

Treasury Committee

Oral evidence: Re-appointment of Professor Anil Kashyap to the Financial Policy Committee, HC 2237

Tuesday 18 June 2019

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

Questions 1-66

Witness

I: Professor Anil Kashyap, Re-appointed external member of the Financial Policy Committee, Bank of England.

Written evidence from witnesses:

– [CV](#), [Questionnaire](#)

Examination of witness

Witness: Professor Anil Kashyap.

Q1 Chair: Good morning, Professor Kashyap. Thank you very much indeed for being here for your reappointment hearing this morning. In the words of somebody, “Follow that performance.” I know you were watching.

I want to start with questions on recent events surrounding Neil Woodford and the funds, which came up when we questioned Ben Broadbent last week. In an article on 6 June, the Governor said that “half of investment funds have a structural mismatch between the frequency with which they offer redemptions and the time it would take them to liquidate their assets. Under stress they may need to fire sell assets, magnifying market adjustments and triggering further redemptions—a vicious feedback loop that can ultimately disrupt market functioning.” Does the Woodford episode and the gating of the fund hold any lessons for the work of the FPC on the financial stability objective?

Professor Kashyap: Thank you for having me, and let me make a couple points about this. First of all, as you will know from reading our record and

statements, we have been warning about these risks, mostly in the domain of commercial real estate, for some time. The exact same dynamic that you just described would be present for commercial real estate. We have said that we have not acted on this concern only because these funds are such a small percentage of the market. This was a problem in the last financial crisis—not just here, but in the US. Offering daily redemptions on illiquid assets is a recipe for problems. I do not think that Woodford per se creates financial stability risks, but if it undermines confidence in the system it could be a very big problem. It is a very visible thing; it has got people worrying about whether this is going to be present elsewhere. I think our view is that we are on the look-out for this and we are going to keep watching it—and if it ever gets to the point where there are substantial assets in a vehicle like that, which could give rise to widespread spillovers, we would have to do something about it.

Q2 Chair: You have talked about the risks if confidence is undermined. Obviously, at the moment, the funds are a small percentage of the market. How significant is the size of the funds sector to the market—is it a question of size, or of overall investor confidence?

Professor Kashyap: There are two different points. One is that, even if something is of modest size, if you actually destroy trust in a structure or vehicle you can generate other problems—not the fire sale dynamic, but you might just generate a run of some sort. So, we worry about the trust issue per se. I think, for the possibility of the feedback loop and the fire sale, you really do have to have a lot of assets being sold at once to really kick that off—or at least raise it to the point where it is a financial stability consideration as opposed to a problem for that particular fund.

Q3 Chair: We heard Dame Colette talk about trust in the previous evidence session, so it is very interesting that you have mentioned it, and mentioned it so early. How does the FPC discuss trust? How does it measure it, how does it receive reports about how the financial sector is trusted and viewed by consumers and the ordinary person in the street?

Professor Kashyap: I think our biggest single responsibility is to convince the public that somebody is looking after these issues and that they should have trust; that there is actually somebody who is responsible for making sure that the system is sound and resilient. To me, that is our overarching job: to let people sleep a little bit better at night, not thinking that something is going to blow up and that nobody was paying attention. That factors into every decision that we are taking. When we come out and make a statement that we have looked at this and we think it is okay, they have to believe that we have done our job. I view the credibility of the committee as the first backstop in providing trust, and in ensuring the system is trustworthy. We are briefed on things all the time. That is one consideration that comes in.

Q4 Chair: Obviously, the FPC does not exist in isolation. There is a whole financial structure there. The funds are solely regulated by the FCA, but the head of the FCA is part of the committee. How well do you think the analytical functions of the FPC based at the Bank work, when it cannot rely on the PRA to provide it with information and insights? In reality, if

you have a concern about the funds, how are the bits of the system talking to each other?

Professor Kashyap: We are briefed regularly by FCA staff. Sam Woods, the head of the PRA, is also on our committee. One of the things that I have noted is how well the integration works. If you look back at the formation of the committee, there were some who argued that maybe we should just have one grand MPC, FPC—everything under one roof. I would not have agreed with that, and I still don't. One of the things that is really important, though, is the overlapping membership on these committees. I do not think there has been a single document where one committee at the Bank has tried to point a finger at the other. In fact, there have been times where the Monetary Policy Committee has said, "We're going to put in a knock-out clause; if the FPC says this decision is threatening financial stability, we'll reconsider it". The fact that you have these members on all the committees means that you don't get into this finger-pointing thing. Coming from the US, it is an endemic problem in the US that you have 10 regulators and they all think that the guy over there is responsible. We don't have that here.

Q5 **Chair:** So basically everyone together takes responsibility. But is there also, potentially—I think that the Committee asked this, and we have many witnesses in the Committees here—a danger of group-think? Because everybody is knitted together, nobody wants to say that somebody else got their job wrong, because they might be on the committee with them.

Professor Kashyap: Perhaps, but the externals don't face that problem. In fact, I view it as our remit that we are supposed to provide challenge, and I think we do that. I realise that they have to get along with each other, but there are enough checks and balances. As an external member, I view it as a headline risk for the committee that if there was something you were worried about and you don't bring it forward and don't get a concern at least into the record, it means you have not done your job. You can see portions of our record where it says, "Some members thought this, some members thought that." I view that as the documentation that the committee members are not just lemmings.

Q6 **Chair:** It is a good thing.

Professor Kashyap: Yes.

Q7 **Chair:** On the investment funds, before I bring in Wes, do you think that the FPC should have any further powers over investment funds or other non-Bank financial institutions? Are there any specific indicators that you would like to see watched more closely in relation to investment funds? Is this an area that will be on the FPC's radar now?

