Some Empirical Evidence on the Effectiveness of Monetary Policy at the Zero Bound

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Easing Options: What's Next and After That!

- Restart LSAPs* (on deck)

- Signal a still-later tightening (communication)

- Announce an explicit inflation objective

- Price level (average inflation) target

- Money-financed fiscal stimulus

- Target the ten-year Treasury yield

- Raise the inflation objective, temporarily

- Re-invoke 13(3)

*Large-Scale Asset Purchases

Effect of Additional Purchases of Treasury Securities

Effect on the Ten-Year Treasury Yield of $400 Billion of Purchases by the FOMC

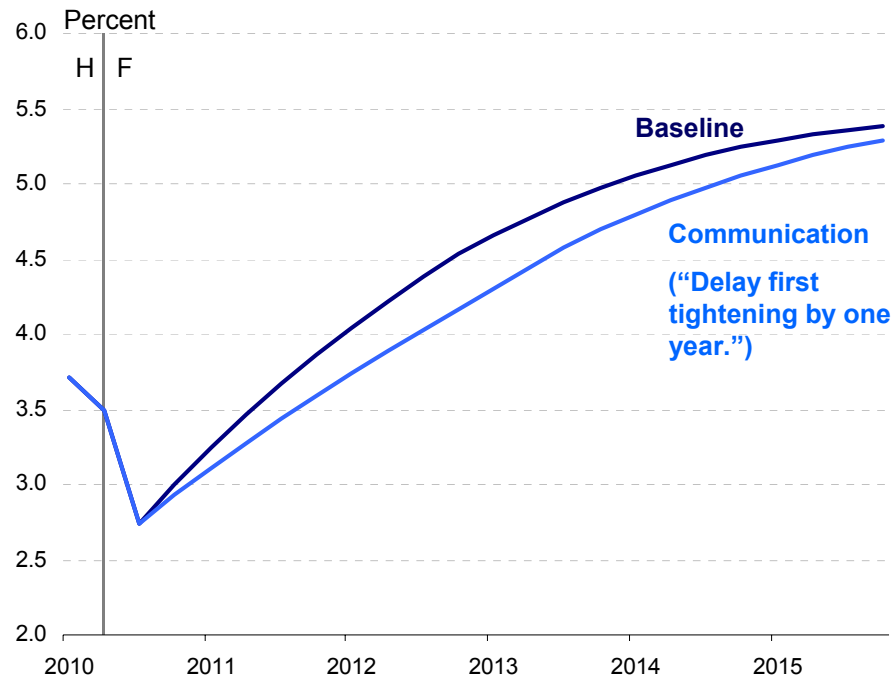| Study	Estimated Effect (bps)
Macroeconomic Advisers*	13
Gagnon *et al**	13
Hamilton-Wu	14

*We computed these estimates from the midpoints of ranges cited by the authors.

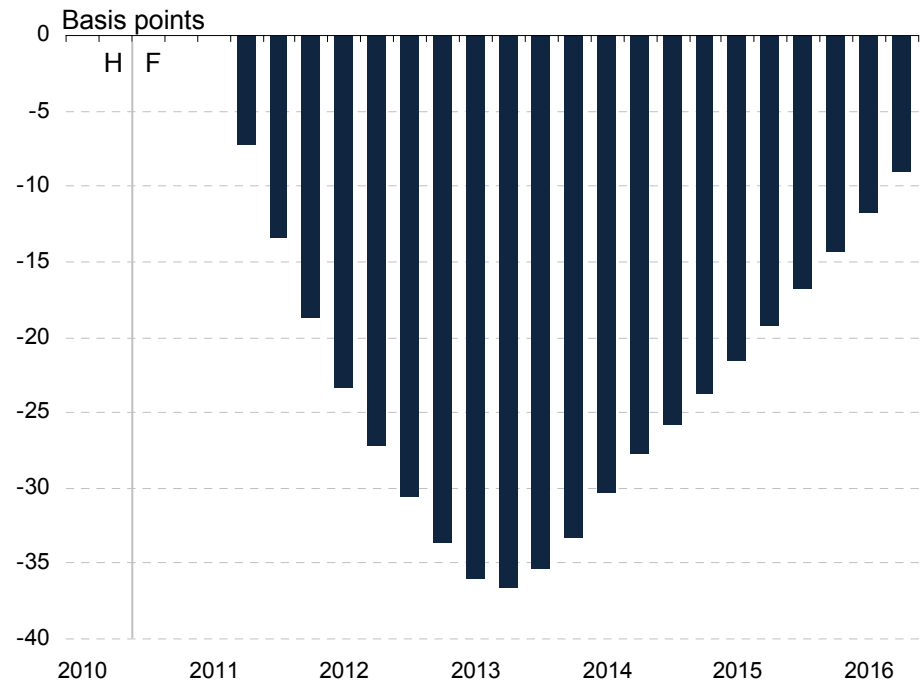Sources: Macroeconomic Advisers, Gagnon *et al*, and Hamilton-Wu.

