

For release on delivery
5:00 p.m. EST
November 30, 2012

Remarks by

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at

The Third Boston University/Boston Fed Conference on Macro-Finance Linkages

Boston, Massachusetts

November 30, 2012

Given that the conference theme is macro-finance linkages, I thought I would try to lay out a corporate finance perspective on large-scale asset purchases (LSAPs). I have found this perspective helpful in thinking both about the general efficacy of LSAPs going forward, and about the differential effects of buying Treasury securities as opposed to mortgage-backed securities (MBS). But before I get started, please note the usual disclaimer: The thoughts that follow are my own and do not necessarily reflect the views of other members of the Federal Open Market Committee (FOMC). I should also mention that these comments echo some that I made in a speech at Brookings last month.¹ As I noted in that speech, I support the Committee's decision to purchase mortgage-backed securities (MBS) at a rate of \$40 billion per month, in tandem with the ongoing maturity extension program in Treasury securities, and its plan to continue with asset purchases if the Committee does not observe a substantial improvement in the outlook for the labor market.

I will start with the case of Treasury LSAPs, and then go on to discuss the differences that arise when the Fed purchases MBS instead. One thing that seems clear in the data is that if you buy a lot of long-term Treasury securities, this exerts significant downward pressure on their yields and term premiums. Indeed, the Fed's past actions are likely one important reason why Treasury term premiums are now near historic lows, on the order of minus 80 basis points, according to a model used by the Board staff.² Moreover, while this is not entirely uncontroversial, my own reading of the evidence is

¹ See Jeremy C. Stein (2012), "Evaluating Large-Scale Asset Purchases," speech delivered at the Brookings Institution, Washington, October 11, www.federalreserve.gov/newsevents/speech/stein20121011a.htm.

² See Don H. Kim and Jonathan H. Wright (2005), "An Arbitrage-Free Three-Factor Term Structure Model and the Recent Behavior of Long-Term Yields and Distant-Horizon Forward Rates," Finance and Economics Discussion Series 2005-33 (Washington: Board of Governors of the Federal Reserve System, August), www.federalreserve.gov/pubs/feds/2005/200533/200533pap.pdf.

that there has also been substantial pass-through to corporate bond rates. Based on this evidence, a reasonable estimate is that, if the Fed were to undertake an additional \$500 billion Treasury LSAP, both long-term Treasury and corporate bond rates might be expected to decline by something on the order of 15 to 20 basis points.

This observation leads to an important conceptual question: How should one expect a firm to respond when its long-term borrowing costs fall not because of a change in the expected future path of short-term rates--as would be the case with a conventional monetary easing--but rather because of a change in the term premium? By way of a benchmark, it should be emphasized that many macro models--including the Fed staff's FRB/US model--implicitly treat the two sorts of shocks as having similar effects on corporate investment. But is there any reason to believe that, in reality, the response to the two might differ?

A basic corporate finance analysis suggests the answer may be yes--and, in particular, that a shock to the term premium is more likely to elicit a financing response on the part of firms, as opposed to a change in their capital spending plans. To see why, consider the following example. A firm faces a rate on its 10-year bonds of 2 percent. At the same time, it expects that the sequence of rolled-over short-term rates over the next 10 years will average 3 percent. Hence, there is a term premium of minus 1 percent. What should the firm do? Clearly, it should take advantage of the cheap long-term debt by issuing bonds. But if the firm is not facing a binding financing constraint, it is less obvious that the bargain 2 percent rate on these bonds should exert any influence on its capital spending plans. After all, it can use the proceeds of the bond issue to pay down short-term debt, repurchase stock, or buy short-term securities. These capital-structure

adjustments all yield an effective return of 3 percent. As a result, the hurdle rate for new investment should remain pinned at 3 percent. In other words, the negative term premium matters a lot for financing behavior, but in this stylized world, investment spending is decoupled from the term premium and is determined instead by the expected future path of short rates.

This reasoning suggests why one might expect future rounds of Treasury-based LSAPs to have diminishing returns, at least for corporate investment. As noted earlier, the data make clear that past rounds of LSAPs have pushed down interest rates and term premiums. But the further the term premium is driven into negative territory, and the more financing constraints are thereby relaxed, the more the previous logic comes into play, and hence the weaker is likely to be the response of aggregate spending to further downward pressure on long-term rates.

The corporate finance example is also consistent with what we have observed in markets in recent months. Issuance of both investment-grade and high-yield bonds has been robust. Indeed, domestic nonfinancial corporate bond issuance is on pace to set a record in 2012, and the speculative-grade segment appears on track to register a new high for the year. At the same time, a large fraction of issuance has been devoted to refinancing--either to retiring existing debt or to payouts to equity holders via dividends and share buybacks. These uses of proceeds have accounted for about two-thirds of all issuance by speculative-grade firms so far this year. Such patterns are what one would expect based on the logic I have just discussed.