Professor Kashyap: We have been watching this and we get briefed on these things all the time. We have a regular exercise where we look beyond the perimeter to investigate whether there is something that we feel we should watch more closely, so this is a perpetual question. Often the discussion about investment funds goes in the direction of saying, "They can amplify movements and therefore we want to regulate the fund in a particular way." I do not think that that is necessarily getting at the

real problem. If everybody decides that they want to take their money out at once, putting some capital into an asset manager will not change that. Stopping them from being able to have a bunch of illiquid assets would be helpful, but a lot of the quick fixes on asset management do not go to the root problem of the structural mismatch that the Governor talked about.

- Q8 **Wes Streeting:** Good morning. I am going to pick up on a similar line of questioning to that which I put to Dame Colette. First, on challenger banks as a source of financial stability risk, in your questionnaire, very much in line with Dame Colette's view, you did not believe that the rapid growth of challenger banks had been a central source of overall financial stability risk. Is there anything that gives you cause for concern that that might change, or are you as emphatic as Dame Colette was in her evidence?

Professor Kashyap: At some horizon, maybe, but they are a long way away from being material providers of funds. It is important to have competition and diversity in the financial system, so having these challenger banks is a very healthy thing. They have to be well maintained and regulated and so on, but I think we are doing that.

- Q9 **Wes Streeting:** Moving on to the issue of disruptive technology and whether that might pose a financial stability risk, what is your view on that front?

Professor Kashyap: It is a big threat. The first briefing that I got about open banking was eye-opening for me. The franchise value of an institution is its customer base—going back to the trust issue. If it became the case that a significant number of people were viewing the app on which everything was aggregated and they could just click right or click left and move all the deposits from one institution to another, and this app was sweeping those deposits every night across a bunch of banks, that would be a pretty different world. We are not anywhere close to that, but it is certainly something that we monitor and something that could be transformational, and it will probably take a long, long time.

- Q10 **Wes Streeting:** In terms of the immediate scenario, as we might face an Amazon or a Google coming along and providing services that to all intents and purposes are banking services, what would be your view?

Professor Kashyap: We would want to watch them. They are such big players that if they stepped into the market and quickly began gaining share, that would be an example of one of these risks beyond the perimeter that we would probably be all over. I don't think it is happening now, but could it? Sure.

- Q11 **Wes Streeting:** The final thing I want to test with you is the potential tension between the FPC's secondary objective to support the Government's economic policy of achieving strong, sustainable and balanced growth and what you describe in your questionnaire as, "Ensuring that regulation doesn't stand in the way of a diverse financial system and effective competition". To what extent do you think that there is a tension between the two?

Professor Kashyap: I don't see those as being in conflict. We are aware of the secondary objective, and when there is something that does not threaten financial stability, getting out of the way is a good thing, but I do not think that promoting challenger banks, or just letting competition work more broadly, is a problem. I think that is healthy for the economy. The biggest miracle that we could grant the country would be an acceleration of productivity growth, so to the extent that anything that we are doing could help to foster stronger productivity growth that would be a great thing.

Q12 **Wes Streeting:** Do you see financial regulation as a key factor in preventing productivity growth?

Professor Kashyap: No, not usually, but if we were to stifle competition and disincentivise innovation you could slowly have that effect.

Q13 **Wes Streeting:** How would you, as a member of the FPC, work through some of the challenges between what is a rapidly changing landscape in terms of technology generally and FinTech specifically? This is a key tension, not just in financial services but right across a range of industries. How do you get the balance right between enabling disruption and innovation, and the benefits that that brings, and mitigating the risks, which in this space could be quite serious if the FPC got this wrong.

Professor Kashyap: I guess you probably know that we have these closely monitored topics that we identify every year. FinTech is one of them, so we are watching that. I guess the other thing that I think of is that the single most devastating thing that we could do for the secondary objective is to let a crisis happen, so if we are getting our job right and we are removing the tail risks that is already a huge contribution. That is why I think of that as our primary assignment.

Q14 **Alison McGovern:** I have some questions about LIBOR, but briefly on productivity, there is a debate about whether the answer to the productivity problem really lies with those firms that are already innovative and are able to absorb new technologies, or whether we have to attend to the large number of firms that have very low productivity but are in sectors where it is unlikely that they might absorb innovation. Do you have a view on that question?

Professor Kashyap: Not really. Now I am way into the MPC's world. There is a ton of research about how much productivity comes from new entrants versus existing firms. I think you want to allow that process to work as best you can, but it is not something that I work on.

Q15 **Alison McGovern:** I just asked since you mentioned it. To come to my questions, can I invite you to discuss any risks to the financial sector that are associated with the transition from LIBOR to SONIA?

Professor Kashyap: As you know, there will be hundreds of trillions of contracts that will reference LIBOR long after it goes away. I think it is important that everybody understands that it is going to go away, and does not pray for some sort of extension. We are committed to doing this migration. I think it is going reasonably well in this country—arguably at least as well as it is in some of the other jurisdictions. It is not just LIBOR;

it is all the reference rates across the globe. I believe we are now up to something like 20% of the rate contracts now referencing SONIA, which is good, but that is going to have to accelerate.

I guess one of the things that we have been presuming is that as this becomes more salient the industry will start taking this more seriously and hopefully do a bunch of migration at some point to try to trade their way out of the contracts that they have and move over to SONIA. We are going to have to watch that. Next year will be another big period for seeing that. The single best thing that we can try to do is just keep reiterating, "You have to fix this. You're not going to get a bail out or an extension or anything like that."

Q16 **Alison McGovern:** Do you think that there is some latent expectation that there will be an extension?

Professor Kashyap: Yes. There are people irresponsibly suggesting that somehow LIBOR could be fixed or it is going to continue or all of that—I don't think that is going to happen.

Q17 **Alison McGovern:** What would be the incentive?

Professor Kashyap: There is a commercial incentive for the people who are involved in having those contracts traded on in a way that generates business for them.

Q18 **Alison McGovern:** You mentioned this just now, but would you say something about the potential risks to the UK from LIBOR in other jurisdictions?

Professor Kashyap: Again, it is hard to know how this will go. Europeans may be the furthest behind. The US is doing a little bit. I think the Japanese are doing better. Everybody has the same issue of wanting to try to move towards something where you actually have transactions supporting the establishment of a new rate.

