

# Economic Trends

September 2013 (August 16, 2013-October 3, 2013)

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FEDERAL RESERVE BANK  
*of* CLEVELAND

## Banks Planning for a Stronger Economy

08.29.13

by Kristle Romero Cortés and Sara Millington

A number of indicators suggest that the banking industry continues to see improvement in overall economic stability. Two of the more significant indicators are loan-loss provisions and net charge-offs. Loan-loss provisions are funds set aside to cover potential loan defaults. Net charge-offs are loans that are deemed to be unrecoverable after being written off. Banks have recently been decreasing their loan-loss provisions, while net-charge offs have steadily declined since the crisis.

Provisions for loan and lease losses at Federal Deposit Insurance Corporation (FDIC) institutions reached a record low in the first quarter of 2013, falling 23 percent to 11 billion from the first quarter of 2012. Provisions for loan and lease losses have now returned to pre-crisis levels.

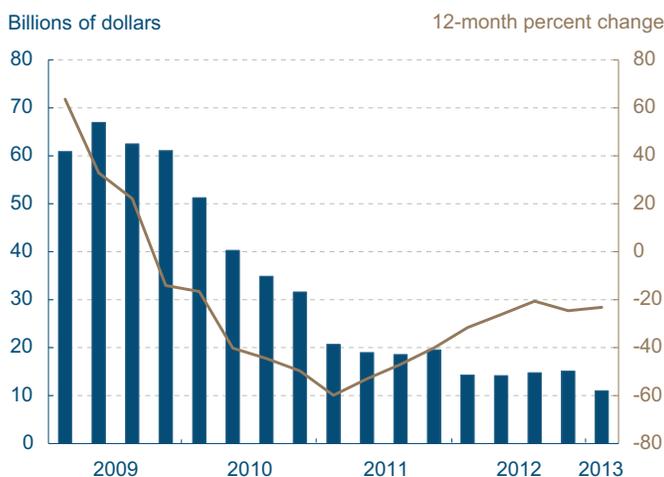
The decline in provisions matches the steady decline of net-charge offs (NCOs) experienced at FDIC institutions. Year-over-year changes in NCOs have moved closely with year-over-year changes in loss provisions since the fourth quarter of 2011. Net charge-offs have decreased 27 percent since the first quarter of 2012 although they are not yet at pre-crisis levels.

Net charge-offs for FDIC institutions in the first quarter of 2013 are at 16 billion, falling from 18.5 billion in the previous quarter. This decrease maintains the declining year-over-year trend in net charge-offs that began in the first quarter of 2010.

Of all the types of securitized loans and leases that are recovered, credit card charges form the greatest portion, followed by home equity loans. The year-to-date annualized NCOs of securitized assets are also down across all asset types.

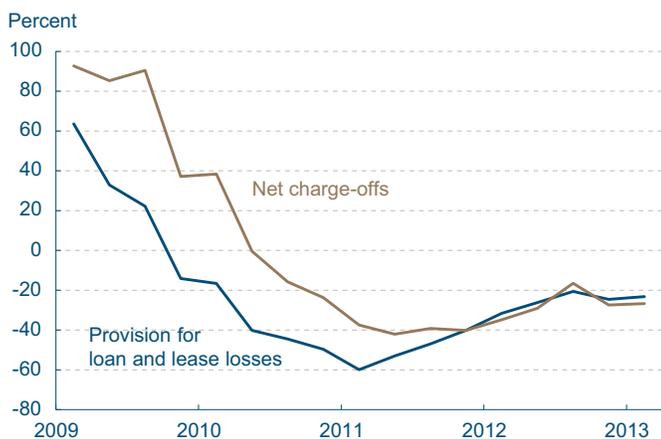
Another positive trend for FDIC institutions is the persistent increase in deposits. Domestic deposits increased 4.3 percent, and total deposits increased 3 percent. Balances in accounts of more than \$250,000 are the driving force behind the increase

### Provision for Loan and Lease Losses



Source: FDIC Quarterly Banking Profile.

