Brian P Sack: Managing the Federal Reserve's balance sheet

Remarks by Mr Brian P Sack, Executive Vice President of the Markets Group of the Federal Reserve Bank of New York, at the 2010 Chartered Financial Analyst (CFA) Institute Fixed Income Management Conference, Newport Beach, California, 4 October 2010.

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It is a pleasure to be here today to discuss the management of the Federal Reserve's balance sheet. The Federal Reserve currently holds more than $2 trillion of securities in its portfolio, making it a key participant in U.S. fixed-income markets. Moreover, the portfolio is managed in a manner that differs from any other market participant, as the Federal Open Market Committee (FOMC) has adjusted the size and composition of the portfolio with the intention of achieving its monetary policy objectives of full employment and price stability. Thus, it is important for market participants to understand the balance sheet decisions of the FOMC and the implementation of those decisions to fully assess the implications for fixed-income markets.

The evolution of the balance sheet going forward will depend on how the economic outlook unfolds. The current forecasts of FOMC members show the economy moving in the right direction, with a sustained recovery in GDP, a gradual reduction in the unemployment rate over time, and an increase in inflation towards the level that FOMC members see as desirable over the intermediate term. However, the anticipated recovery is relatively tepid and thus delivers only slow progress toward meeting the Federal Reserve's dual mandate. Indeed, according to their most recently published forecasts, most FOMC members expect the unemployment rate to remain above 8.25 percent through 2011 and the inflation rate to remain below its mandate-consistent level through 2012. In addition, the economy remains vulnerable to downside surprises that could take both output and inflation further away from the FOMC's objectives.

The sluggish outlook for the economy and the risks that surround that outlook have raised the possibility of further monetary policy accommodation. The most recent FOMC statement indicated that the Committee "is prepared to provide additional accommodation if needed to support the economic recovery and to return inflation, over time, to levels consistent with its mandate."

The FOMC has several policy tools that it could use to achieve more accommodative financial conditions, as Chairman Bernanke discussed in his speech at the Jackson Hole symposium in August. My remarks today will focus on one of those options – changing the size of the Federal Reserve's holdings of securities. In particular, I will review the FOMC's recent decision to keep the size of those security holdings at their current level, and I will discuss some of the issues to be considered in any decision on whether to expand them further. As always, the views I express are my own and do not represent those of the FOMC or the Federal Reserve System.

Decision to reinvest maturing asset holdings

The initial decisions by the FOMC to expand the Federal Reserve's holdings of securities came at the height of the financial crisis. Before that time, the Federal Reserve maintained a relatively simple portfolio of between $700 billion and $800 billion of Treasury securities – an amount largely determined by the volume of dollar currency that was in circulation. In late November 2008, in the face of tightening financial conditions and a deep downturn in economic activity, the Federal Reserve announced that it would purchase up to $600 billion of agency debt and agency mortgage-backed securities (MBS). In March 2009, it expanded the program to include cumulative purchases of up to $1.75 trillion of agency debt, agency

MBS, and longer-term Treasury securities. The use of the balance sheet in this manner was spurred in part by the inability to ease further using the traditional policy instrument, as the federal funds rate effectively reached the zero lower bound in late 2008.

The asset purchases were carried out from December 2008 through March 2010 by the Trading Desk (the Desk) at the Federal Reserve Bank of New York, resulting in a significant expansion of the Federal Reserve's portfolio. As the settlement of those purchases progressed, the amount of domestic securities held in the System Open Market Account (SOMA) reached a peak of $2.1 trillion in June 2010. From that point, the portfolio began to shrink because the agency debt and agency MBS held in the SOMA were being allowed to run off without reinvestment as they matured or were prepaid.