I think it was reasonable to say we are going to support an overnight rate and then find a way to convert it into a term instead of trying to force trading and all these different tenures and maturities. We know that that is an artificial set of prices that could be subject to manipulation.

I think we have reached a good place in terms of where the official sector is trying to push things and now it is a matter of making it a priority and trying to push it along.

Q19 **Catherine McKinnell:** The FPC minutes of February 2019 concluded: "most risks to UK financial stability that could arise from disruption to cross-border financial services in a no-deal Brexit had now been mitigated". Does that mean the FPC is no longer doing any work to prepare for a no-deal scenario? What risks still remain?

Professor Kashyap: The two that we flagged on our checklist that were still amber were personal data and uncleared derivatives. The way I try to describe this when I am talking to people who are not following closely is to say that the UK has taken the position that everything that can be done domestically to try to say that business as usual can continue and there

will be a transition period has been done. The EU have opted not to do that. They could have taken the uncleared derivatives risk away. We are now in a situation where the national authorities are having to do it, but they could still come and do a Commission-level decision that would solve this. I do not really understand why you think because a derivative is cleared as opposed to uncleared we are not worried about contract continuity and so on. It may be a good thing that that is the No. 1 risk that we are flagging, relative to some of the things that were potential risks when we started the checklist.

The personal data thing is now dependent on model clauses being put into contracts. There could be litigation. We don't know if it is going to work for sure. Again, that is something that the EU could just recognise and say: "We trust the UK regime and are willing to let everything go". They haven't. I do not quite understand why they have done that.

We are monitoring this. We think the checklist was a helpful prod to push the Europeans to recognise this stuff, because it was the case that in some discussions internally, the fact that we had graded some of the stuff they had done as being incomplete was used to force conversations there. In the end, they will have to take that judgment. The ironic thing is that most of the things that are not attended to are going to make things worse for people in the EU than in the UK. It does not mean there will not be spillbacks, and all that. The loser, if things go badly, would be their own citizens, in most cases.

Q20 Catherine McKinnell: In your questionnaire, you also said you tried to challenge the assumptions that were made on the Brexit scorecard. Which particular assumptions did you challenge and were you successful?

Professor Kashyap: I don't know. There is one thing that I would have conveyed differently to how I hear most people talking about it. The Bank published this document, a request actually, in early December, that had what were then the worst-case scenario assumptions. I joined the committee in September or October 2016. Every single meeting we have been at there has been a section on disorderly Brexit. We have cycled through waves and waves of assumptions, scenarios and discussions, and we never tried to come up with one single point estimate of, "This is what it would be."

To the extent that any of us were effective in that, it was in saying, "Let's kick the tyres on this. Do you believe this would work this way, that way or the other way?" For providing assurance, you should realise that we looked at this from so many different directions—start top-down, go bottom-up, try all these different things.

In the month leading up to when that document was published, we had a briefing, I would say, about 1 November, and there was a lot of back and forth, saying, "Where did this number come from? Where did that number come from?" At one point, there was a typo, so there was actually a number that did not make any sense. I said, "I don't believe this number; it can't make any sense." The response was, "Oh yeah, actually we transposed it."

There is a lot of back and forth on all these things. The credibility of that document has to be, "Look, if you make these assumptions, you can wind up here." Just like our annual cyclical scenario, that is not like a forecast of best case or anything like that, but it should be: "Look, this is a really scary set of outcomes and this is the assurance that these things fit together in a way, so that I am not saying x and not-x on two different pages."

- Q21 **Catherine McKinnell:** To what extent, in terms of a post-Brexit, financial stability scenario analysis, have you considered a situation where we in effect have very little say over our regulatory environment? I have a number of scenarios to put to you. Shall I give you them all or one at a time?

Professor Kashyap: Whichever you prefer.

- Q22 **Catherine McKinnell:** Where we have little say over our regulatory environment, we are effectively rule-takers. In order to respond to that, within the new framework and environment that we are working in, we have significant weakening of our regulatory framework. Or, post-Brexit, there is some major constitutional change within the United Kingdom, for example, in respect of Northern Ireland or, indeed, Scotland, and further constitutional change in that respect. To what extent have those different scenarios been assessed in terms of our financial stability in future, in a post no-deal Brexit world?

Professor Kashyap: In every statement that we have had since the referendum there has been something like, "The Financial Policy Committee requires a post-Brexit level of resilience at least as good as currently planned, which is itself beyond international standards."

It would be my view that, if we found ourselves in a rule-taking situation, it would be the duty of the committee to say, "If we do not believe we can deliver that level of resilience, it is our job to come back to you and say we are stuck, that we think this needs to happen. The arrangement that we find ourselves in now means that we can't do it." Then we would have to have a conversation.

It is very hard to foresee exactly where we go if we go down that path. Many of my colleagues in the FPC have said, "If we end up with something where we have got maximum harmonisation hanging over us, meaning that we can't gold-plate anything in a way that would be appropriate for the UK, it would be a problem."

- Q23 **Catherine McKinnell:** You can't mitigate the risks?

Professor Kashyap: I don't think we know what the future arrangement is going to be. I can imagine that we could be in a position where we wouldn't be able to do something. I don't know if that is going to happen. If we find ourselves there, I think it would be incumbent on us to come back and say, "Here's a problem. How do you suggest we handle it?"

- Q24 **Catherine McKinnell:** Are you saying that we haven't assessed what a no-deal Brexit outcome would be?

Professor Kashyap: No, no, we have gone over a whole range of these things but I don't want to prejudge what the future arrangement is going to be.

Q25 **Catherine McKinnell:** Isn't that the point of mitigating those risks?

Professor Kashyap: There are some things that the committee does not decide—you give us a remit, and rules and restrictions on what we can do. I think we have been very clear that we have to be able to deliver this level of resilience, and if something prevents us from doing that, I believe we would be back in front of you.