### Loan-Loss Provisions and Net Charge-Offs



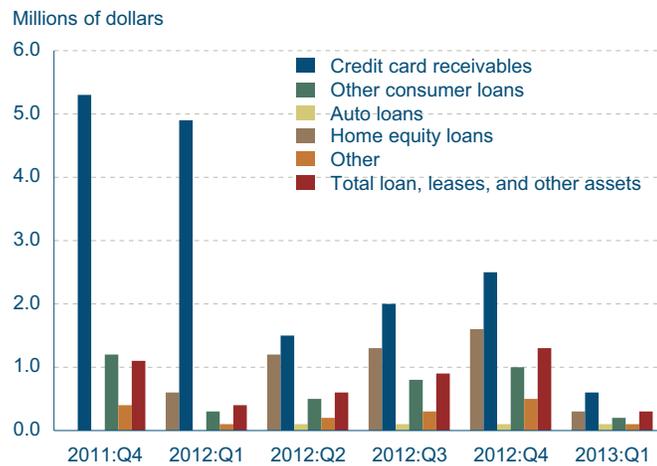
Source: FDIC Quarterly Banking Profile.

## Net Charge Offs



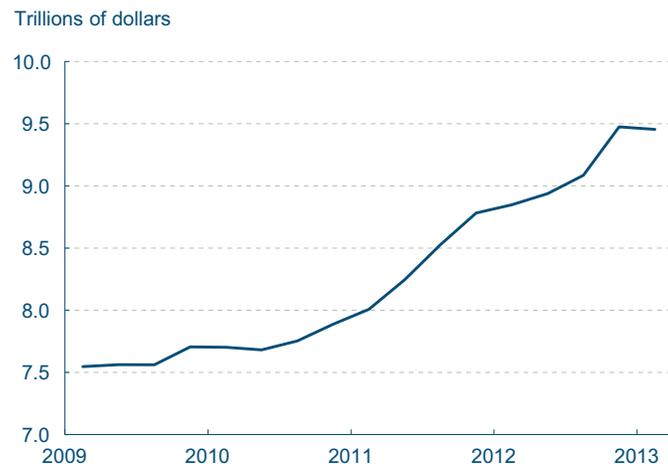
Source: FDIC Quarterly Banking Profile.

## Securitized Loans, Leases, and Other Assets Charged Off



Source: FDIC Quarterly Banking Profile.

## Domestic Deposits



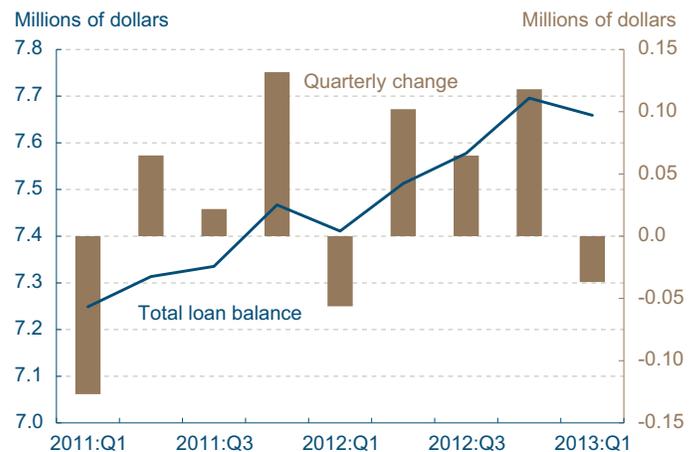
Source: FDIC Quarterly Banking Profile.

observed in domestic deposits. Deposits are important to banks because they provide a low-cost supply of money that can be lent out at higher rates. Also, deposits tend to be quite “sticky,” so they provide a stable source of funds.

FDIC institutions lent consistently throughout 2012. In the first quarter of 2013 there was a seasonal decline in lending due to the drop in credit card balances. Lending fell by 2 percent, and credit card balances outstanding fell by 5.2 percent. The last two years have also seen a drop in lending in the first quarter of the year and positive lending behavior during the remainder of it. As deposits continue to grow, there will be more funds available for loans and leases.

The lower loan-loss provisions are another sign that the economy is showing signs of recovery. Lower provisions have a downside risk, however. They leave banks exposed to future bumps in the recovery process. Larger institutions lead the trend to reduce reserves, and perhaps this is another sign of growth.

## Total Loan Balances



Source: FDIC Quarterly Banking Profile.

