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Has Forward Guidance Been Effective?

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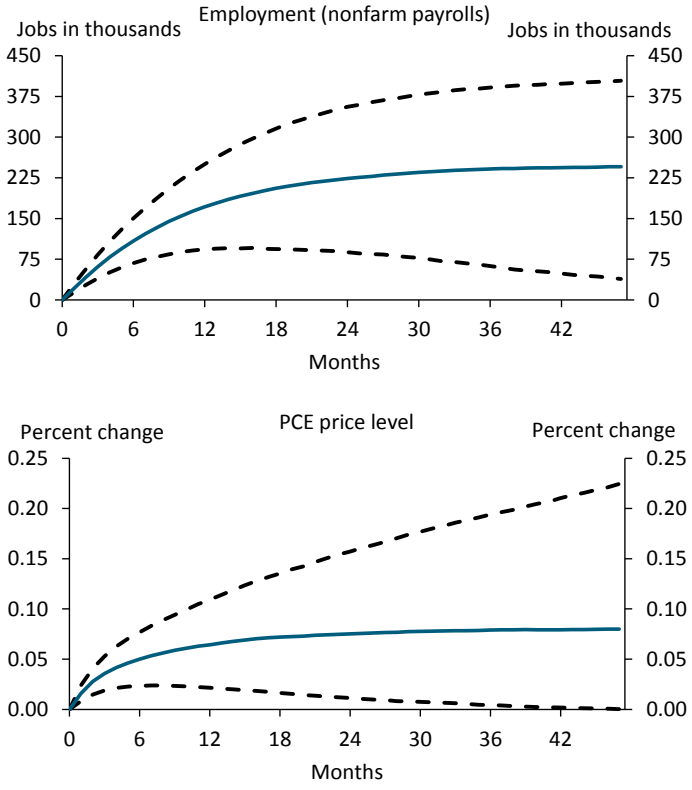
When the federal funds rate became constrained by its effective lower bound, the Federal Open Market Committee turned to unconventional measures such as forward guidance to fulfill its dual mandate. We find forward guidance announcements that lower the expected path of the federal funds rate have a significant stimulatory effect on employment and inflation. However, changes in the size and composition of the Federal Reserve's balance sheet that accompanied many forward guidance announcements may also have played an integral role in generating these estimated effects.

Over the past six years, the Federal Reserve's traditional monetary policy instrument, the federal funds rate, has been stuck at its effective lower bound. During this time, the Federal Open Market Committee turned to unconventional policies such as forward guidance to promote its policy objectives. But has forward guidance been effective?

Forward guidance has strong theoretical foundations (see, for example, Woodford), but capturing its practical effects on the macroeconomy has been difficult (see, for example, Campbell and others). We use a structural vector autoregression (VAR) to measure the effects of forward guidance on the economy, focusing specifically on how announcements about the future path of the federal funds rate, measured using the change in the price of federal funds futures contracts around FOMC meetings, affect employment and inflation.

Chart 1: Responses to a forward guidance shock that lowers expected future interest rates



Note: The x-axis measures the months since the forward guidance shock. The solid line represents the median response, and the dashed lines are 68 percent confidence bands to a one standard deviation forward guidance shock.
Sources: Chicago Board of Trade, Bureau of Labor Statistics, Bureau of Economic Analysis, and authors' calculations

Chart 1 shows the effects of an estimated forward guidance shock that lowers the expected path of policy rates up to 1 year ahead by almost 5 basis points. This unexpected monetary policy accommodation increases employment and prices. The peak effect on employment occurs almost four years after the announcement of lower future interest rates. By that time, the economy accumulates 250,000 extra jobs due to the accommodative policy stance. Forward guidance about lower future rates also puts pressure on prices to rise. Inflation gains accumulate to a nearly 0.1 percent increase in prices two years after the guidance is issued. Together, these responses suggest the FOMC's use of forward

guidance has had an economically significant effect on employment and inflation. However, these macroeconomic effects are not fully felt until several years after the guidance is issued.

One caveat to these conclusions is that our empirical analysis is unable to disentangle the relative contribution of quantitative easing (QE) from the estimated effects of forward guidance. Woodford, among others, suggests QE acts as a signal to the public affirming the FOMC's commitment to its interest rate guidance. This is especially plausible since many forward guidance statements were accompanied by changes in the Federal Reserve's balance sheet (Table 1). For example, the March 2009 announcement extended the duration of "exceptionally low" rates and, simultaneously, expanded the scale and scope of asset purchases.

Table 1: Forward guidance, QE announcements, and market reactions

Date of meeting	Forward guidance (FG) announcement	Quantitative easing (QE) announcement	Market expectations of future rates
Dec. 2008	"… some time"	"Evaluating benefits of purchasing longer-term Treasury Securities"	Decreased
Mar. 2009	"… an extended period"	Expand MBS program to $1.25 trillion and buy up to $300 billion of longer-term Treasury securities	Decreased
Jun. 2013	No separate FG announcement	It may be "… appropriate to moderate the monthly pace of purchases later this year."	Increased
Oct. 2014	No separate FG announcement	QEIII ends	Increased
Dec. 2014	Clock starts on "considerable time"	No QE announcement	Increased

Sources: Federal Open Market Committee Press Releases, Chicago Board of Trade, Thomson-Reuters, and authors' calculations.

QE may amplify the estimated effects of forward guidance through two channels—the "signaling theory" channel and the "portfolio balance" channel. The "signaling theory" of QE suggests that when the FOMC expands its balance sheet, it is signaling its commitment to maintain exceptionally low levels of the target federal funds rate in the future.[1] While we focus on forward guidance by studying the reaction of interest rate futures prices to FOMC statements, concurrent QE announcements could also influence expected future policy rates. However, to the extent QE is perceived as merely a commitment device for forward guidance—as the signaling theory hypothesizes—disentangling the effects of QE from forward guidance would not be necessary, were it possible. In contrast, if QE also operates through a "portfolio-balance" channel, whereby investors replace bonds sold to the Federal Reserve during QE with more risky assets, then the empirical strategy we use may overstate the effects of forward guidance.

We conclude that forward guidance, as practiced by the FOMC since 2008, had qualitatively similar effects on employment and inflation as changes in conventional monetary policy prior to the zero-lower-bound period. Consumers and firms reacted to announced periods of exceptionally low future interest rates by increasing aggregate demand, increasing employment and inflationary pressures in the U.S. economy. However, the accompanying QE announcements may also have played an integral role in generating these estimated effects.

[1] Bauer and Rudebusch, Krisnamurthy and Vissing-Jorgensen, and Woodford present evidence in favor of the signaling theory interpretation of QE.

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