Q26 **Catherine McKinnell:** So you have not assessed any of the scenarios that I have outlined to you for financial risk in those circumstances.

Professor Kashyap: If you are asking me whether we have talked about, "If we had to cut our capital regulation—", or those things, we have done things like the stress test; we know how much capital we think the banks have to have to pass our stress test. If somehow we found ourselves in an arrangement where we could not impose some of those buffers or surcharges, some banks would fall below the hurdle rates. We have done things like that.

Q27 **Catherine McKinnell:** And each of the scenarios that I outlined, which are not impossible to imagine—have they been tested?

Professor Kashyap: I was not on the committee when the Scottish referendum was live. I have to believe that there was a lot of modelling of how that would work. It would be the same kind of issues if the Union were to break up in some way. We have tried to model spill-backs from things emanating outside the UK. What we have not done is say, "Suppose we just turn off some regulation that we think is here and it just goes away overnight." We have not done anything like that. Presumably, we will have time to assess these things. If we go out with no deal, we were planning for that initially—that is kind of the attempt at the worst case. None of the regulations will go away instantly.

Q28 **Catherine McKinnell:** They will not go away instantly in the event that we leave on 31 October with no arrangement whatsoever with the European Union. The regulations will remain in place.

Professor Kashyap: Yes. You've imported them into the law. The SIs are all passed.

Q29 **Catherine McKinnell:** So therefore we have become rule takers.

Professor Kashyap: No, that does not follow. We have imported the rules. It will be smooth and continuous right across the exit date and then it will be about whether we want to change anything. I think the rule-taking thing comes if we enter into some sort of arrangement in future with the EU that requires us to become rule takers, not in no deal. At least that's my understanding.

Catherine McKinnell: Not overnight, but in terms of how we develop going forward.

Chair: We are going to move on.

Q30 **Mr Baker:** Let's have a complete change of subject. You mentioned cyber-security in your questionnaire. You said, "I also worry about cyber risks a lot, in part because breaches are inevitable". Of course, we do not want to help the enemies of banks, but could you give us some indication of why kind of cyber-risks you worry about and how they could be a threat to financial stability?

Professor Kashyap: To remind you, we are doing a pilot test. There are two types of attacks that we think about in this case. The one that the public tends to think of is something like a denial-of-service attack, where a system goes down and something is offline and not working. We are exploring something like that in our pilot. We have a framework for thinking about that; there is a period by which you have to be able to ensure us that you can come back online and we try to figure out how things work. Our focus is not on any one firm's resilience but on the system as a whole, on whether there are enough work arounds—even if one firm is out, somebody else can step in and pick up. That is the one that gets more attention.

The one that I worry about more is a data integrity breach, where somebody penetrates your system and is in there doing malicious things for months, let's say, and you find out about it at some point. Then you have this difficult situation where you have to restore the system and you could be restoring a corrupt system—where the act of coming back online basically destroys the ability to go forward. That problem, as best as I can tell, does not have an analogy in any other regulatory domain that I can think of. With this, you know you're sick now, but you don't know when you became sick and you don't know how far along you are.

Usually in these regulatory problems, there is an analogy. You can say, "We do food safety this way and nuclear proliferation that way." We have models that we can draw on. For the data integrity thing, we are kind of in new territory. The UK is in a good place. The CBEST tests are leading global standards for trying to probe resilience. We have been through one round of those and now we are going to go through another round, but as I said, it is a matter of time before one of these things happens on a big scale, and then we are just going to have to find out.

Q31 **Mr Baker:** Can we just talk a little about this idea of a data integrity breach? It has been a long time—more than 10 years—but I did used to work on software in banks. I am just conscious that it would be a very sophisticated attack, if you were able to disrupt the integrity of data for a long period without the bank's staff noticing that it was being done. Why do you think that is a plausible attack mechanism?

Professor Kashyap: Because if you wanted to do maximum damage, that is what you would probably do if you were a state actor. Imagine that you wanted to try to threaten the integrity of the UK's financial system. What would be the biggest way to do it? I think this would be on the table. In regard to tail risk, if you think about the worst case, this is pretty scary. If you think it is a state actor, I do not know if you can expect any individual firm to be able to defend itself. It is a very complicated—

Q32 **Mr Baker:** If we are talking about state actors and software complexity, an immediate red flag there is that IT staff in banks therefore might be targets for state agents seeking to subvert them.

Professor Kashyap: There are many ways it can happen, not only one.

Q33 **Mr Baker:** Are you warning that people should be alert to the possibility of their IT staff being subverted by state actors?

Professor Kashyap: I expect you are going to see, as we roll this framework out, all kinds of discussions like this. We are doing this pilot now to educate ourselves and the firms to try to figure out how best to communicate around these risks and how to explore. We have not tried to pre-judge the way anything is going to work out, but that is certainly something that will come up and that we will discuss, once we get to that point.

Q34 **Mr Baker:** I once mapped out the operational software for Lehman Brothers in its prime broker division. It was very complicated, but at least it is different from other banks. Would you worry if banks started to converge on overly similar systems that meant that multiple banks were sharing similar vulnerabilities in their architecture?

Professor Kashyap: Yes, and one of the risks beyond the periphery that we have warned about is the same cloud server. That we will get to sooner. What happens if you wake up and everyone is using the same server?

Mr Baker: Amazon Web Services is so popular.

Professor Kashyap: Yes, there are only two, three or four of them. If one of those became the dominant provider and someone knocked it out—

Q35 **Mr Baker:** I see. Suddenly a data integrity attack becomes more plausible because people are on the same web service provider.

Professor Kashyap: That is something that we have explicitly warned of and are monitoring.

Q36 **Mr Baker:** Do you think enough senior staff in financial institutions understand the issues and could even understand the conversation we are now having about web services?