## Tracking Recent Levels of Financial Stress

09.05.13

by Amanda Janosko

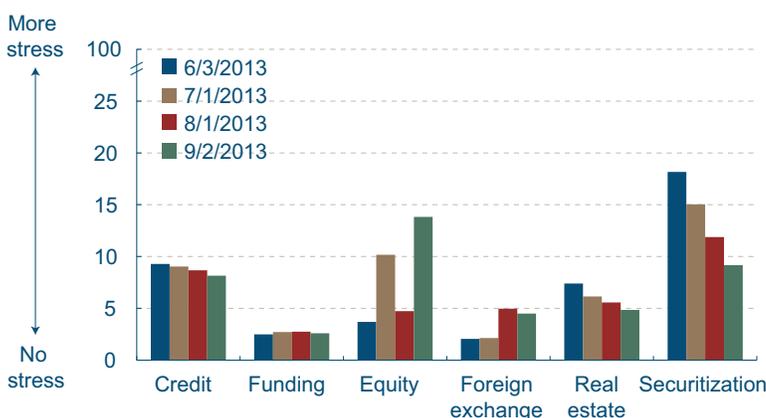
### Cleveland Financial Stress Index

Standard deviation



Source: Oet, Bianco, Gramlich, and Ong (2012).

### Relative Stress-Level Contributions of Component Markets to CFSI



Note: These contributions refer to levels of stress, where a value of 0 indicates the least possible stress and a value of 100 indicates the most possible stress. The sum of these contributions is the level of the CFSI, but this differs from the actual CFSI, which is computed as the standardized distance from the mean, or the z-score.

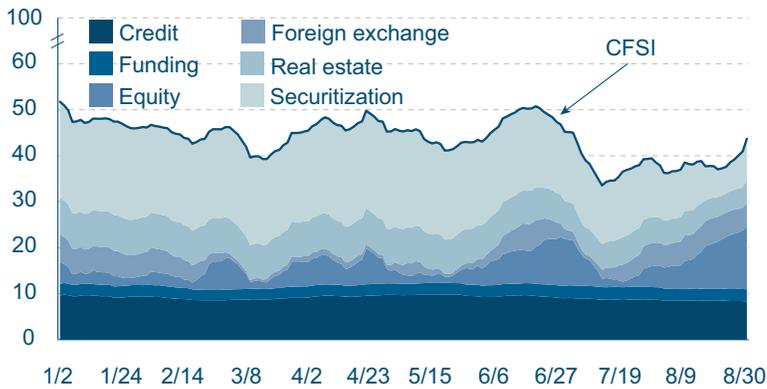
Source: Oet, Bianco, Gramlich, and Ong (2012).

The level of the Cleveland Financial Stress Index (CFSI) has decreased in the past few months, indicating a lower level of systemic financial stress. Although the most recent reading of the index from September 4 is in Grade 2 or a “normal stress period,” the index had been in a Grade 1 or “low stress period” for 49 days since June 1. The index currently stands at  $-0.43$ , which is up 0.63 points from a recent low on July 15, 2013. (The points refer to the standardized distance from the mean or the z-score). The index is down 1.32 points over the past year and is 3.52 points lower than its historical peak in December 2008.

A key feature of the CFSI is its ability to decompose the total level of system stress into each of the six financial submarkets represented in the index. These six financial submarkets include credit, equity, funding, foreign exchange, securitization, and real estate. (The data for these submarkets are reported in levels and are not standardized into z-scores.) A broad comparison of recent trends in these markets can be made by looking at monthly observations. The chart below shows monthly levels of stress in each market as of the first business day for each of the past four months. Using the comparison, we observe moderate declines in stress in the credit and real estate markets and more significant decreases in the securitization markets. Foreign exchange markets experience a modest stress increase, and funding markets remain flat. However, equity markets show alternating volatility.

A look at the CFSI and the component data for 2013 allows for a more detailed analysis. The slight increase in overall stress observed in mid-June around the time of a Federal Open Market Committee meeting appears to have been driven by a rise in the level of stress in equity and foreign exchange markets. The stress levels in these markets waned in early July, and the overall level of stress decreased. The CFSI rose again slightly in late July and through August as the increased contributions

## Stress-Level Contributions of Component Markets to CFSI



Notes: These contributions refer to levels of stress, where a value of 0 indicates the least possible stress and a value of 100 indicates the most possible stress. The sum of these contributions is the level of the CFSI, but this differs from the actual CFSI, which is computed as the standardized distance from the mean, or the z-score. Data is for 2013. Source: Oet, Bianco, Gramlich, and Ong (2012).

of equity and foreign exchange markets surpassed the declines in the securitization, credit, and real estate markets. In early September, political tensions in the Middle East increased, coinciding with a rise in the CFSI from Grade 1 to Grade 2, as stress in the equity and foreign exchange markets rose.

