

Economic Outlook

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Asset Purchases' Tapering Significance

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- FOMC members believed market participants overreacted to the “tapering” discussion that began in May 2013.
- Yields on medium-to-longer-term Treasuries rose well above levels consistent with the Fed’s expected path for short-term interest rates.
- Whatever the Fed decides about tapering in the near term, the Fed has clearly signaled that interest rates are likely to remain lower for longer than anticipated by market participants.
- While Yellen makes a strong case that a protracted period of near-zero interest rates would best achieve the Fed’s “dual mandate,” such a path introduces risks to macroeconomic and financial stability.

Is the debate over “tapering” a sideshow that distracts attention from more consequential news emanating from the Federal Reserve? The surprise announcement that the Fed would continue to buy \$85 billion per month in assets is surely important, but so too is the information contained in the Fed’s “Summary of Economic Projections” released the same day, which suggests that short-term interest rates are likely to remain lower for considerably longer than anticipated by market participants. Inordinate focus on asset purchases may lead investors to equate “tapering” with “tightening” and wrongly assume that short-term interest rates will not remain near zero over the next few years.

No “Taper” in September

The surprise decision of the Federal Open Market Committee (FOMC) to maintain asset purchases at an \$85 billion monthly pace perhaps should not have been so surprising in retrospect. The Fed is statutorily obligated to follow a “dual mandate” of price stability and full employment. If the optimal course for monetary policy is one that seeks to minimize deviations from target unemployment and target inflation, the case for “tapering” asset purchases was weak to nonexistent. The fall in the unemployment rate in 2013 is due almost entirely to declines in workforce participation rather than increased hiring. Inflation has remained below the FOMC’s 2% target whether measured by the consumer price index (CPI) or the personal consumption expenditures (PCE) deflator. With both economic and price growth so clearly below target, it would be unusual to expect the Fed to remove monetary policy accommodation.

Yet the “consensus” rationally anticipated a \$10 billion reduction in the pace of asset purchases (to \$75 billion per month)¹ because statements by Fed officials invited that expectation. In June, both Chairman Bernanke and Governor Jeremy Stein suggested that the bond buying program would likely be *completed* when unemployment declined to 7%, which is just 0.3% below the rate recorded in August.² Additionally, in the aftermath of 2007-2009, risks to financial stability

¹ Bloomberg Survey, FOMC Meeting Announcement, September 18, 2013.

² Bernanke, Chairman’s Press Conference, June 19, 2013. Stein, J. (2013), “Comments on Monetary Policy,” June 28, 2013.

were thought to loom as large to monetary policy decision-making as risks to price stability. A slight reduction in the pace of asset purchases would help to create a “glide path” for portfolio rebalancing and reduce the risk of an abrupt sell-off or an eventual crisis.

Instead, it seems clear that FOMC members believed market participants “overreacted” to the tapering discussion that began in May 2013. The increase in yields on Treasury notes maturing in three-to-ten years appeared much too large relative to the Fed’s expected path for interest rates over that period. Between May and early September, three, five, seven, and ten year Treasury yields increased by 67, 120, 138, and 132 basis points, respectively.³ Talk of tapering either caused investors to anticipate rate increases much sooner and more rapidly than the Fed intends, or the “noise” surrounding tapering increased the premium investors demand for bearing the risk of unanticipated increases in interest rates.

QE as “Forward Guidance”

As Chairman Bernanke has emphasized,⁴ asset purchases are only one of two new policy tools the Fed employs now that the fed funds rate has been reduced to zero. The other is “forward guidance,” which is information about the likely path for the fed funds rate conditional on economic developments. In addition to an explicit commitment in the FOMC Statement to keep the fed funds rate at zero *at least* until the unemployment rate is 6.5%, the Fed also provides guidance through quarterly Summary of Economic Projections (SEP), which includes forecasts of the future fed funds rate in the context of expectations for GDP, unemployment, and inflation.

According to the September 18 economic projections, the median FOMC member anticipates that the fed funds rate will finish 2013 and 2014 at (effectively) 0% before increasing to 1% at the end of 2015 and 2% at the end of 2016. Eight of 17 members (47%) anticipate the appropriate fed funds rate will be below 1% over two years from now and 14 of 17 members (82%) expect the appropriate fed funds rate will be 2.75% or less at the end of 2016. Perhaps more interesting than the forecasts themselves is that these rates are expected to prevail in the context of a rapidly improving economy: the median FOMC member anticipates GDP growth to average 3% in 2014 and 2015 and expects the economy to return to full employment by the end of 2016. A 2% fed funds rate in the context of an economy firing on all cylinders is a conspicuous sign that the Fed intends to keep rates much lower than contemplated by market participants.