The Power of Communication

Ten-Year Treasury Yield

Percent

H F

Baseline

Communication ("Delay first tightening by one year.")

Change in Ten-Year Treasury Yield

Basis points

H F

Federal Reserve Balance Sheet: QE or CE?

Sources: Federal Reserve, Macroeconomic Advisers. Updated October 7, 2010.

Effect of $1.75T of Asset Purchases: An Event Study

+1.75 Trillion

-50 bps

March 18, 2009

Treasuries +$300B

March 18, 2009

MBS +$750B

Agency Debt +$100B

-29 bps   March 18, 2009

November 25, 2008

MBS +500B

Agency Debt +$100B

-9 bps   December 1, 2008

-12 bps   November 25, 2008

Source: Macroeconomic Advisers. Prepared June 17, 2010.

Effect of the March 2009 FOMC Announcement

Regression Results

Regression Results for the March 2009 Announcement

Dependent Variable: Daily Change in Ten-Year Treasury Yield

	(1)	(2)
Change in two-year OIS rate	2.163	1.827
	(6.734)	(11.491)
Dummy variable		-29.077
		(-15.240)
R-squared	0.691	0.795

Note: Heteroskedasticity- and autocorrelation-consistent t-statistics in parentheses. The dummy variable is set to one on the day of the event, and zero elsewhere. Changes in the Treasury yield and the OIS rate are measured in basis points.

Regression Residuals
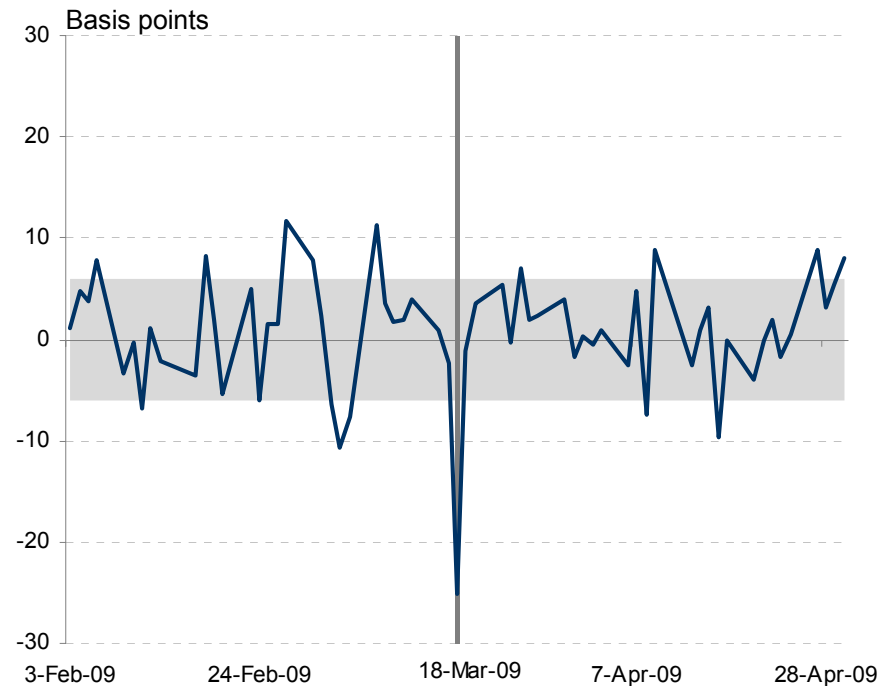
Effects of Earlier FOMC Communications

Change in Ten-Year Yield

One-Day Change in the Ten-Year Treasury Yield

Event Date	(bps)
March 18, 2009 (FOMC Announcement)	-51
November 25, 2008 (FOMC Announcement)	-24
December 1, 2008 (Bernanke Speech)	-21
Total	**-96**