Against that backdrop, an important policy decision regarding the Federal Reserve's portfolio was made at the August FOMC meeting, when the Committee decided to halt this run-off and instead hold the size of the SOMA portfolio steady. To achieve this, the FOMC directed the Desk to purchase longer-term Treasury securities as needed to offset any principal payments realized on our holdings of agency debt and agency MBS.[1]

That was not just a symbolic policy decision, but instead involved a meaningful shift in the path of the balance sheet. At the time of the meeting, the Desk was projecting that about $340 billion of the Federal Reserve's MBS holdings would be paid down from that time to the end of 2011. In addition, another $55 billion of agency debt holdings would mature over that period. Thus, the total portfolio was expected to shrink by nearly $400 billion by the end of 2011. The reinvestment decision therefore amounted to a sizable program to purchase longer-term Treasury securities.

The effect of asset purchases on the economy remains a point of ongoing debate, with some uncertainty about the channels through which such purchases operate and the magnitude of those effects. My own perspective is aligned with the view expressed by Chairman Bernanke in Jackson Hole – that the effects arise primarily through a portfolio balance channel.[2] Under that view, our asset holdings keep longer-term interest rates lower than otherwise by reducing the aggregate amount of risk that the private markets have to bear. In particular, by purchasing longer-term securities, the Federal Reserve removes duration risk from the market, which should help to reduce the term premium that investors demand for holding longer-term securities. That effect should in turn boost other asset prices, as those investors displaced by the Fed's purchases would likely seek to hold alternative types of securities.

Some research studies have estimated that the effects of the earlier expansion of our securities holdings by just over $1.5 trillion lowered longer-term Treasury yields by about 50 basis points through this portfolio balance channel.[3] These effects on Treasury yields appear to have been transmitted into lower rates on private credit instruments and higher asset prices more broadly.

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1 Reflecting the long-standing practice of the Desk, principal payments on our holdings of Treasury securities were already being fully reinvested at Treasury auctions.

2 The Fed's asset purchases initially had an additional and important effect on mortgage rates by improving the functioning of the MBS market. As I have noted in earlier speeches, the use of the central bank's balance sheet can be particularly effective when focused on markets in which liquidity and market functioning have become impaired. The focus here is whether, in addition to those effects, the size and composition of the Fed's balance sheet have a lasting impact on financial conditions in well-functioning and relatively liquid markets.

3 See, for example, Joseph Gagnon, Matthew Raskin, Julie Remache, and Brian Sack, "Large-Scale Asset Purchases by the Federal Reserve: Did They Work?" Federal Reserve Bank of New York *Staff Report* no. 441, March 2010. Several private-sector firms have estimated yield effects of similar magnitude. In addition, a working paper by James Hamilton and Jing Wu, "The Effectiveness of Alternative Monetary Policy Tools in a Zero Lower Bound Environment," finds that changes in the Federal Reserve's asset holdings produce considerable yield effects.

Under this view, the FOMC's influence on financial conditions is associated with the size and composition of its securities portfolio. This perspective provides a clear rationale for the reinvestment decision made at the August FOMC meeting. The decline in the size of the Federal Reserve's portfolio that would have occurred in the absence of the reinvestment program would have amounted to a passive tightening in the stance of monetary policy, as the portfolio balance effect would have gradually reversed. Moreover, the extent of this tightening was increasing in response to the weakening of the economy, as lower longer-term yields were leading to more rapid repayment of MBS. This perverse effect was seen by the FOMC as working against its efforts to reach its dual mandate.

In effect, the policy approach that was implemented before the August meeting acted to mute the amplitude of movements in longer-term interest rates. As rates declined in response to a weakening of the economy, the Federal Reserve's MBS holdings would decline more rapidly, effectively adding to the supply of duration held by the market.[4] This increase in the duration held by the market would tend to damp the decline in yields. With the change in strategy at its August meeting, the FOMC no longer lets its aggregate duration holdings flow back into the market. This approach allows long-term interest rates to adjust fully to a weakening of the economy, which should act to better stabilize the economy.

Implementing the reinvestment policy

So far, I have focused on the FOMC's August policy decision; however, you may also be interested in the details of how the Desk has actually implemented the reinvestment policy.