Recently, improvements have been made to make information and data for the CFSI more accessible to the public. A snapshot view of the current level and grade of the CFSI is available on the Federal Reserve Bank of Cleveland's homepage, while more detailed information can be found by navigating to the CFSI's webpage. Previously, users could download only the historical CFSI composite series. Now the component market data analyzed above are also available for download. Both the CFSI and component datasets are posted daily to the website at 3 pm ET.

## Expected Inflation Is Trending Higher

09.20.13

by Joseph G. Haubrich and Sara Millington

### Ten-Year Expected Inflation and Inflation Risk Premium



Source: Haubrich, Pennacchi, Ritchken (2011).

### Ten-Year Expected Inflation and Inflation Risk Premium



Source: Haubrich, Pennacchi, Ritchken (2011).

Expected inflation has moved up. The latest estimate of the inflation expected in 10 years is 1.86 percent, an increase of 0.10 percent over last month's rate of 1.76 percent. Expectations for inflation have been increasing for the last four months, with the largest increase between May and June of this year (0.15 percent). This four-month trend has pushed expectations to the highest levels we have seen in the past two years, yet at only 1.86 percent, expected inflation remains well below the average rate we have experienced over the last seven years.

The rate of inflation expected in the future is only one concern people have when it comes to dealing with inflation. Another is that the rate may end up significantly higher or lower than they expect, and the risk premium measures how worried people are about that possibility. Inflation risk premiums can move about for two very different reasons. Inflation may become more variable, so people are more uncertain about where prices will end up, or the stakes of misjudging the future rate could become higher.

The inflation risk premium increased 0.02 percent in September and ended the month at 0.48 percent. The premium has been rising in the last six months, clearly observable in the above graph. The inflation risk premium experienced larger increases in June and July (0.04 and 0.06 percent month-over-month). While September's reading continues the upward trend, there is a noticeable flattening of the inflation risk premium line from July to September.

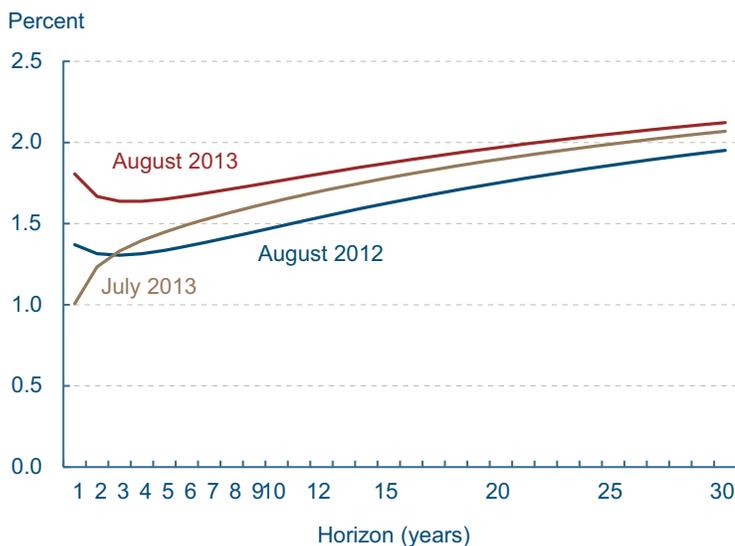
Looking at the long-term record of inflation expectations, recent values, even with the increases, remain much lower than the levels we have observed over the last 30 years. Expectations gradually declined from early 1982 to about 2003, after which they began to fluctuate in the neighborhood of 2 percent. Since that time, expected inflation has remained low by historical standards.

### 3-Year, 2-Year-Forward Inflation Rate



Source: Haubrich, Pennacchi, Ritchken (2011).

### Expected Inflation Yield Curve



Source: Haubrich, Pennacchi, Ritchken (2011).

