Mr. Kohn: This last discussion of lender of last resort has provoked some thoughts in my mind, involving the moral hazard in the application to nonbanks. So, for the Fed this is Section 13.3, and Dodd-Frank restricted the use of 13.3, and if anything, elevated the role of stigma in discouraging the use of the discount window by nonbanks in part by making all the lending be reported to Congress within a week, and other ways. I worry that the cutback has been too much, and that as nonbank financial markets become more important—broker-dealers, intermediaries—there won’t be a way of supplying the backup liquidity that might be needed in an emergency. At the same time, I agree with Simon Potter that the penalty discount rate is probably not enough to deal with the moral hazard, and especially when this borrowing would occur under very stressed circumstances when the penalty should be, under Bagehot, to normal rates, not to the stressed rates. Such a penalty won’t deal with the moral hazard then. And that prudential regulation is important to counter moral hazard. I think it would be better for the stability of U.S. financial markets if those institutions, nonbank institutions that were regulated and supervised similar to banks, would have more access to 13.3 than others who weren’t so regulated, and I’m particularly thinking about the broker-dealers of bank holding companies. So they are
regulated, they play an important role in intermediating the markets, and I would like to see sort of a two-level application of 13.3 non-bank with a more open application to more highly regulated things like broker-dealers and then a very strict restrictive application to those institutions that aren’t regulated.

**Mr. Taylor:** This idea of a lean balance sheet, which Ulrich Bindseil put forward and Simon Potter questioned a bit, I think is really key. To me, it’s attractive to aim in that direction at least because it sort of automatically makes the central bank a more limited-purpose institution, and especially an independent agency should have limited purposes. As Ulrich puts it though, it’s a goal for normal times, specifically, and that raises big questions about what is normal. Does normal include the simulations in Chair Yellen’s study, for example, which uses the balance sheet? Or, is it very rare circumstances, once in a generation? My question is how do you interpret the word normal?

**Mr. Lacker:** In 19th century central banking, lender of last resort operations combined two things: monetary policy—that is changes in the size of the liabilities of the central bank, in the case of Bank of England, bank notes, in response to changes in demand; and credit policy—taking on credit risk, that is to say changes in the composition of the assets of the central bank. Now, reading Bagehot and Founders of the Fed, for example, who adopted sort of the same approach, you can sense they’re excruciatingly uncomfortable with the credit risk part of it. And arguably it represented the reluctant compromise on their part because the other alternatives for assets for the central bank to hold were not good. At the time, sovereign debt was viewed as associated with inflationary finance, and they were reluctant to set up a central bank that had the capability and charge of routinely financing government deficits. Essentially, political economy considerations drove them to have lending to banks, credit exposure to banks, be the mechanism via which they changed the quantity of their liabilities in order to effectuate interest rate control, which is really the key here. Arguably, we are now in a very different situation, and it strikes me that it’s pretty simple to separate monetary policy and credit policy. We have a floor system where we can peg interest rates, effectuate interest rate control without, sort of
independently of what we put on the asset side. I’m wondering what I’m missing and whether—consistent with John Taylor’s comments for example—it would be valuable to think of monetary policy operating frameworks in a way that focuses on frameworks that separate credit policy from effectuating interest rate control?

**Mr. Bindseil:** On the U.S. system, the regulated nonbanks, I cannot add much. It’s logical that if you have such a category which can suffer from a liquidity squeeze in a future crisis situation, then it’s logical to say they should ideally benefit from the same or similar access to lender of last resort. From the outside, that sounds right. Then on what are normal times; if we look into the past I would say we had normal times from the 1950s to 2007. So, normal times where you are off the zero lower bound and you don’t need large-scale asset purchase (LSAPs) to provide monetary accommodation that we had for many decades. I wouldn’t give up optimism that this is the state of the world we can return to. We currently have a savings overhang and relatively low global growth—but hopefully for a few further years only. And as Simon Potter has formulated, it is of course a matter of how long these normal times will be so that the central bank balance sheet really can get short again during the normal periods. The objective is a lean balance sheet, the path there is another question.

**Mr. Carstens:** Ulrich, I enjoyed very much your paper and the comments. A very precise question. You discussed the operational framework for a central bank currency of the eurozone. And in that sense, for me, a key operational feature you have is Target2. Do you think that the operational framework would change dramatically if you don’t have Target2?

**Mr. Spriggs:** I want to talk about the lender of the last resort. This has come up in the eurozone with the problem of European states who ran into difficulty and what should be the role of the European Central Bank (ECB) in handling those. In the case of the United States, this was a very severe problem because our municipalities were hit very hard by pension liabilities when the stock market crashed and their pension funds were grossly underfunded. The result was that not having a lender of last resort, they cut dramatically in employment. We have not recovered that employment loss, and a
different view of the moral hazard problem is, of course, to avoid that kind of response. Without a lender of last resort, the solution of our state and local governments has been “Don’t bring on more employees.” Consequently we’ve had the biggest drop in school teachers in the United States in our history, which we still have not recovered from. In thinking about the diversity of the portfolio and the role of the lender of last resort, it strikes me that it would be good to have a section to deal with this issue because we’re not getting the kind of public investment you might think from these low interest rates. State and local governments are still retrenching, and investing at levels that can be sustained under subnormal conditions in fear of another downturn; not returning to investment levels that would represent long-term trends, or the real need for investment. It’s not happening because all of our municipalities and states are still retrenching and they have no recourse. Of course, we see in Puerto Rico it can go to a death spiral extreme.