The instructions from the FOMC to the Desk, from both the August FOMC statement and the directive that was adopted at that meeting, were to keep the total face value of domestic securities held in the SOMA portfolio near their level at that time. The published size of the securities portfolio just ahead of the August meeting was $2.054 trillion, so the Desk adopted this level as the target for the portfolio. This is a notable development by itself, as the directive from the FOMC now involved two targeted variables – the target range for the federal funds rate, and the target size for its asset holdings.

To implement this directive, the Desk has been purchasing Treasury securities on a monthly schedule. In particular, we announce a plan around the middle of each month for the purchase operations to take place through the middle of the following month, once we know the principal repayments that will be received over that period.[5] We are running at a pace of $27 billion in purchases this month, and we expect that pace to bump up to around $30 billion for the next several months. Looking further ahead, we currently project that the cumulative amount of principal payments on agency debt and agency MBS through 2011 will be somewhat higher than the estimates provided at the August FOMC meeting.

I should note that the directive to the Desk is expressed in terms of the overall size of the portfolio. However, under the portfolio balance model described above, the effect on markets will be tied to the amount of duration risk that such purchases encompass. Thus, the composition of purchases across maturities will be quite important in governing the effects on financial conditions.

The strategy that the Desk has employed for the reinvestment program is to follow the pattern of purchases that was implemented in the earlier Treasury purchase program. The purchases will be concentrated in nominal Treasury securities with remaining maturities

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[4] Most of the prepayments of MBS in the Federal Reserve's portfolio are associated with refinancing activity that will result in the production of new MBS that have to be purchased by other market participants.

[5] Details of the Desk's approach were described in an operating statement released by the Federal Reserve Bank of New York: Operating Policy Statement, August 10, 2010.

between 2 and 10 years, but with some purchases also occurring outside this segment. The average duration of the securities purchased is expected to be just over 5 years, although the exact realized outcome will depend on the offers that we receive in our operations. Under this approach, the purchases will remove a considerable amount of duration from the market relative to what the market would have held without reinvestments by the Federal Reserve.

The reinvestment strategy, of course, also involves a reallocation of our portfolio from agency debt and MBS into Treasury securities. The FOMC's decision to reallocate was based on a variety of factors. However, one crucial consideration was whether purchasing Treasury securities would have an effect on longer-term interest rates comparable with that of purchasing MBS. My view was that the effects would be similar, because purchasing longer-term Treasury securities removes as much duration risk from the market as purchasing current-coupon MBS.[6]

The two approaches differ, however, in that purchasing MBS also removes prepayment risk from the market. If the market were to begin having trouble digesting that prepayment risk, the spread between MBS rates and Treasury yields could widen. A significant widening of MBS spreads to Treasuries, whether due to this or other factors, could affect policymakers' decisions about which assets to purchase. The Chairman's speech in Jackson Hole and the August FOMC minutes both indicated that reinvesting in MBS rather than Treasury securities might become desirable if market conditions were to change.

Balance sheet expansion as a policy option

As you can see, the decision to simply keep the balance sheet unchanged involved a number of considerations and choices. Let me now turn to the possibility that the FOMC could go a step further and expand the balance sheet beyond its current levels.

This policy option has been the subject of intense focus among market participants. Chairman Bernanke has indicated that any decision about expanding the balance sheet would depend on the FOMC's assessment of the costs and benefits involved. Of course, that assessment is difficult to calibrate. Federal Reserve Bank of New York President William Dudley discussed many of the relevant issues in his speech last Friday.[7]

In terms of the benefits, balance sheet expansion appears to push financial conditions in the right direction, in that it puts downward pressure on longer-term real interest rates and makes broader financial conditions more accommodative. One can reach that judgment based on the empirical evidence from the earlier round of asset purchases, as mentioned before. In addition, the market responses to more recent news about the balance sheet also lean in this direction. The market response to the reinvestment decision at the August FOMC meeting seemed largely in line with the estimated effects from the earlier round of asset purchases, once we account for the size of the surprise and the anticipatory pricing that occurred ahead of its announcement. And the increased expectations for balance sheet expansion in response to the September FOMC statement also generated a sizable market response.

