Brian P Sack: The SOMA portfolio at $2.654 trillion

Remarks by Mr Brian P Sack, Executive Vice President of the Federal Reserve Bank of New York, before the Money Marketeers of New York University, New York, 20 July 2011.

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Thank you for inviting me here tonight to give these remarks. These events organized by the Money Marketeers provide an excellent venue to talk about the Federal Reserve's involvement in financial markets, given the focus and expertise of your group. As you know, the Federal Reserve recently completed its second round of large-scale asset purchases, known inside the Fed as LSAP2 and to everyone else in the world as QE2. With the program now in the books, I thought it would be a good time to look back and assess the experience with LSAP2. Specifically, I will discuss the effectiveness of the program relative to its stated objectives, and I will describe some the operational challenges that we faced in implementing it. Lastly, I will touch on several issues related to the potential evolution of the Federal Reserve's balance sheet going forward. As always, my comments do not necessarily reflect the views of the Federal Open Market Committee (FOMC) or any other members of the Federal Reserve System.

LSAP2 and the Federal Reserve's balance sheet

Let me start with a few facts. The FOMC decided at its November 2010 meeting to expand the amount of domestic securities held in the System Open Market Account (SOMA) portfolio by $600 billion by purchasing longer-term Treasury securities through the end of June 2011. Those purchases were in addition to ones already being made to reinvest the principal payments from SOMA holdings of agency debt and agency mortgage-backed securities (MBS) into longer-term Treasury securities. The purchase program was implemented by the Open Market Trading Desk (Desk) at the Federal Reserve Bank of New York.

To be sure, it was a busy period for the Desk. Over the life of the program, we conducted 140 outright purchase operations to meet the directive set out by the FOMC. That meant that we were active on nearly every day possible over that period. In those operations, the Desk bought $767 billion of Treasury securities, which included the $600 billion expansion of the portfolio and $167 billion of reinvestments. Our operations ranged in size from just over $1 billion to around $9 billion, with an average size of about $5.5 billion.

Those operations brought the amount of domestic assets held in the SOMA portfolio to $2.654 trillion. The current directive from the FOMC instructs the Desk to continue to reinvest the principal payments on all domestic assets held in SOMA into Treasury securities. Thus, the amount of assets held in the SOMA will remain at that level until the FOMC decides to change the directive.

Of course, the portfolio at these levels is unusually large. In the absence of the asset purchase programs, the size of the SOMA portfolio would be around $1 trillion, as required to meet currency demand and other factors. Thus, the Federal Reserve has about $1.6 trillion of additional assets in the portfolio as a result of its asset purchase programs.

The SOMA portfolio also has different characteristics than it would have had in the absence of the asset purchase programs. Most notably, the overall duration of the SOMA portfolio at the end of June was over 4½ years, compared to its historical range of between two and three years.

Together, the larger amount and longer tenor of our securities holdings result in a considerable amount of duration risk in the SOMA portfolio, meaning that the market value of the portfolio is sensitive to movements in interest rates. One measure of this risk that is familiar to market participants is the concept of "10-year equivalents," or the amount of

10-year notes that would produce the same degree of overall interest rate risk. At this time, we have about $1.5 trillion of ten-year equivalents in the SOMA portfolio, which is about $1 trillion above the amount that we would have under our traditional portfolio approach. The majority of this additional risk came from the expansion of the balance sheet, but the extension of its average duration also contributed significantly.[1]

Transferring this additional duration risk to the Federal Reserve's portfolio, and hence out of the portfolios of market participants, was one channel through which the asset purchase program was intended to have its effect on financial conditions. This "portfolio balance" channel has been discussed by Chairman Bernanke on several occasions.[2] This view associates the amount of policy stimulus with the stock of assets, or more precisely with the amount of duration risk, that the Federal Reserve takes onto its balance sheet.

Policy achievements of LSAP2

The purpose of the asset purchase program was to help the Federal Reserve achieve the economic objectives of full employment and stable prices that it was given by Congress. I believe that the program delivered what could have been expected from it. In particular, let me highlight its success along two dimensions.