Although quantitative easing is normally understood to boost asset prices by changing the relative supply of investible assets and forcing investors to rebalance portfolios, it can also serve as an important complement to forward guidance by increasing the credibility of FOMC commitments. If the FOMC believes that 7-year interest rates are too high relative to the path for short-term rates over seven years, for example, the best way to express that view to market participants is to buy 7-year Treasuries at prices that only make sense if the fed funds rate remains low over that period. Since the Fed would suffer large capital losses if it later failed to honor its commitment to low rates,⁵ QE augments forward guidance by forcing the Fed to “put its money where its mouth is.”

The “Optimal Control Path” for Monetary Policy

While some could dismiss the Fed forecasts as Panglossian incoherence – excessive optimism on both rates and GDP growth that cannot be reconciled with one another – they are perfectly consistent with a series of

³ U.S. Treasury, Yield Curve Rates.

⁴ C.f. Bernanke, B. (2013), The Economic Outlook, Testimony before the Joint Economic Committee, May 22, 2013.

⁵ Clouse, J. et al. (2000), “Monetary Policy When the Nominal Short-Term Interest Rate is Zero,” Federal Reserve Board of Governors Working Papers.

papers and speeches delivered by Fed Vice Chair Yellen on “optimal control” path for the federal funds rate.⁶ Yellen uses a dynamic general equilibrium model to demonstrate that the path of the fed funds rate that minimizes deviations from target rates of unemployment and inflation is one that keeps the fed funds rate significantly below current market expectations. Specifically, a November 2012 paper shows that the optimal policy would keep the fed funds rate at 1% through the end of 2016. Under this simulated path, the economy returns to full employment by the end of 2016 and inflation averages about 0.25% above the Fed’s 2% target for five years (2014-2018).

Figure 1: Implied Future Short Term Interest Rates⁷

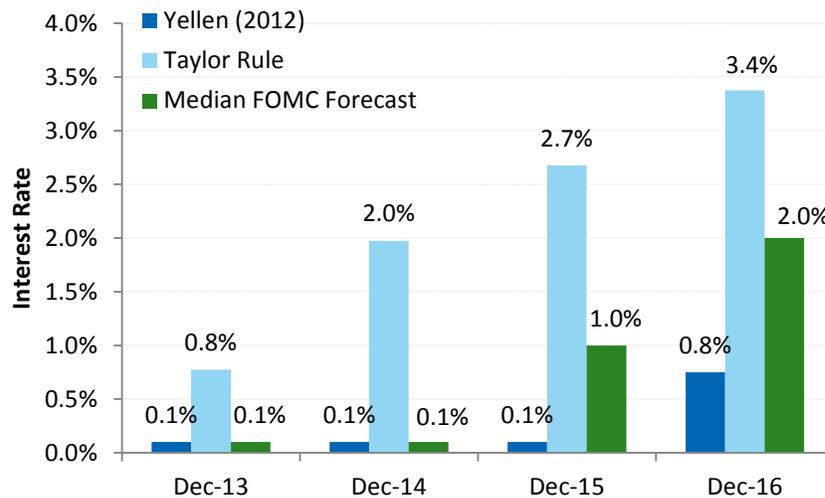


Figure 1 compares the optimal path for the fed fund rate proposed by Yellen (2012) with the median FOMC fed funds rate forecast from September 2013 as well as the future fed funds rate one would anticipate based on a “Taylor rule” that adjusts the recommended fed funds rate based on expected deviations from the inflation target (2%) and full employment (5.5% unemployment rate). If the forecast of 3% annual average real GDP growth were to come to fruition, the Taylor rule would call for a fed funds rate that is 170 basis points higher in December 2015 than the median FOMC forecast and 260 basis points higher than the optimal rate calculated by Yellen. Some of the difference in expected interest rates is attributable to the fact that the original (1993) Taylor rule places more weight on deviations from target inflation than target unemployment, but most of it comes from the way expectations of future changes to short-term interest rates impact spending and investment decisions today. A credible commitment to keep rates at zero longer than anticipated by market participants could generate additional consumption and investment today by lowering real long-term interest rates and removing the risk that the “punch bowl” would be taken away when spending growth accelerates in the future.⁸

As shown in Figure 2, the September 18 statement had an immediate impact on market expectations for future Fed policy, as measured by the three-month LIBOR implied by Eurodollar futures markets. Between September 5 and September 18, expected short-term interest rates in December 2015 and December 2016

