has to be very deliberately addressed. There are a variety of issues that need to be handled appropriately.

Q469 **Chair:** I have one further question, which picks up on something that was said earlier. Perhaps I can direct this to you, Sir Jon, with your FPC hat on. There was a discussion earlier about illiquid funds. Of course the Governor said, "I'm not talking about one particular incident," but I am going to talk about one particular incident, which came up in our session yesterday with the Financial Conduct Authority: the Woodford equity income fund, which is currently gated. I don't expect you necessarily to comment on this specific issue unless you want to, but the Governor just used the words "systemic issue" and I wondered whether what is happening with Woodford holds any lessons for the FPC in relation to financial stability. Is it something that you are looking at? Are you concerned about whether this will spread to wider trust issues in the industry?

Sir Jon Cunliffe: There have been two incidents of gating recently. One was the post-referendum gating of property funds—a different sort of fund—and the other was Woodford. I will not comment on either of the actual cases. Neither got to the level of financial stability. The FPC looked at and commented on the property fund issue. But there is an issue—it is more general, and it is a global issue, because much of this activity is outside the UK—that funds promise a redemption period that is inconsistent with the liquidity of the underlying assets.

The concern would be—I will give an example. A lot of retail fund money has gone into high-yield corporate bonds, and a lot has gone into emerging market bond funds. These are relatively illiquid markets compared with equities. If there was an investor loss of confidence in an asset class and you started to see redemptions, the question is, could those redemptions actually be made without large crashing in prices or, alternatively, suspensions and gates? They are a mechanism to deal with that, but if you have widespread suspensions, or suspensions in some areas, would it trigger, through contagion, effects elsewhere?

Finding ways to match the underlying liquidity to the redemption period is not easy, but I would say two things. One, we need to know more about the funds and the underlying risk characteristics. It is a new development in the international financial system, and there are efforts to do that internationally through IOSCO and the FSB, but we don't have the understanding of the dynamics of this as we do of banks. The other is that I think we do need some consistent application of matching underlying liquidity better to redemption. Both the Governor and I have said that publicly, and we are trying to promote that internationally.

Chair: Charlie is trying to attract my attention by waving at me. Go on—what are you going to say, Charlie?

Q470 **Charlie Elphicke:** Just a very short question. I just want to pick up on the exchange between Mr Baker and Mr Saunders. What worries me about these zombie companies pottering along is that we end up with a misallocation of capital in our economy, which means that we don't do as well and we don't have as efficient a use of money in our economy to drive productivity and drive the economy onwards. I worry about that. Would it not be better to incentivise a more efficient allocation of capital in our economy, so that it goes to where the money is going to get the highest return?

Professor Tenreyro: What is curious about their report is that it says, "industry leaders face fierce competition from new technologies, trends and innovative start-ups", and that is why they are concerned about these zombies. That is the opposite of a zombie economy.

The reason why we worry about zombies is that they are using up capital, as you say, that could be used more productively for these productive start-ups that are challenging incumbents. In that sense, zombies are a problem, because they might affect the health of the banking system. That is not really a concern at this time. There will always be zombies, in the sense that companies in any given year will do better or worse; that will happen, but that number—their share in the economy—has not increased relative to pre-crisis levels. It is not a concern at the moment in this country; it is more of a concern in some other countries.

Q471 **Charlie Elphicke:** My point is a more subtle one, which is that the culture of very low interest rates for a very long time and the culture of forbearance mean that quite large amounts of capital can be tied up in extraordinarily inefficient businesses that could be better used elsewhere.

Dr Carney: (a) There is not an extraordinarily large amount of capital tied up in these businesses; (b) there is not forbearance going on—as the regulator of the banks, I can tell you that straight; and (c) there were 357,000 or so new business start-ups in the UK last year, the highest since the crisis. It is a good challenge—it is an important challenge—but capital is circulating in this economy. The issue is people holding back.

May I make one other point, Chair, just to pick up on what Sir Jon said? I think on this broader systemic point around the structure of these funds, this is a big deal; it is becoming—you can see something that could be systemic. The point I wanted to make is that, starting in 2015, he and I have been raising this internationally because there is a co-ordination issue, whether it is IOSCO—which is securities regulators—or the FSB, and the FPC is very seized with this issue. So we are trying to make sure that if it is addressed, it is addressed in a consistent way.

Ultimately, if we can't get the world to move on it, we have to take our own responsibilities here, in co-ordination with the FCA and their responsibilities. But these funds are built on a lie, which is that you can have daily liquidity for assets that fundamentally aren't liquid; and that leads to an expectation of individuals that it is not that different from having money in a bank for some individuals, because "I can get my money," and so you get a series of problems: you get a structural problem, but then you have a consumer issue. We are working closely with the FCA, as we have been. We have to be very deliberate about the types of measures that need to be taken.

The last word is what Sir Jon said: something that better aligns the redemption terms with the actual liquidity of the underlying investment is infinitely preferable to the situation we have today.

Q472 **Chair:** You are right to sound alarm bells. Do you think this is an alarm bell that is an early warning system, in the way that we should have had early warning systems before 2008 and the financial crisis—a different crisis caused by different things, but money being lent to people who are never going to repay?

Dr Carney: In terms of orders of magnitude, it is still separate from the core of the system. Where it principally would hit is in leveraged loans, high-yield bonds and emerging market debt.

This is a point we have made in the past few weeks, and I can send the analysis: actually we do think that the way this is interacting with the structure of the international monetary system is a challenge. It is exacerbating the—well, basically, the fundamental asymmetry in the global system, which is that the Fed is very much primus inter pares in setting the cost of money, and the US is a diminishing proportion of the global economy. The impact of that structural mismatch is very much amplified by these types of funds, so it is important.

Q473 **Chair:** That is very interesting. If you do have any analysis that you are able to share with the Committee, I am sure we would be very interested to see it.

Dr Carney: I will share it.

Sir Jon Cunliffe: This is most definitely a function of the FPC. It is not just to address the problems we have had in the past and make sure they don't occur; it is to look at the changing structure of the financial system, domestically and internationally, and try and anticipate problems before they happen.

Q474 **Chair:** So in a way, it cuts right across all the committees, but particularly the MPC and the FPC.

Sir Jon Cunliffe: Yes.

Professor Tenreyro *indicated assent.*

Q475 **Chair:** Professor Tenreyro, you were nodding. Is there anything you wanted to add?

Professor Tenreyro: No, I was nodding positively. I agree.

Chair: We will get that on the record: positive nodding. That is what we like. Very good; thank you all very much indeed. This has been a fascinating session. Thank you for your time.