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The Effects of Large-Scale Asset Purchases on TIPS Inflation Expectations

Massimo Guidolin, *Assistant Vice President and Economist*
Christopher J. Neely, *Assistant Vice President and Economist*

Policymakers have recently debated whether the U.S. economy may be falling into a Japanese-style *deflationary trap*.[1] Deflation is a persistent decline in the general level of prices. There is some debate as to whether deflation is responsible for a growth slowdown, or whether it is merely a symptom of other factors contributing to slow growth. Some economists believe deflation slows growth by keeping the real rate of interest—the nominal interest rate less the inflation rate—excessively high. If the latter is true, one way to promote consumer and investment demand is to lead people to expect at least small amounts of inflation.

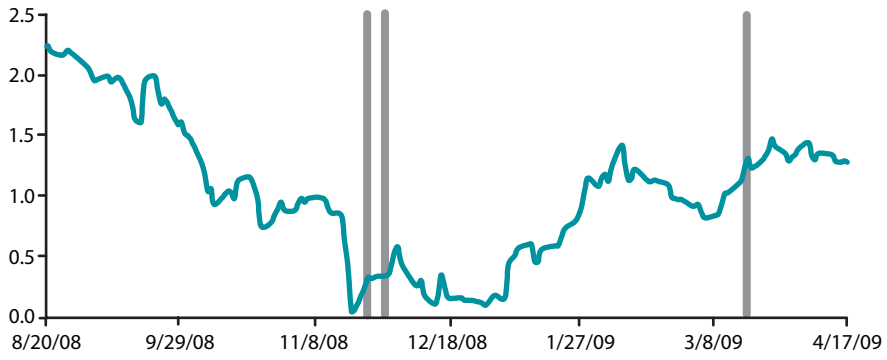
One proposal to avoid the adverse consequences of deflation suggests that a large monetary stimulus to create "healthy" (positive) inflation expectations may reduce real interest rates and thus promote growth. In particular, analysts have suggested the Federal Open Market Committee (FOMC) should reprise its large-scale asset purchases (LSAPs) of Treasuries and mortgage-backed securities. Their rationale is that LSAPs have successfully reduced the nominal yields on medium- and long-term Treasuries by 50 to 70 annualized basis points. These lower yields directly lower the cost of government borrowing and stimulate investment and consumption by households and firms. LSAPs could also reduce real rates by increasing inflation expectations.

Have the announcements of past asset purchases raised inflation expectations? To find out we examine expectations from 10-year Treasury Inflation-Protected Securities (TIPS) in two-day windows around three important Fed LSAP announcement dates.[2] We equate the nominal yield on 10-year Treasury notes with the real yield of 10-year TIPS to compute "break-even" (TIPS-implied) inflation expectations. We use a two-day window because research shows market participants require more time to fully react to news open to interpretation.[3]

Large-scale asset purchases may have limited power to raise TIPS-implied inflation expectations—something that might appeal to policymakers fighting deflation.

The figure plots TIPS-implied inflation expectations between August 2008 and April 2009. The figure and the table shows that inflation expectations appear to react modestly to LSAP announcements, between 7 and 18 basis points per annum.[4] The March 18, 2009, FOMC announcement appears to have increased 10-year expected annual inflation by 18 basis points. Numbers in parentheses in the

10-year TIPS Inflation Expectation (annual percentages)



Note: Vertical bars indicate LSAP announcement dates. See footnote 2.

Two-Day Reaction of 10-Year TIPS Inflation Expectations to LSAP Announcements

	November 25, 2008	December 1, 2008	March 18, 2009	Sum
Implied 10-year break-even inflation rate (basis points)	7 (0.16)	9 (0.11)	18 (0.03)	34 (0.01)

NOTE: Pseudo *p*-values are in parentheses. See Christopher Neely, "The Large Scale Asset Purchases Had Large International Effects." Working paper 2010-018A, Federal Reserve Bank of St. Louis, July 2010; http://research.stlouisfed.org/wp/2010/2010-018.pdf.

table indicate the proportion of two-day changes between June 2005 and May 2010 that were larger in absolute value than the observed change. For example, for March 18, expectations increased or decreased more than 18 basis points in only 3 percent of all possible two-day windows; thus it is unlikely this increase occurred by chance. However, the November 25 and December 1 changes are small and possibly unrelated to the announcements. Although the 34-basis-point sum of the effects is not negligible, these effects do not necessarily correspond to the final, permanent reactions of inflation expectations, and disentangling the net, long-run effects of policy actions and normal market volatility remains difficult. Inflation expectations appear to rise after the announcements, which implies LSAPs may have limited power to raise TIPS-implied inflation expectations—something that might appeal to policymakers fighting deflation. ■

[1] See James Bullard, "Seven Faces of 'The Peril,'" Federal Reserve Bank of St. Louis *Review*, September/October 2010, *92*(5) pp. 339-52; http://research.stlouisfed.org/publications/review/10/09/Bullard.pdf.

[2] November 25, 2008: LSAPs announced; December 1, 2008: Chairman Bernanke acknowledges possible Fed purchases of longer-dated Treasuries; March 18, 2008: The FOMC commits to buy up to $300 billion of Treasuries and expand its agency and mortgage-backed securities purchase program.

[3] See 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; www.newyorkfed.org/research/staff_reports/sr441.pdf.

[4] Analysis of the two-day effect of the same announcements on 5-year TIPS-implied inflation expectations yields reveals one large, positive effects—216 basis points for the December 1, 2008, announcement. This seems like an implausible reaction and is likely primarily due to peculiar pricing of the securities during a period of market turmoil.

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