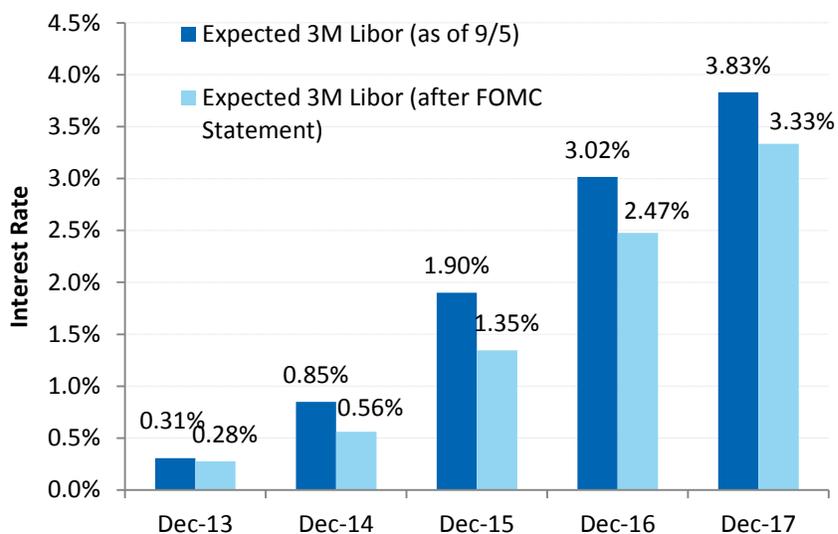
⁶ C.f. Yellen, J. (2012), “The Economic Outlook and Monetary Policy,” Money Marketeers of New York University, April 11, 2012; “Perspectives on Monetary Policy,” Boston Economic Club, June 6, 2012; “Revolution and Evolution in Central Bank Communications,” Haas School of Business, Berkeley, CA, November 13, 2012;

⁷ Yellen, J. (2012), ““Revolution and Evolution in Central Bank Communications,” Haas School of Business, Berkeley, CA, November 13, 2012. The output gap is calculated as two times the unemployment rate minus 5.5%. In the original Taylor rule (1993), the output gap has a coefficient of 0.5 and the inflation coefficient is 1.5.

⁸ Eggertson, G. and Woodford, M. (2003), “The Zero Bound on Interest Rates and Optimal Monetary Policy,” *Brookings Papers on Economic Activity*.

fell by 55 basis points, to 1.35% and 2.47%, respectively. The difference between market expectations and the median FOMC forecast halved in less than two weeks. While the Fed seems to have succeeded in reducing rate expectations, part of the decline was clearly tied to the weaker than expected August employment report. The challenge for the Fed will be maintaining lower rate expectations in the context of an improving economy.

Figure 2: Market Expectations of Future Short Term Interest Rates⁹



The Optimal Path's Key Assumptions

For the optimal control path identified by Yellen to stimulate current spending, market participants would have to believe the FOMC would follow through on its commitment to keep rates low even in cases when low rates may not be optimal at that specific point in time. For example, in 2016 the appropriate interest rate to minimize deviations from target inflation and unemployment over the *next five years* may indeed be 3.5%, even if such a future rate would lead to less spending (and higher unemployment) today. Practical implementation of the optimal control path requires “backward-looking” policy to honor prior commitments. The Fed’s asset purchases help to make this time-inconsistent policy more credible by creating financial incentives for the FOMC to keep rates lower longer. As Yellen explains, for forward guidance “to have its maximum effect, it must be understood and believed by the public, and therefore provide the public with a solid basis for forming their borrowing and spending decisions today.”

While some might assume more accommodative monetary policy would unleash higher inflation, Yellen argues that inflation is determined primarily by long-run inflation expectations. In January 2012, the FOMC formally announced that consumer price inflation of 2% was its long-run goal. As explained by Yellen, the purpose of this announcement was to “anchor inflation expectations more firmly,” which would “free the Committee's hand to more actively and effectively stabilize short-run fluctuations in economic activity. With inflation expectations anchored by a clear policy statement, the “FOMC can tolerate transitory deviations of inflation from its objective in order to more forcefully stabilize employment without needing to worry that the public will mistake these actions as the pursuit of a higher or lower long-run inflation objective.”¹⁰

More accommodative policy may indeed cause inflation to rise above the 2% target, but Yellen views this deviation as acceptable if it helps to achieve maximum employment. To Yellen, the 2% inflation target

⁹ Bloomberg, CME Eurodollar Futures.

¹⁰ Yellen (November 2012).