First, the LSAP2 program made broad financial conditions more accommodative. This conclusion can be drawn from the behavior of financial markets from late August 2010 to the program's implementation date in November 2010 – a period during which market participants moved from seeing such a program as a remote possibility to expecting it with near certainty.[3] Asset price movements over this period included a decline in real interest rates, a narrowing of risks spreads, an increase in equity prices, and a decline in the dollar – exactly the pattern that one would expect to be generated from additional monetary policy accommodation. These changes likely supported economic growth and the creation of employment relative to what would have been realized in the absence of the program.[4]

Second, the LSAP2 program appears to have raised inflation expectations from unusually low levels and reduced the threat of deflation. The downside risks to inflation had become quite threatening by last summer. Breakeven inflation rates had moved to levels that were well below those consistent with the FOMC's mandate, even for forward measures covering periods beginning several years ahead. In addition, the pricing of deflation risk, as computed by looking at Treasury inflation-protected securities with different amounts of accrued inflation, reflecting fairly substantial odds of deflation over the next several years.[5] Since that

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[1] Estimates of the contribution of additional risk coming from the increased size of the portfolio range from 60 percent to 80 percent, while estimates of the impact of its longer duration range from 20 percent to 40 percent.

[2] See, for example, Chairman Ben S. Bernanke (2010), ***"The Economic Outlook and Monetary Policy"***, remarks at the Federal Reserve Bank of Kansas City Economic Symposium, Jackson Hole, Wyoming, August 27.

[3] One would expect market prices to incorporate nearly all of the effects of the programs in advance rather than during the actual implementation of the program. Thus, the period before the November implementation is the most relevant period for assessing the program's effects.

[4] For example, see Chung et al (2011), ***"Have We Underestimated the Likelihood and Severity of Zero Lower Bound Events"*** and Vice Chairman Janet Yellen (2011), ***"The Federal Reserve's Asset Purchase Program"***, remarks at the Allied Social Science Associations Annual Meeting, Denver, Colorado, January 8.

[5] TIPS are designed with a floor of zero on the cumulative inflation adjustment that they can realize over the life of the security. Thus, the prices of securities that are similar to each other in most ways but have different amounts of accrued inflation can be used to derive a measure of the value of this floor, which can then be translated into the probability of deflation.

time, though, breakeven inflation rates have risen back to levels more consistent with the FOMC's mandate, and the perceived risk of deflation has diminished notably.

One criticism that has been directed at the LSAP2 program is that it was unable to restore vigorous growth to the economy. I think this is a reasonable observation but not a strong criticism. It is true that the support to growth provided by the asset purchases appears to have been countered by other factors that have continued to weigh on growth. However, the LSAP2 program was never described as such a potent policy tool that it could ensure a return to robust growth and rapid progress toward full employment in all circumstances.[6]

Despite its limits, the expansion of the balance sheet was seen by the FOMC as the best policy tool available at the time, given the constraint on traditional monetary policy easing from the zero bound on interest rates. The willingness of the FOMC to use this tool is indicative of a central bank that takes its dual mandate seriously and does what it can to deliver on it. The disappointing pace of recovery that has been realized since then suggests that the additional policy accommodation provided by the LSAP2 program was appropriate.

Operational success of LSAP2

Let me now switch from the policy objectives of the LSAP2 program to its implementation by the Desk. The FOMC set the broad parameters of the asset purchase program based in part on input from the Desk on our capacity to conduct operations and the market's capacity to absorb them. In particular, we wanted to complete the asset purchases in a timely manner, but we also wanted to ensure that the pace of purchases was not so rapid as to disrupt the functioning and liquidity of the Treasury market. In the end, I believe the program struck a good balance between these two considerations. I would like to recognize the staff on the Desk for their valuable input to the operational design of the program, as well as the effective implementation of the program over the last eight months.

Our presence in the market was sizable. Over the course of the program, our purchases ran at about the same pace as the total net Treasury supply coming to the market. Moreover, with the completion of the program, the SOMA portfolio holds about 18 percent of the outstanding stock of Treasury securities. Our share of the market is even higher at intermediate maturities, where our purchases were concentrated.

Part of the challenge to the Desk was to structure our operations in a manner that would allow the market to absorb such a large volume of purchases. Several features of the program's design may have helped to promote robust participation by market participants, including the decisions to relax the 35 percent limit on SOMA holdings of individual issues and to include recently issued securities in the range of eligible issues in nearly every operation. These features allowed our counterparties to offer us a wide range of securities at each operation. In the end, dealers participated aggressively, with an average offer-to-cover ratio of over 3.5. Moreover, we managed to execute these purchases at prices that were, on average, at or very near the indicative quotes on these securities that we collect as a pricing reference.