For estimates of inflation expectations in a forward-looking time frame, analysts typically turn to TIPS data. However, TIPS data are not ideal for this purpose, because TIPS (Treasury inflation-protected securities) are generally issued with five- and 10-year maturities. The Cleveland Fed model of inflation expectations captures forward expectations from other financial instruments and can give a better idea of what future expectations may be at a greater variety of future time periods. And though the 5-year, 5-year forward rate is a popular measure, a more relevant time frame for monetary policy purposes is between two and five years, for which the three-year, two-year forward rate is used. This rate rose slightly in September (0.08 percent) and is now at 1.7 percent. This increase was slightly higher than August's increase of 0.05 percent.

Yet another way to look at inflation expectations is with an expected-inflation "yield curve," which plots expectations for different time horizons. This yield curve shifted up between August 2013 and September 2013.

The difference between August and September is evident in the one- to five-year-horizon range, but short-term rates are not considered the most reliable indicator of expectations because they fluctuate from month to month. Long-term rates, on the other hand, are less variable, at least for the past several years.

Looking at the longer-term horizons of these yield curves, we see that expected inflation has been shifting up since last year, with a noticeable shift up from August to September of this year. The yield curve for September 2013 crosses the 2.0 percent threshold around the 19-year horizon. In August, it didn't cross until the 22-year mark. Back in September 2012 the yield curve did not reach 2.0 percent even at a 30-year horizon. Even with the yield curve now crossing 2.0 percent at an earlier date than in previous months, inflation remains well-anchored.

Overall the increase in inflation expectations in the last few months has reversed the trend of the low expected rates that we have observed for several years. Yet even with this increase, expected rates remain historically low.

# Yield Curve and Predicted GDP Growth, August 2013

Covering July 20, 2013–August 16, 2013  
by Joseph G. Haubrich and Margaret Jacobson

## Overview of the Latest Yield Curve Figures

Over the past month, the yield curve steepened. The yield curve has continued its recent climb, becoming even steeper as the surge in long rates far outpaced the uptick in short rates. The three-month Treasury bill increased to 0.05 percent (for the week ending August 16), above July’s 0.03 percent and even with June’s 0.05 percent. The ten-year rate moved to 2.73 percent, a big skip up from July’s 2.54 percent and over a half-percent higher than June’s 2.20 percent. The slope increased to 268 basis points, up from July’s 251 basis points and June’s 215 basis points.

The steeper slope had a small but noticeable impact on projected future growth. Projecting forward using past values of the spread and GDP growth suggests that real GDP will grow at about a 1.1 percent rate over the next year, up a bit from July’s 0.9 percent and nearly triple June’s 0.4 rate. The strong influence of the recent recession is still leading towards relatively low growth rates. Although the time horizons do not match exactly, the forecast comes in on the more pessimistic side of other predictions but like them, it does show moderate growth for the year.

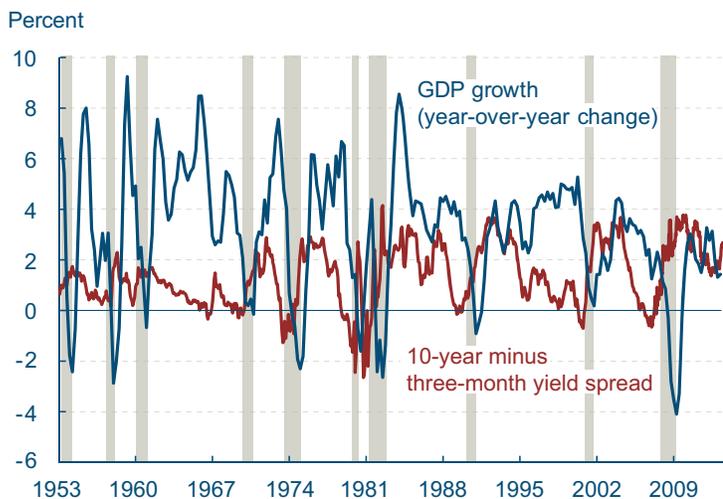
The slope change had a bit more impact on the probability of a recession. Using the yield curve to predict whether or not the economy will be in recession in the future, we estimate that the expected chance of the economy being in a recession next August at 2.23 percent, down from the July estimate of 2.58 percent, and also down from June’s already low 4.35 percent. So although our approach is somewhat pessimistic as regards the level of growth over the next year, it is quite optimistic about the recovery continuing.