To be sure, I think it is fair to say that this is an imperfect policy tool. Even under the estimates noted earlier, the Federal Reserve had to increase its securities holdings considerably to induce the estimated 50 basis point response of longer-term rates. In addition, there is a large degree of uncertainty surrounding the estimates of these effects, given our limited experience with this instrument. Lastly, it is reasonable to assume that the effects of balance sheet expansion would diminish at some point, especially if yields were to

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[6] The duration of our Treasury purchases are modestly higher than the duration of the MBS that are being produced in the market.

[7] See "The Outlook, Policy Choices and Our Mandate," October 1, 2010.

move to extremely low levels. Nevertheless, the tool appears to be working, and it is not clear that we have yet reached a point of diminishing effects.

Some observers have argued that balance sheet changes, even if they influence longer-term interest rates, will not affect the economy because the transmission mechanism is broken. This point is overstated in my view. It is true that certain aspects of the transmission mechanism are clogged because of the credit constraints facing some households and businesses, and it is true that monetary policy cannot directly target those parties that are the most constrained. Nevertheless, balance sheet policy can still lower longer-term borrowing costs for many households and businesses, and it adds to household wealth by keeping asset prices higher than they otherwise would be. It seems highly unlikely that the economy is completely insensitive to borrowing costs and wealth, or to other changes in broad financial conditions.

In terms of the costs of balance sheet expansion, the assessment is perhaps even more complicated. I will not attempt a comprehensive discussion of all of the potential costs of balance sheet expansion, as that assessment falls to the FOMC. However, as manager of the SOMA, I will speak about two of the potential operational challenges involved – one associated with implementing additional asset purchases, and one associated with exiting from them.

On the implementation of a program, an important operational consideration is whether Federal Reserve purchases would strain the functioning of financial markets and cause an erosion of market liquidity. This consideration would be particularly relevant if the FOMC decided that a fairly sizable program was needed to have a meaningful effect on financial conditions and the economy. This issue was present during the first asset purchase program, especially when the pace of weekly purchases reached a peak of about $40 billion in the middle of last year. The pace of those purchases at times put pressure on liquidity in the MBS market, leading the Desk to take mitigating actions when possible.[8]

In the current circumstances, there would seem to be room for the Federal Reserve to expand its holdings of Treasury securities without creating difficulties for market functioning. The SOMA currently holds about 12 percent of the outstanding stock of Treasury coupon securities – a smaller share than it held before the financial crisis. Moreover, the supply of Treasury securities will remain ample, as the Treasury is expected to issue around $1.2 trillion of securities over the next year.

Any purchase program that the FOMC decides upon, whether aimed at Treasury securities or MBS, would be designed to support market functioning as much as possible while still achieving the program's economic objectives. The deep liquidity of these markets has considerable value to our economy, and we should take whatever steps possible to leave this liquidity intact.

The second operational challenge I mentioned comes at the other end of the program – the exit. In particular, it is important to consider whether balance sheet expansion would complicate the eventual exit of the Federal Reserve from its accommodative policy stance.

I am confident that our ability to exit will not be compromised by any further expansion of the balance sheet. The exit strategy that is ultimately implemented will have to take into account the size and structure of the balance sheet at that time. However, in all potential circumstances the Federal Reserve should be able to tighten financial conditions to a sufficient degree when appropriate. The ability to pay interest on reserves, in combination with the ability to drain reserves as needed, will give us sufficient control of short-term interest rates. On that front, it is worth noting that both of the Fed's reserve draining tools

[8] For example, the Desk began to sell dollar rolls to allow for smoother settlement of the Federal Reserve's purchases.

– the reverse repurchase program and the term deposit facility – are already operational, and their capacity to drain reserves will continue to expand. In addition, the Federal Reserve could always sell assets to reduce the size of its balance sheet if it desired.