In addition to focusing on the performance of our operations, we have also monitored measures of liquidity in the Treasury market. The market seems to be functioning well despite our sizable presence. Measures such as bid-ask spreads, quote depth, and trading volumes have held relatively steady at favorable levels over the life of the program. Indeed, there are no signs that trading activity has been notably impaired for Treasury coupon

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[6] In my own remarks before the program began, I referred to asset purchases as an "imperfect policy tool" because of the limits on their effectiveness. See Brian Sack (2010), ***"Managing the Federal Reserve's Balance Sheet"***, remarks at the 2010 CFA Institute Fixed Income Management Conference, Newport Beach, California, October 4.

securities, even in those issues for which our holdings are particularly high.[7] Moreover, the market has not encountered any meaningful problems with delivery and settlement of Treasury securities.[8]

Lastly, I should note that the market seems to have adjusted fairly well so far to the end of the purchase program. The pace of the Desk's purchases fell back sharply at the end of June, as we moved from expanding the portfolio to simply reinvesting principal payments. In particular, our purchases slowed from an average pace of about $100 billion per month through June to an anticipated pace of about $15 billion per month going forward. We do not expect this adjustment to our purchases to produce significant upward pressure on interest rates or a tightening of broader financial conditions, given our view that the effects of the program arise primarily from the stock of our holdings rather than the flow of our purchases. While there has been considerable volatility in Treasury yields over the past several weeks, we attribute those movements primarily to incoming economic data and to broader risk events. However, we will continue to watch the markets and assess their adjustment to the end of the purchase program.

Future evolution of the SOMA portfolio

While I am sure you are happy to hear more about our actions to date, I realize that you may be even more interested in the evolution of the SOMA portfolio going forward. Just to be clear, I will not be saying anything about the likelihood of prospective policy actions beyond what has been conveyed in FOMC communications. However, I would like to make a few points about the portfolio under those prospective actions.

As noted earlier, the current directive from the FOMC is to reinvest principal payments on the securities we hold in order to maintain the level of domestic assets in the SOMA portfolio. This approach can be interpreted as keeping monetary policy on hold. Indeed, one can generally think of the stance of monetary policy in terms of two tools – the level of the federal funds rate, and the amount and type of assets held on the Federal Reserve's balance sheet. The FOMC has decided to keep both of these tools basically unchanged for now.

Given the considerable amount of uncertainty about the course of the economy, market participants have observed that the next policy action by the FOMC could be in either direction. If economic developments lead the FOMC to seek additional policy accommodation, it has several policy options open to it that would involve the SOMA portfolio, as noted by Chairman Bernanke in his testimony last week. One option is to expand the balance sheet further through additional asset purchases, with the just-completed purchase program presenting one possible approach. Another option involves shifting the composition of the SOMA portfolio rather than expanding its size. As noted earlier, a sizable portion of the additional risk that the SOMA portfolio has assumed to date came from a lengthening of its maturity, suggesting that the composition of the portfolio can be used as an important variable for affecting the degree of policy stimulus. Lastly, the Chairman mentioned that the FOMC could give guidance on the likely path of its asset holdings, as the effect on

[7] Liquidity in Treasury bills has worsened to some degree. However, our holdings in that sector are minimal, and hence the deterioration likely reflects other factors, including the decline in the supply of Treasury bills.

[8] The Federal Reserve's holdings of Treasuries have removed a large amount of Treasury collateral from the market, which may have contributed to downward pressure on general collateral Treasury repo rates. However, repo rates do not appear unusual relative to other short-term interest rates, and most market participants point to declines in the supply of Treasury bills, rather than the coupon securities that the Fed purchased, as the primary driver. In terms of shortages in the supply of individual Treasury securities, our securities lending program appears to have generally relieved any such shortages that have resulted from our holdings.

financial conditions presumably depends on the period of time for which the assets are expected to be held.

Alternatively, economic developments could instead lead to a policy change in the direction of normalization. The FOMC minutes released last week provided valuable information on the sequence of steps that might be followed in that case. The minutes indicated that the removal of policy accommodation was expected to begin with a decision to stop reinvesting some or all of the principal payments on assets held in the SOMA. If all asset classes in the SOMA were allowed to run off, the portfolio would decline by about $250 billion per year on average over the first several years.

Under the interpretation of the policy stance noted earlier, this shrinkage of the balance sheet would amount to a tightening of policy.[9] However, one should realize that this step represents a relatively gradual and limited policy tightening. Indeed, using the mapping that has been discussed by Chairman Bernanke, this path for the balance sheet would, in terms of its effects on the economy, be roughly equivalent to raising the federal funds rate by just over 25 basis point per year over the course of several years.