**Mr. Kimball:** I just wanted to highlight Jean-Pierre Danthine’s remark about the ability to attain medium low rates, say minus 200 basis points even without taking paper currency off par. In particular, by encouraging zero rates for households (in ways I would add that don’t hurt the bank profits too much) you can subsidize that through the interest on reserve formula, and then you can make the wholesale storage of paper currency difficult. There was a very, very interesting Brookings conference on negative rates on June 6 that has the videos all online where these kinds of issues were discussed very nicely.

**Mr. Ingves:** In your paper when you talk about operational frameworks, you make a very relevant point saying that basically all of us carry a backpack filled with various institutional setups. And that has produced fairly different systems over time. For that reason, it’s hard to say there is an optimal way of doing this, and it’s just handled in different ways in different parts of the world. There are some variables though, that come back again and again, and those are really, really important when it comes to what system you end up in. First, one issue is how you deal with the government accounts, if they are passed through the central bank balance sheet or not. Second, is whether you have a fixed or a floating exchange rate because if you intervene
in the foreign exchange market, you produce or reduce liquidity in the system. Third, whether you do quantitative easing (QE) or not, because then you have the liquidity effect. If you do none of those, then the only way to change overall liquidity in the system is actually through the issuance of notes and coins. And if that’s the only thing you do, it’s very easy to predict what’s going to happen in the system because the use of notes and coin exchange changes very slowly over time, and is highly predictable. Depending on how you do these things, you’re likely to end up with quite different systems, exactly the way you talk about it in your paper. But if you don’t do these things, then you end up with a quite minimalist system because it’s fairly easy to manage such a system. Second issue, when it comes to lender of last resort and all the views on that, in a system with a limited number of very large banks, it’s almost impossible to hide lender of last resort transactions because liquidity is immediately changed in the system, and with a limited number of players, everybody will almost immediately understand what is going on regardless of what the central bank says.

Mr. Bindseil: The Target2 system makes the euro a true monetary area. If there would be no Target2 (T2) system, I guess we would have the sort of fixed exchange rate system. But you can think all of this away by imagining that we would implement monetary policy centrally, if all the accounts of banks would be with the ECB. In a decentralized set up, T2 balances in some just allow us to do what all other central banks did as well: lend a single currency to banks against collateral, in particular in a crisis situations, with intentional elasticity to address the crisis situation. And in the case of the euro area, let’s say asymmetry of capital flows and the crisis intensity which then is driving the target balances. On the lender of last resort, if I understood you correctly, the question is lender of last resort to municipalities, to official sector entities. In the euro area, the limits to that are guided by the so-called monetary financing prohibition that doesn’t allow access of public entities to the lender of last resort. Of course, you could say, it is a bit the same question as banks versus regulated nonbanks. The rest of the economy and municipalities, everyone with debt can be subject to a liquidity squeeze, and you can always find at least ex-post arguments for the central bank acting as lender of last resort. Ex ante,
you have the issue of moral hazard and you could say the government sector being able to tax the economy should be able to sort out those problems without the central bank. Otherwise, moral hazard and fiscal dominance problems could become predominant. That’s the conclusion that was drawn in Europe. Then, on Stefan Ingves’ comments, I think the whole paper is really on large monetary areas which have the privilege to not have liquidity flows from exchange rate issues, and that’s a privilege that makes things very simple. I always fear that if you want to learn really about other challenges in monetary policy, you cannot do it in such a large privileged area. But the paper is indeed about that case, and there are limits to universality in the conclusions when you move to countries where the foreign account is a factor of uncertainty and driver of liquidity. And the same holds for what you were saying on banks. If you have a very concentrated banking system with a few banks only, which is more likely to be the case in a smaller monetary area, then you have different transparency issues when acting as lender of last resort. All that is, indeed, not developed in the paper but very important for countries that deviate from the case of a very large monetary area with flexible exchange rates.

**Mr. Hakkarainen:** First, many thanks for a very good paper, very comprehensive paper, and I would not expect anything else from Ulrich Bindseil. Relating to monetary policy implementation, collateral framework is of essence. First, they’re providing liquidity in the simple way; and then secondly, to manage risks properly. In your paper, you give a possibility to have a collateral framework which would be not cyclical, would be avoiding pro-cyclicality. And secondly, you say that there could be several pools of collaterals and that collateral pools with differentiation of prices. Could you elaborate and describe what your thoughts are on this issue?

**Mr. Bindseil:** Indeed, collateral frameworks should not be pro-cyclical. That’s the old Bagehot idea that you lend against paper that is, in normal times, fine. Concretely, how can central banks achieve this? Central banks should be on the conservative side in good times and then leave haircuts and eligibility unchanged to the extent possible in bad times. The issue of a single versus several pools of collateral is a very interesting one that is only touched superficially in the
paper. You have the Bank of England approach with up to three pools of collateral. The United States has very wide collateral set for the discount window and a restrictive one for credit open market operations. The Eurosystem has all collateral in one big pool, and the question there is, is there some sort of adverse selection of banks in the use of collateral that is bad and undermines central bank risk protection or maybe even financial stability in the long run. In the paper, there are some arguments in both directions without, however, aiming at being conclusive. Let me briefly justify the Eurosystem approach: the ECB applies the “risk equivalence principle,” according to which the haircuts on eligible collateral are determined such that all types of collateral after haircuts can be considered equally risky from the central bank perspective. Therefore, the central bank should be neutral on which collateral is used. If you dislike concentration risks arising in the use of collateral, then put directly a limit on the concentration, but this doesn’t necessitate ex ante different pools of collateral for different operations. This is a brief explanation of the Eurosystem approach. It is a deep and interesting question for more research.