Designing a purchase program

If the FOMC were to move forward with an expansion of the balance sheet, it would presumably want to take into consideration the perspective gained from the asset purchases conducted from late 2008 to early 2010. The FOMC would have to decide the extent to which a new purchase program would follow the approach from the earlier round of purchases.

An alternative approach would be to design a purchase program that shares more of the features of the FOMC's adjustment of the federal funds rate in normal times. After all, adjustments to the balance sheet are in many respects a substitute for changes in the federal funds rate. Both instruments attempt to influence broader financial conditions in order to achieve a desired economic outcome. However, the way in which the FOMC implemented asset purchases differed in important ways from the manner in which it has historically adjusted the federal funds rate. With this contrast in mind, I raise a set of policy questions that could be considered in designing a purchase program.

First, should the balance sheet be adjusted in relatively continuous but smaller steps, or in infrequent but large increments? The earlier round of asset purchases involved the latter approach, which caused the market response to be concentrated in several days on which significant announcements were made. That might have been appropriate in circumstances when substantial and front-loaded policy surprises had benefits, but different approaches may be warranted in other circumstances. Indeed, it contrasts with the manner in which the FOMC has historically adjusted the federal funds rate, which has typically involved incremental changes to the policy instrument.

Second, how responsive should the balance sheet be to economic conditions? Historically, the FOMC has determined the federal funds target rate based on the Committee's assessment of the outlook for economic growth and inflation. If changes in the balance sheet are now acting as a substitute for changes in the federal funds rate, then one might expect balance sheet decisions to also be governed to a large extent by the evolution of the FOMC's economic forecasts. The earlier purchase program, in contrast, did not demonstrate much responsiveness to changes in economic or financial conditions. Indeed, the execution of the program largely involved confirming the expectations that were put in place by the two early announcements.

Third, how persistent should movements in the balance sheet be? An important feature of traditional monetary policy is that movements in the federal funds rate are not quickly reversed, which makes them more influential on broader financial conditions. A change that was expected to be transitory would instead move conditions very little. For similar reasons, one could argue that movements in the balance sheet should have some persistence in order to be more effective.

Fourth, to what extent should the FOMC communicate about the likely path of the balance sheet? The FOMC often communicates about the path of the federal funds rate or provides other forward-looking information that allows market participants to anticipate that path. This anticipation of policy actions is beneficial, as it brings forward their effects and thus helps to stabilize the economy. For the same reason, providing information about the likely course of the balance sheet could be desirable. In fact, such communication might be particularly important in the current circumstances, because financial market participants have no history from which to judge the FOMC's approach and anticipate its actions.

Fifth, how much flexibility should the FOMC retain to change its policy approach? The original asset purchase programs specified the amount and distribution of purchases well in advance.[9] However, the FOMC would be learning about the costs and benefits of its balance sheet changes as it implemented a new program. This might call for some flexibility to be incorporated into the program, providing some discretion to change course as market conditions evolve and as more is learned about the instrument.

Conclusion

I hope that my remarks today have offered some insight into the recent balance sheet programs undertaken by the Federal Reserve. Adjustments to the size of the Federal Reserve's securities holdings are a new policy instrument for the FOMC. That presents challenges, both to policymakers in terms of determining how to use the instrument and to market participants in terms of anticipating that usage and understanding its effects. Given these challenges, I believe it is important for the Federal Reserve to communicate effectively about the factors affecting its balance sheet decisions and the implementation of those decisions.

In my view, the evidence suggests that the expansion of the securities portfolio to date has helped to foster more accommodative financial conditions, and further expansion would likely provide additional accommodation. Of course, whether the FOMC decides to take such a step will be determined by its assessment of whether the benefits of additional policy stimulus outweigh the perceived costs of expanding the balance sheet.

[9] Some flexibility was incorporated into the program because the directives from the FOMC specified the amount of purchases "up to" the stated thresholds. That flexibility was used to stop the agency debt purchases at around $175 billion instead of the originally stated maximum of $200 billion. However, this flexibility was not used more broadly.