The minutes also described asset sales as part of the strategy, indicating that this step would likely occur relatively late in the normalization process. From the perspective of the balance sheet and the stance of monetary policy, sales accomplish the same thing as redemptions, as they also shrink the balance sheet over time. The minutes indicated that such sales are likely to be gradual and predictable, which makes them even more similar in nature to redemptions.

Together, the combination of asset redemptions and asset sales, once underway, should put the size of the portfolio on a path to a more normal level over several years. Thus, they represent an important part of the normalization of the policy stance. However, if the approach follows the gradual and predictable path described by the minutes, one can think of this adjustment as a relatively passive part of the policy tightening. In these circumstances, adjustments to the federal funds rate would generally be the active policy instrument, responding as needed to economic developments.[10]

The sequence of policy steps described in the minutes indicates how the size of the SOMA portfolio is likely to be normalized. However, simply reducing the size of the portfolio would still leave its duration at historically elevated levels. The FOMC might decide it was happy with this outcome, or it could decide at some stage to renormalize the duration of the portfolio as well. Depending on the precise timing of the steps that will occur in the exit sequence, there will likely be opportunities to do so. For example, there is a good chance that the Desk will still be selling MBS at the time when the SOMA portfolio gets back to its normal size.[11] In such circumstances, the Federal Reserve would have to then engage in sizable Treasury purchases to offset the ongoing sales of MBS and to expand the SOMA portfolio as needed to meet currency demand and other factors. This period of Treasury purchases would allow the FOMC to rebuild its Treasury portfolio with the maturity structure that it sees as optimal.

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9 This view was expressed by Chairman Bernanke in the press conference following the April 2011 FOMC meeting.

10 Of course, the minutes also noted that the path of sales could also be adjusted up or down in response to material changes in the economic outlook or financial conditions.

11 In this scenario, the Treasury portfolio, through redemptions of maturing assets, would have fallen below the levels that will be required once the SOMA portfolio has been fully normalized. This outcome would be intended to get the overall size of the balance sheet down more quickly, with a view that Treasury redemptions are an effective tool for doing so relative to more rapid sales of MBS.

Prospects for SOMA income

The path of the balance sheet that is realized, along with the evolution of the term structure of interest rates, will determine the stream of income that will be realized from the SOMA portfolio.[12] It is important to note that this income is not the objective of the asset purchase programs. The income from the SOMA portfolio is instead a byproduct of policy decisions taken by the FOMC to promote its economic mandate of full employment and price stability. However, because there seems to be considerable interest in the income produced by the portfolio, let me touch on it briefly.

Given the uncertainty about how the balance sheet and interest rates may evolve, there is a wide range of outcomes for the income stream from the SOMA portfolio.[13] At this point, if interest rates and the balance sheet were to unfold in the manner that appears to be expected by market participants, the asset purchase programs should produce a substantial amount of cumulative income. The SOMA Annual Report for 2010 presents some projections for the portfolio income under an illustrative set of assumptions for the evolution of interest rates and the balance sheet.[14] Under that projection, the portfolio produces about $500 billion of cumulative income over the period from 2009 to 2018, which is about $90 billion in excess of what we project would have been realized in the absence of asset purchases.

Of course, the realized stream of income could differ substantially from these projections, depending on how interest rates and the balance sheet evolve. In any event, it is worth repeating that the realized income is much less important than the economic outcomes that are achieved from the programs.

Conclusion

I hope these comments have provided you with some insights into how the SOMA portfolio has been managed to date and some perspectives on its evolution going forward. In general, the Federal Reserve will continue to have a meaningful presence in the Treasury market and in the agency debt and agency MBS markets for a number of years. However, with effective communications about potential balance sheet actions and careful implementation of any such actions by the Desk, the markets should be able to adjust to the evolution of the SOMA portfolio without considerable problems.

Thank you.

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[12] All SOMA income is remitted to Treasury after paying for the operating expenses and capital needs of the Federal Reserve.

[13] Of course, the Federal Reserve is being compensated for assuming this risk in the same manner as other market participants, because the assets were obtained at market prices that embed premiums for the various risks involved. Our presence in the market likely reduced these risk premiums, but they appear to have remained positive on average for the assets purchased.

[14] See ***"Domestic Open Market Operations During 2010"***, a report by the Markets Group of the Federal Reserve Bank of New York, March 2011.