Another way to make a similar point is to note that as borrowing costs have fallen, Federal Reserve staff estimates of the expected return on the stock market (using a model

based on analysts' earnings expectations) remain high by historic standards. This unusually large divergence in the costs of debt and equity--due in part to the cumulative effects of our LSAP policies--is likely to be one factor that makes debt-financed repurchases of equity attractive.

Let me turn now from Treasury-based LSAPs to those involving MBS. If there is to be any difference between the two, one necessary condition is that there is some form of market segmentation, so that buying MBS has a different effect on the constellation of credit-market rates than buying Treasury securities--in other words, it's not all about just removing a certain amount of undifferentiated duration from the market. Judging by what happened in the wake of the Committee's policy announcement on September 13, this segmentation condition seems to be clearly satisfied--indeed, I would say surprisingly so.³ In particular, while nominal long-term Treasury yields were roughly unchanged on the day of the announcement, yields on MBS fell dramatically. Moreover, although the pass-through to primary mortgage rates has been more gradual, it too has been significant to date. According to Freddie Mac's primary mortgage market survey, the rate on 30-year fixed-rate mortgages has come down by more than 20 basis points since the September announcement, and is now near historic lows.

One way to say it is that, given the nature of market segmentation, MBS purchases appear to trade off of some amount of breadth of effect across markets for a more pronounced effect in a single market--namely, the mortgage market. What, then, are the implications for the transmission mechanism? Clearly, it depends on the sensitivity of different forms of spending to changes in rates. If, per my previous

³ See Board of Governors of the Federal Reserve System (2012), "Federal Reserve Issues FOMC Statement," press release, September 13, www.federalreserve.gov/newsevents/press/monetary/20120913a.htm.

example, corporate investment reacts only weakly to further changes in term premiums, there may be more “kick” to be had by focusing efforts on a sector that is more responsive.

Moreover, it seems plausible that households’ spending behavior will in fact be more strongly affected by changes in the mortgage rate. As compared with many of the large firms that are active in the corporate bond market, one might expect a greater proportion of households to behave as if they are financially constrained. Hence, a reduction in the cost of mortgage borrowing might be expected to allow households to spend more, either on a new home or by using the proceeds from a mortgage refinancing for non-housing consumption.

The bottom line is that I suspect that mortgage purchases may confer more macroeconomic stimulus dollar-for-dollar than Treasury purchases. This is of course, not to say that Treasury purchases have no effect on the real economy; research has found that in addition to moving bond prices, they are associated with increases in stock prices, which in turn can have wealth effects on consumption and investment.

Interestingly, however, to the extent that Treasury purchases trigger a financing response on the part of firms, as opposed to an investment response, they may have something of an unintended benefit for financial stability. A major source of problems during the recent crisis was the excessive maturity transformation undertaken by financial firms. Put simply, these firms were relying too much on short-term debt. One of the thrusts of regulatory reform has been to attack this problem--for example, via the constructs of the Liquidity Coverage Ratio and the Net Stable Funding Ratio that are a part of Basel III. However, a complementary way to deal with the problem is to

influence the underlying incentives for short-term debt issuance. And these incentives are in turn shaped by the structure of rates and term premiums in the market.

As I noted earlier, a natural response for any firm facing an unusually low term premium is to adjust its capital structure by issuing cheap long-term debt to replace its shorter-term debt. It is therefore not surprising that the average debt maturity of large nonfinancial firms has increased notably over the past few years. Moreover, the same pattern shows up among large financial firms--they too have been significantly lengthening their average debt maturity.

The current cheapness of long-term debt contrasts with the pre-crisis configuration, where frequently a pronounced premium favored issuers not at the long end of the yield curve, but at the very short end. In other words, the fact that the yield curve often tended to be steeply upward sloping at the front end gave financial firms a strong incentive to issue overnight paper. Thus I suspect that LSAPs have, by changing the structure of term premiums in the market, helped encourage an extension of debt maturity by both financial and nonfinancial firms. All else being equal, this development is a good thing from a financial stability perspective.

To conclude: A corporate finance perspective on LSAPs suggests that when monetary policy works by moving term premiums, as opposed to moving expectations about the future path of short rates, the transmission to the real economy may be altered in important ways. These differences can have implications for how we think about the benefits of a policy action, its costs, and even its consequences for financial stability.

Thanks very much, and I look forward to your questions.