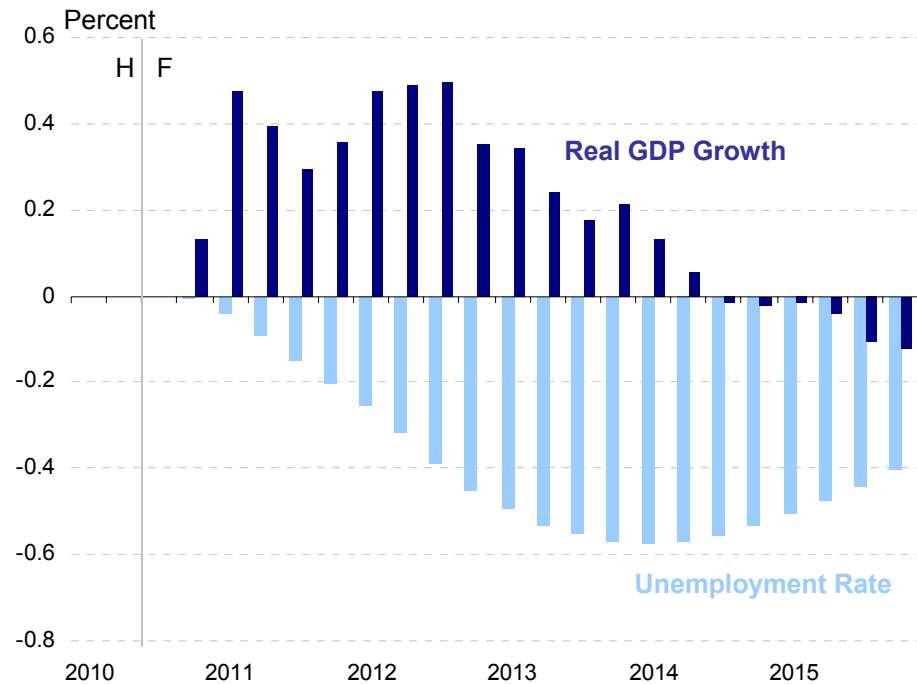Source: Federal Reserve.

Regression Results

Regression Results for the November 2008 FOMC Announcement and the December 2008 Bernanke Speech

Dependent Variable: Daily Change in Ten-Year Treasury Yield

	November 25, 2008 FOMC Announcement		December 1, 2008 Bernanke Speech	
	(1)	(2)	(3)	(4)
Change in two-year OIS rate	0.937	0.891	0.998	0.960
	(6.136)	(6.037)	(6.220)	(5.694)
Dummy variable (Nov. 25, 2008)		-11.706		
		(-5.748)		
Dummy variable (Dec. 1, 2008)				-8.714
				(-4.038)
R-squared	0.430	0.451	0.410	0.422

Note: Heteroskedasticity- and autocorrelation-consistent t-statistics in parentheses. Each dummy variable is set to one on the day of the event, and zero elsewhere. Changes in the Treasury yield and the OIS rate are measured in basis points.
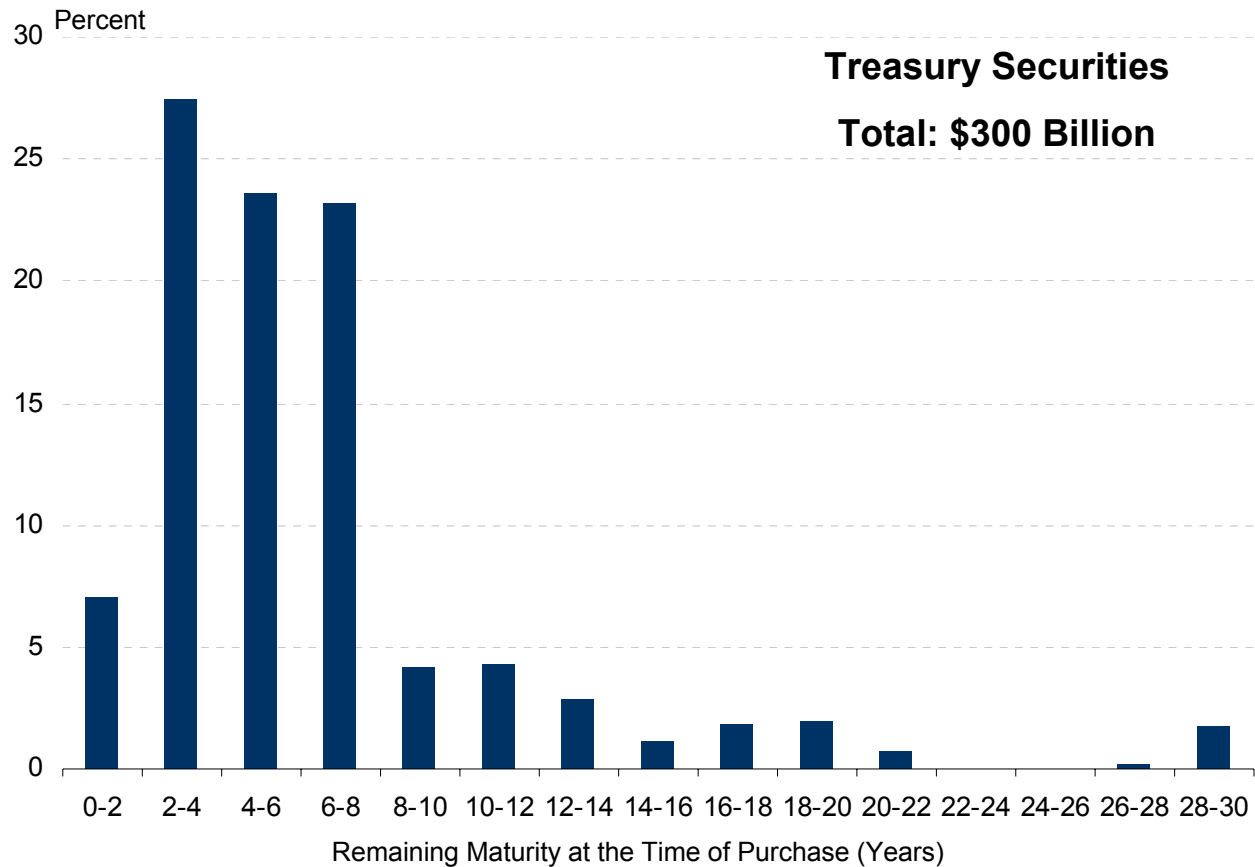
Estimated Macro Effect of $2 Trillion of LSAPs