Professor Kashyap: I think most bank boards will tell you that cyber is the biggest fear that they have. I don't know how deep they go, but in my experience, talking with people from the private sector, they are pretty worried about this. It is odd, because I think the incentives are a little different. If you are the board of your institution, your biggest nightmare is the headline, "Bank of X wiped out in software attack". The worst case for the FPC is that the system doesn't function. I do not really care if Bank of X is offline for a week, even if it is going to be disastrous for their share price. If the services that they provide that are critical can be delivered in some other way, then in some sense the system is okay.

One thing that is tricky is that it could be the case that the board's incentives about what to worry about are a little bit misaligned with the

general interest. They might think of their choice of the cloud service as innocuous, but if we notice that all organisations have picked the same one, we might want to worry a little bit about that, so I think there is a case for us paying close attention on this.

Chair: Final question, Steve.

Q37 **Mr Baker:** You have given a very interesting and useful answer, but it wasn't quite what I was after. Do you think there is enough actual expertise on financial institution boards to be able to have the conversation? Anyone can worry about what they do not understand.

Professor Kashyap: I don't know. Next time Sam's here, you can ask him. I do know that the Bank takes this incredibly seriously, so I would hope that we're paying attention to that.

Mr Baker: I have many other questions, but the Chair wishes me to stop.

Chair: We will ask that question as part of our inquiry on IT resilience, so we will come back to it.

Q38 **Colin Clark:** Can I ask you about the countercyclical capital buffer, which I have shortened to "capital cushion" so that I could get my head around it? You noted in your questionnaire that there were some times when you first joined that you were minded to move the capital cushion—the capital buffer—more quickly than occurred. What persuaded you to go with the consensus approach?

Professor Kashyap: A couple of things. First of all, I think that our normal statement is that, in a standard risk environment, the CCyB should be around 1%. We have never gotten to the point where we have thought that the risk level was elevated to the point where we would all agree that we need to move beyond 1.

Part of the discussion that I am recalling here was, "Suppose you think we're a little bit closer to that. Do you want to take out some insurance and go to 1.25 or something like that, so that you'd be closer to where you might want to wind up?" In the end, I thought, "Okay, we're still standard, it still seems like our cross-check between the stress test and the size of the buffer is close enough—this is fine." You can go back in the record and see there is a pretty vigorous debate about all this.

What is helpful is that the committee has agreed that if we start moving towards elevated risk, we would have to move pretty briskly, and maybe settle out at a higher number. I don't know whether the 1% resting place in standard times—if we actually go through the whole exercise of trying to get to where we think it would have to be for an elevated risk environment—would work.

Some Bank staff and I wrote a paper where we tried to calibrate how high the CCyB would have been, if it had been in the United States back in 2007, to provide enough capital so that you would not have needed to use the TARP and all of that. The number we got was somewhere between 3¼ and 4, so if we actually lived through an example where we—

Q39 **Colin Clark:** Is that possible?

Professor Kashyap: We argue that you would have seen signs that you were short and that if you had done a stress test—and the ironic thing was that the Federal Reserve staff briefed the FOMC on the level of house prices, and the conclusion from the briefing was they were 20% over-valued. If you look, from the date of that briefing to where the trough was, it was 21%, so they actually had the scenario, but then there was a debate about whether or not that would have big macro effects. Two memos were written: one said no, one said yes.

Q40 **Colin Clark:** If you had put it up to 3% or 4%, would it have put an intolerable pressure on the bank's capital anyway? Do you precipitate what you are trying to avoid?

Professor Kashyap: No, you turn off dividends. The thing you do is presumably force them just to retain— Banks pay an amazing amount of dividends. If you turn off dividends, they accrete capital pretty quickly. If you had done that stress test in the United States in the fall of 2007, you would have seen that they were way over-leveraged, way interconnected and super vulnerable, and you would have said, "You're going to have to get your capital up." Presumably the first thing that would have gone would have been all the distributions.

Q41 **Colin Clark:** I was taken by one of the lines from your questionnaire, in which you said, "By the time we reach the actual policy meeting, most of the differences have been settled because the best and most convincing arguments are clear to all of us." What a wonderful idea in politics.

Chair: Yes, it might have worked for the withdrawal Bill.

Colin Clark: It would be brilliant; we wouldn't have to be going through this. But how easy is it to discuss publicly when you may disagree with the consensus? Is that the nature of it? Is consensus the purpose, rather than to disagree publicly?

Professor Kashyap: Well, look. If you read our record, there are times when there were two views and most of the people were persuaded that one was stronger. What you will see is, they will say, "Some members thought this; others thought that. We agreed on this and that."

One of the things that is very different about the FPC versus the MPC is that we mostly do not have binary decisions, like putting the interest rate up or down. Think about how we are doing the stress tests. One of the most important things that we have to do is agree that scenario. There are so many different elements of it than whether you care if the CRE assumption is minus 38 or minus 32.

If you are convinced that directionally you have the right package, that is much more indicative of the typical decision that we take than it is on, say, the interest rate decision, where it is such a visible thing, and it is either up, down, or stay the same. Most of the things we do have multiple dimensions, which makes it easier to make sure that if you have a real concern it is attended to.

Q42 **Colin Clark:** One last question, just to fill a gap in my knowledge. Why is there a year delay between announcement and implementation? You spoke about the speed and timeliness of the CCyB. The announcement is in 2017, and it is a year later.

Professor Kashyap: Yes. It is written into the statute that the banks have a year.

Q43 **Colin Clark:** Is that quick enough?

Professor Kashyap: It depends. One of the things that they can do to fare better on the stress tests is to have a well articulated policy about what would happen to dividends and buy-backs in the event of certain things happening. They get credit in the stress tests if they have a well articulated policy in place. That way, you can say, "In this scenario, our profitability declined to a point where we would have turned off our dividends, and that is the way that we would accrete the capital."

You do not get a no pass for having that scenario kick in, so there is an incentive for them to try to be clear to their shareholders about when they would turn off dividends or not, if it turned out that the economy had slowed significantly. I think that they have learned that it is really bad to show up and say, "We would have had to do a capital raise to survive this." We have nudged in that direction, but it is a consideration that you have to give them a year, so one thing that we have done is that at one point we said, "If things go as we expect we are minded to do another 25 or 50 basis points in six months," so you put them on an escalator where they can see it coming.