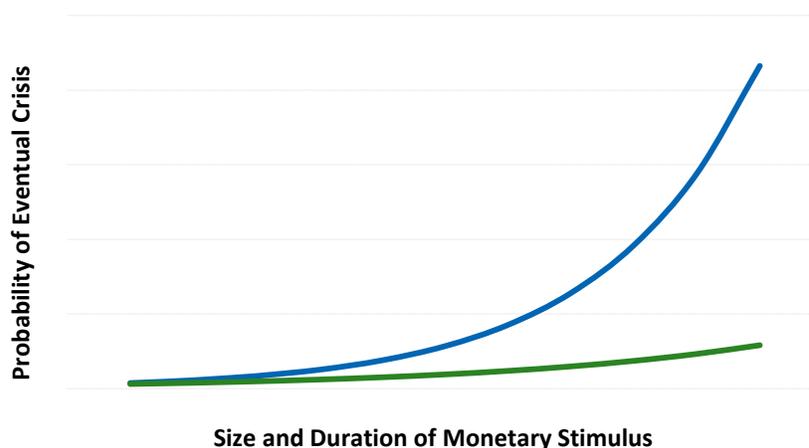
“cannot be viewed as a ceiling for inflation because that would result in deviations that are more frequently below 2% than above and thus not properly balanced with the goal of maximum employment.”¹¹ Yellen wishes to create symmetry in expectations so that inflation is as likely to hit 2.5% as 1.5%; positive deviations from the 2% target would be reasonable at times when unemployment is even further from its long-run objective of approximately 5.5%.

The Implications for Financial Stability and Asset Prices

Expectations do seem to play a powerful role in price-setting given that inflation has remained positive since 2009 in the face of significant overcapacity.¹² Most macroeconomics models would have predicted significant deflation between 2009 and 2013 as supply in excess of demand in the presence of high corporate profits would cause sellers to undercut each other to take profitable business away from their rivals.¹³ The persistence of positive inflation has created confidence among economists that inflation volatility can be dampened significantly by well-anchored inflation expectations.

The larger issue is not whether inflation will remain well-behaved in the face of monetary accommodation, but whether the remit of monetary policy is broader than simply minimizing deviations from target inflation and unemployment. As Bill White of the Bank for International settlements warned in 2006, “the stability of consumer prices might not be sufficient to ensure macroeconomic stability.”¹⁴ If periods of low rates encourage debt-financed investments in longer-dated capital, like housing, that later fail to prove profitable when rates normalize, the achievement of full employment may prove ephemeral. Low rates can also contain recessions by perpetuating unsustainable debt levels and financial imbalances that then lead to much larger crises down the road.¹⁵ Moreover, formulating policy on the basis of simulated paths for unemployment and inflation abstracts entirely from the financial system, its institutional structure, and the impact excessive liquidity has on leverage, risk perceptions, and liability structures.

Figure 3: Potential Slopes of the Monetary Policy Tradeoff¹⁶



¹¹ Yellen (November 2012).

¹² Hall, R. (2011), “The Long Slump,” *American Economic Review*.

¹³ Hall, R. (2013), “The Routes into and out of the Zero Lower Bound,” Federal Reserve Bank of Kansas City Economic Symposium at Jackson Hole.

¹⁴ White, W. (2006), “Is Price Stability Enough,” Bank for International Settlements.

¹⁵ Drehmann, et al. (2012), “Characterizing the Financial Cycle: Don’t Lose Sight of the Medium Term!” Bank for International Settlements.

¹⁶ Adapted from Shin (2013), Comments at 2013 Federal Reserve Bank of Kansas City Economic Symposium at Jackson Hole.

As Hyun Song Shin observed at Jackson Hole, the relevant policy choice may not be the slope of the Phillips Curve between inflation and unemployment, but rather the “slope of the tradeoff between stimulus now and a higher probability of trouble down the road.”¹⁷ If the slope of the tradeoff between monetary stimulus and the probability of a crisis is the green line depicted in Figure 3, few would object to low rates forever. If, however, the slope looks more like the blue line, then the cost of ongoing monetary stimulus is likely to be far greater than the benefits even if consumer price inflation remains below 2%. The slope of the curve depends largely on the efficacy of regulation, specifically the ability of regulators to identify and address “excessive” leverage and investment and their ability to perceive each and every one of the areas where financial fragility may manifest itself.

Conclusion

The Fed’s decision to maintain asset purchases at the \$85 billion monthly rate seems motivated, in part, by a desire to communicate that short-term interest rates are likely to remain lower for considerably longer than anticipated by market participants. Since the “tapering” discussion began in May, medium-to-longer-term yields rose well above levels consistent with the Fed’s expected path for short-term rates. This increase in rates was just the normal workings of the market, as investors reposition portfolios in light of existing vulnerabilities and perceived profit opportunities.¹⁸ Given investors’ rational concerns about the Fed’s ability to exit from unconventional policies without incident, one could even argue the market reaction since May was quite orderly and encouraging. The longer the monetary stimulus lasts, the greater the risk that future market reactions to signals of policy tightening will have a different character entirely.

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¹⁷ Shin (2013).

¹⁸ Shin, H. (2013).