Change in GDP Growth and Unemployment

Real GDP Growth

Unemployment Rate

Change in Core PCE

With LSAPs

No LSAPs

We assume that LSAPs will have the same effect on the ten-year yield as they did in the first round.

Source: Macroeconomic Advisers. Updated September 8, 2010.

Maturity Distribution of Earlier LSAPs

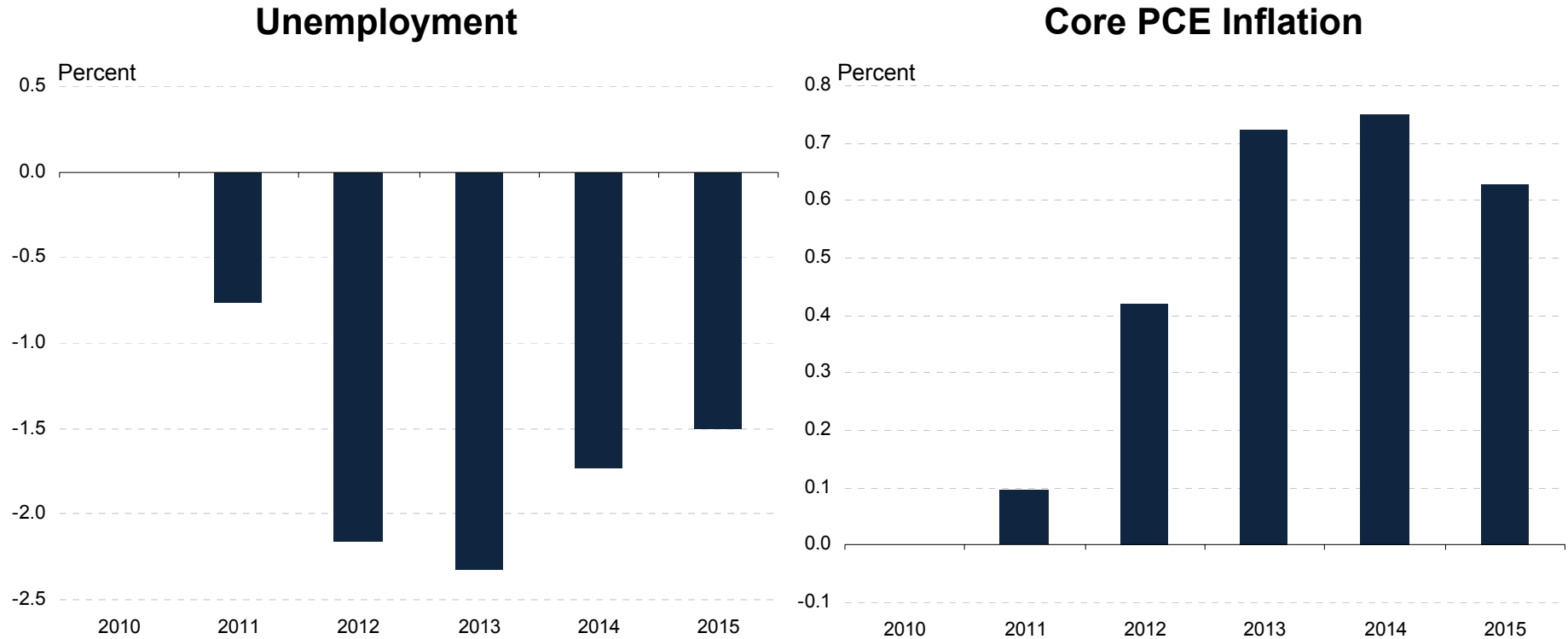
Treasury Securities

Total: $300 Billion

Remaining Maturity at the Time of Purchase (Years)

Source: Federal Reserve Bank of New York and Macroeconomic Advisers. Updated October 12, 2010.

Effect of Payroll Tax Holiday

Unemployment

Percent

Core PCE Inflation

Percent

Source: Macroeconomic Advisers. Updated October 6, 2010.

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