Q44 **Chair:** We started off by talking about trust. Do you really think the banks would stop paying dividends? The banks are the shareholders. They are demanding of returns, aren't they?

Professor Kashyap: If their capital level is compromised, they would have to do it. Either that, or you would have to go and raise the capital. The whole reason for the one-year period is so that they do not actually have to show up and say, "I need money now." They can build it more gradually, so yes, I hope that they would do that if they were deemed to be under-capitalised.

Q45 **Chair:** If a bank decided to raise capital rather than reduce or stop paying dividends, how raised is the Governor's eyebrow?

Professor Kashyap: I think we care about them having the capital, not how they get it. As long as they have enough, to where we thought it was a responsible level—I kind of wonder how a board would justify, "I'm raising money over here so I can pay out over there," but if they chose to do that, it would be up to them.

Q46 **Mr Clarke:** I would just like to preface my questions with a couple of quotes from the financial stability report in December 2018 for the Bank of England. The first is that the "scale, growth and deterioration of underwriting standards of leveraged lending in recent years" has similarities to the pre-crisis US sub-prime mortgage market. The second is that "Lending practices in the leveraged loan market have deteriorated

over time, in a similar way to the US subprime market. In recent years, looser underwriting standards in the leveraged loan market have eroded traditional safeguards, such as maintenance covenants.” That being so, in your questionnaire reply, you did not highlight the state of leveraged loans.

Professor Kashyap: In our what?

Mr Clarke: In your questionnaire to the Committee for this—

Professor Kashyap: I worked on all the risks that were in our—anyway, I thought I said I endorsed the five things that we had in the last FSR.

Chair: We wanted to check, yes.

Professor Kashyap: I mean, we had a box in the last FSR.

Q47 **Mr Clarke:** Let me rephrase, perhaps. In so far as you did cover it, are you therefore confident that this is an issue which needs to be looked at, and which at this point in time you can indeed make strides to try and rectify before we have a repeat of 2008?

Professor Kashyap: In the last FSR, there is a box on leveraged lending, and there is a table in there that compares the size of the leveraged loan market to the sub-prime market. I think that was meant to try to raise the visibility of this issue, and we have spoken about it multiple times.

One of the considerations is that most of the leveraged lending that is going on is not funded by short-term wholesale funding, so the run scenario is not that large, and most of the ownership is outside the UK. International banks collectively own, as best we can tell—or have a lot of exposure, but UK-domiciled banks do not seem to be so exposed. If I were running a stress test in the US—because that is where a lot of it originates and resides—I would be stressing that market.

The regulators in the US that I have spoken with think that, because of the way these things are structured, the parts that the banking system is exposed to would be lesser, and it would be lots of hedge funds and non-banks that would potentially take the losses, but I think there could be more done. It is not that prevalent in the UK, so the risk to us is more indirect.

Q48 **Mr Clarke:** Roughly speaking, how closed is the UK banking sector? Can you try to quantify that in terms of the percentage of total leveraged debt that is sort of “ours”?

Professor Kashyap: If I recall, the last 12 months’ issuance in the UK is something like \$17 billion. That is the total issuance, so when you multiply that by a loss rate, it is not going to be a very big number. Our capital number is something like £250 billion, so if you take 10%, it would not be that bad.

Q49 **Mr Clarke:** What is that compared to the US, just so I can get my head around the scale of it in the US?

Professor Kashyap: Even in the US, it is not the banks so much. There are some Japanese banks that own a lot, and there are some US banks. In our FSR, we had a picture of who owns this stuff, and it was ranked from the safest tranche to the riskiest tranches. What you see is that the international banks own a fair bit, something like 30%-ish, but it is the safest tranches. Then, when you look down at the bottom, it is CLO vehicles, hedge funds, and maybe some pensions or alternative insurance companies that have a little bit of exposure. Anyway, the direct risk to the UK would be modest, just because we have not been responsible for that much of it.

Q50 **Mr Clarke:** Is the FPC doing any work on the decline in underwriting standards for corporate debt?

Professor Kashyap: We have a graph pointing out how much cov-lite lending has risen. We have commented that we do not like the way that those things are computed—I do not know if you have talked previously about the fact that when the loans are originated, there are often assumptions about cost savings in the future that are built into the earnings assumptions. It will say, “The ratio of interest to earnings is only a multiple of four,” but that is because you have assumed a bunch of stuff about the future that is best case, and if you took away those add-back assumptions, it would be more like six. There are lots of games being played. It is pretty unfortunate that the US Federal Reserve had guidance on this saying, “If you’re going to initiate anything, there are going to be limits,” but that was litigated and the courts ruled against the Fed. Basically, it has been off to the races since then.

Q51 **Mr Clarke:** It sounds like a really bad product. Based on what you have just been saying, it is prone to, in essence, exactly the same kinds of misrepresentations that were happening in the run-up to the sub-prime crisis.

Professor Kashyap: One point is that it is not being used to underwrite most cases of actual physical investment. A lot of it is financial repackaging and one firm buying out another, and some financial engineering. A lot of it is roll-over—something was initiated a few years ago and it just keeps rolling. I do not understand why the investors are so keen to buy these things that do not have the covenants, but there are limits to what we can say about it.

Q52 **Mr Clarke:** There is a very high reward premium, one assumes.

Professor Kashyap: You wonder, however, whether it is going to melt the minute there is a deceleration in growth or it cannot be rolled.

Q53 **Mr Clarke:** If a product is indeed going to melt the moment the economy slows, does the Federal Reserve not have a responsibility to try to do more to—

Professor Kashyap: Yes, except they lost. They tried—they gave this guidance, which was starting to have teeth. Precisely because it was starting to have teeth, there was litigation, which said, “You’re using the guidance in lieu of going out for public comment, and you are doing rule-

making through the back door," which is a hotly contested issue in the United States. They lost and they have not been able to find their way.

Caspar Siegart, who is here, and I wrote a paper that we delivered at a big Fed conference two weeks ago. The paper said, "This is a problem for the United States, because you do not have any way to extend the regulatory perimeter in the way we do in the UK. This is a gaping hole in US regulation." The former vice chairman of the Fed stood up and said, "I agree with this." The former president of the New York Fed stood up and said, "I agree with this." So this is in plain sight for everybody to see. I hope that Congress will act.

Q54 Mr Clarke: Operating on the basis that, when America sneezes, Europe tends to catch a cold, how concerned should we be, frankly?

Professor Kashyap: That is why we did that box of trying to figure out how much of the leveraged lending was owned. As far as I can tell, the FSR and the Bank's staff who did that were the first in the world to come up with those numbers. I know people in other jurisdictions have since tried to replicate those numbers. I do not think it will be a big deal for us. The bigger problem is this: if you can see something in plain sight that you are not attending to, what about the stuff that you cannot see? In the US, the bigger problem is that nobody really has a mandate to be standing looking at that.

Q55 Rushanara Ali: I have a supplementary question about the issues related to derivatives and data, which you mentioned being outstanding risks. You also mentioned the implications for other EU member states. Could you say a bit more about how much of a risk that poses to financial stability at the other end, as well as at our end? Is it manageable? Are we well placed to get an agreement before the end of October?

Professor Kashyap: These are actions—the two things, the personal data recognition and the uncleared derivatives, just to review the bidding again. The Commission could decide tomorrow, if it wanted to, to say, "We think that the UK's data integrity policy meets our standards and is equivalent"—I do not know exactly what the words are—"and therefore we're going to allow the sharing back and forth." The first-order effect of this is that most UK firms are housing the data in the UK, which means the provision of services here will not be affected. It will be some customer in the UK who is counting on something happening—a payment going from the UK to the EU that would be blocked. We have tried to dimension this a bit, but it is hard. The firms are trying to put in clauses that say, "We've got the right to keep making these payments."

Q56 Rushanara Ali: What are the actual chances, in your assessment, of an agreement happening? Is it likely or not? Are you optimistic about it, leaving aside what they may or may not do?

Professor Kashyap: Not particularly. We got to the edge in March and April, and they did not do anything. I do not know why this time it will be different. Maybe they believe the model clauses are going to work. Maybe this is all just some grand political leverage thing.

Q57 **Rushanara Ali:** In relation to the derivatives market, which is worth trillions and trillions, how big a risk is that to financial stability if we do not get an agreement?

Professor Kashyap: It won't be initially. The way I understand this will work is that you will have a derivatives contract signed with somebody in the UK. The contract will remain in force, but your ability to do so-called life-cycle events, where you change the contract in some way because of changing circumstances, would not be permitted. What would happen is two things. The quality of the hedge might degrade, because you would like to modify the contract and you cannot. A lot of these contracts need to be modified in times of high stress, so you would see a spike right at the time when people would like to get out but won't be able to. Again, that will mostly be UK companies that have written protection for somebody in the EU. If you think the cleared derivatives are a big enough problem that you want to fix, why would you leave this open? I don't know.

Q58 **Rushanara Ali:** So the answer is that it would pose a major financial stability risk.

Professor Kashyap: It will build. On 1 November, nothing will have changed. It will take some time. If it looked like something bad was going to happen, this would be uncomfortable for EU clients.

Q59 **Rushanara Ali:** Let me move on to global risks. In the oral evidence to the Committee in January 2019, the Governor said that "to the extent that the trade war is isolated—between the United States and China bilaterally—third countries are relatively unaffected, provided there is not spillover through to financial markets." Do you think there have been any spillovers from the trade war to the financial markets this year?

Professor Kashyap: I don't know, because it is so hard to know exactly why markets are moving on any particular day. The US stock market has certainly responded to Twitter notes from the President in ways that make you think he says something and the market drops. You can see it there. In terms of the kinds of things that would be a big problem for us, I am not sure that we can say it has risen to that level. Obviously, if there were a big slowdown in China, it would feed into the EU, and our connections with the EU would be threatened. Our banks have quite a bit of exposure to China, so a slowdown in China would be something. That is why we do these very grim scenarios in our stress tests, to try to ensure that we would be covered. That is something we are monitoring very closely.

Q60 **Rushanara Ali:** Can you run through the sorts of circumstances in which things escalate further and get worse? You mentioned the EU, our trading and the third-country effects. If we were to increase our trade with China—you mentioned financial services, but we have other trade with China.

Professor Kashyap: That will happen slowly. The real FS risk would come from a sharp escalation of trade tensions between lots of places, not just between the US and China. If the President of the United States becomes convinced that threatening tariffs is the first thing he will do every time there is a problem in the world somewhere, then at some point he will

actually have to follow through and raise the tariffs. If that triggers retaliation, it is a source of concern. If people stop thinking that the US is a force for stability and global order, and start to view the US as a disruptor that is myopic and self-interested, then that will have consequences.

Rushanara Ali: So maybe a first step would be to shut down the President's Twitter account.

Professor Kashyap: I didn't say that; you did.

- Q61 **Rushanara Ali:** I have one final question. In your response to the questionnaire you stated that you worry about the composition of the foreign capital on which the UK relies, and that it is potentially more flighty than it was in 2016. In what ways is the foreign capital on which the UK now relies to finance its current account deficit more flighty than it was in 2016?

Professor Kashyap: In 2016 there was an imbalance with foreign direct investment. It was actual, real investment and cross-border flows. Now we have more of this financial funding that could potentially be pulled back. That composition has shifted more towards that type of financing, as opposed to FDI. That is something we have warned about and noted. It has been in the FSR for a while now.

- Q62 **Rushanara Ali:** What can be done about it? What can the FPC do about it? What would you suggest?

Professor Kashyap: Not much. We can certainly incorporate stress to that in our stress test. One thing that was done right before the referendum, which I thought was helpful, was for the Bank to advise all the major financial institutions that they had to have currency alignment between what their funding flows were and their hedges, so that a sharp movement in the exchange rate would not cause a spillover. We can make sure things like that are done. Around the referendum, you will notice that there was no concern and no problems around that, and that the funding kept on coming. The structure was a little different from what it is now.

- Q63 **Alison Thewliss:** In your response to the initial appointment questionnaire in 2016, you stated that you would be the only academic on the committee, and you had especially hoped to contribute to some of the more conceptual issues confronting the committee. Do you still perceive yourself as the only academic on the committee? Can you give some examples of how you have contributed to those conceptual issues?

Professor Kashyap: Well, by "academic" I meant that I was the only person who works full-time in a university, and I still am. I have given two speeches trying to lay some of these things out. The second speech was an attempt to describe how and why we take our decisions the way we do. I meant to try to write this down so that maybe other economists looking at the FPC would think about the way we operate. I have written a couple of papers with the Bank's staff. I just referred to one with Caspar Siebert, and the other one was with Casper Siebert, David Aikman and Jonathan Bridges. It also did a replay of the last financial crisis, and asked how

things would have been different if there had been an FPC. That is published.

I also wrote a paper, with another member of the Bank's staff, on how to think about cyber risk. Those projects were helpful in my own thinking, and maybe in raising awareness within our committee of some of the things we are doing. I am going to give a paper at the Bundesbank on Saturday on trying to have a model of how the debt deleveraging, which somebody asked about earlier, worked, because people scrambling to keep up with mortgages can generate a downturn. It was about how to think about the interactions between that consideration and bank resilience. My research is pivoted as a result of that.

Some of those deliberations have made their way into the committee. One of the things that I am particularly interested in is how we should measure the risk in the housing market. We monitor the percentage of households that have more than 40% debt service ratios. We have been talking about what is the right way to use that as an indicator of tail risk. Those are the main things.

Q64 Alison Thewliss: Do you feel that there should be more academics on the committee in support of that, or do you feel that there will be other gaps, perhaps on investment banking or other things? Is the balance right there?

Professor Kashyap: In the first of the two speeches I mentioned, I talked about the diversity of the committee and how important it is to have different experiences. One of the things that I will greatly miss when Richard is longer on the committee is that he was mindful of different sets of considerations. He came from a very different background from me. Martin Taylor also has a very different set of experiences, as does Colette.

One of the things that I said in the speech is that you can debate how many people should have to have a PhD to have to be on the Monetary Policy Committee, but there is a pretty strong presumption that you have got to have a firm view of how the macro-economy works. There are clear benefits from training and the fact that most of those Monetary Policy Committees end up with a lot of PhDs in economics is probably a good thing.

For this committee, if you started loading us up with a bunch of people with my experiences, we would look where the light is shining—"Okay, I wrote papers on how the last crisis was; I'm going to think about how that is." Having somebody who has actually run a bank in the room is much more important. I think you really need a pretty diverse set of people. I think the Treasury has done a good job of bringing that diversity and being mindful of it. I would love to have another PhD there to pass notes with in the meetings or something, but I do not think that it would make our work better.

Q65 Alison Thewliss: When you were asked about the scope for further research work, you mentioned finding a "baseline canonical model of the financial system that we could use to study high-level connections between different actors in the system." I am pretty new to some of

this—I am new on this Committee—so could you explain a bit more about what that would mean?

Professor Kashyap: Lots of the stuff that we do is one at a time, and we do not look at feedback across sectors or agents. An example would be the paper that we are going to give at the Bundesbank. It has this possibility of what happens if your future income prospects decline. You then cut back on your borrowing today. Because you cut back on your borrowing today, you cut back on your spending today. When you cut back on your spending today, that creates losses for the banks. The banks then cut back on their lending, and you get that kind of interaction.

Economists have a hard time simultaneously modelling credit risk and liquidity risk. There are lots of models of one or the other, but putting them together is something that is not typically done. For better or for worse, most monetary policy committees have a couple of models that they can rely on that they use and run, and that everybody carries around in their heads. They all know, “If we do this, the model is going to tell us what is going to happen. I may or may not trust the model, but I know what it says.”

For financial stability, there is no walkaround model that we are all carrying. We have little bits of intuition about this or that, but we do not have something that fits together. To me, that would be the holy grail. The Governor calls it the “grand unified theory of everything,” and he says that we cannot wait for it. He is right.

Alison Thewliss: That sounds like a useful one.

Professor Kashyap: Yes—if you write out those initials it spells “GUTE”. A GUTE model.

Q66 **Alison Thewliss:** It is mentioned in the papers that you had worked on the Bank’s staff. Are you satisfied with the focus, expertise and resourcing of financial stability research or could there be more there?

Professor Kashyap: Yes, one of the things that I was the most pleasantly surprised about was just how much support we get. My reference point is the Federal Reserve. Many people I know have been Governors, or more than that, at the Fed. At the Fed, you get one person. You get one economist who kind of helps you a little bit. Here, pretty much any time you surface something, you’ll get follow-up memos.

I have one economist who I work with every day, but there is a whole support thing. I guess this is clever design on the part of your Committee. The Governor realises the trap if any external member were ever to say, “I didn’t feel well supported,” or, “I made a challenge and was locked out.” You don’t even have to go anywhere. If you make a point and say, “I wish we knew something,” you’ll start getting memos. That is really good.

One thing I pushed for when I joined the committee is that, at the end of each round now, after we’ve taken all the decisions, we go around the table and say, “What is it I wish I knew?” We had to take this decision; we didn’t know this, that or the other. We laid that out and then often two months later the staff will come back and say, “You guys said you wished

you knew this. Here's a little bit more information." I feel quite well supported.

Chair: Thank you very much, Professor Kashyap, for being here this morning and for filling in the questionnaire. We will consider our report for both appointments. We look forward to seeing you again. Thank you.