## Highlights

	August	July	June
Three-month Treasury bill rate (percent)	0.05	0.03	0.05
Ten-year Treasury bond rate (percent)	2.73	2.54	2.20
Yield curve slope (basis points)	268	251	215
Prediction for GDP growth (percent)	1.1	0.9	0.4
Probability of recession in one year (percent)	2.23	2.6	4.4

Sources: Board of Governors of the Federal Reserve System; authors' calculations.

## Yield Curve Spread and Real GDP Growth



Note: Shaded bars indicate recessions.  
Source: Bureau of Economic Analysis, Board of Governors of the Federal Reserve System.

## The Yield Curve as a Predictor of Economic Growth

The slope of the yield curve—the difference between the yields on short- and long-term maturity bonds—has achieved some notoriety as a simple forecaster of economic growth. The rule of thumb is that an inverted yield curve (short rates above long rates) indicates a recession in about a year, and yield curve inversions have preceded each of the last seven recessions (as defined by the NBER). One of the recessions predicted by the yield curve was the most recent one. The yield curve inverted in August 2006, a bit more than a year before the current recession started in December 2007. There have been two notable false positives: an inversion in late 1966 and a very flat curve in late 1998.

More generally, a flat curve indicates weak growth, and conversely, a steep curve indicates strong growth. One measure of slope, the spread between ten-year Treasury bonds and three-month Treasury bills, bears out this relation, particularly when real GDP growth is lagged a year to line up growth with the spread that predicts it.

### Predicting GDP Growth

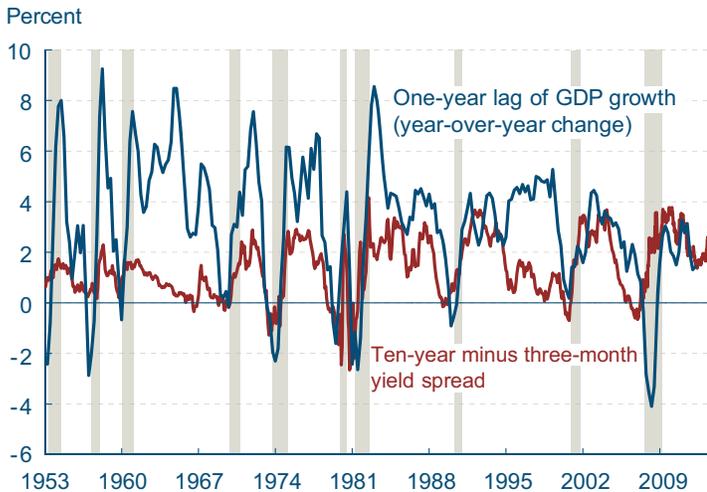
We use past values of the yield spread and GDP growth to project what real GDP will be in the future. We typically calculate and post the prediction for real GDP growth one year forward.

### Predicting the Probability of Recession

While we can use the yield curve to predict whether future GDP growth will be above or below average, it does not do so well in predicting an actual number, especially in the case of recessions. Alternatively, we can employ features of the yield curve to predict whether or not the economy will be in a recession at a given point in the future. Typically, we calculate and post the probability of recession one year forward.

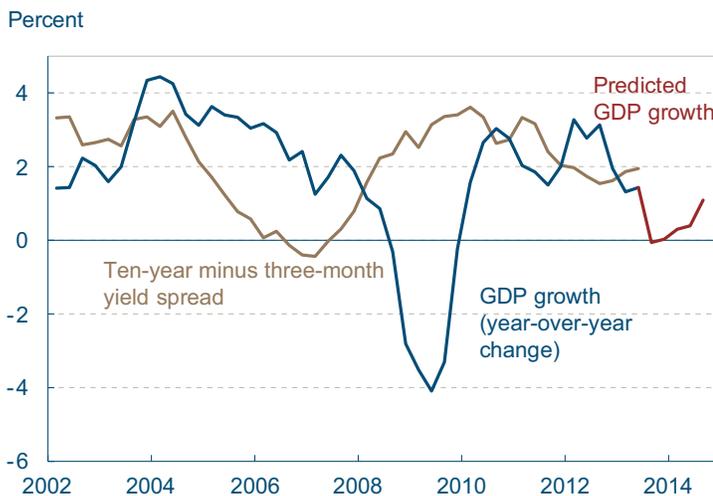
Of course, it might not be advisable to take these numbers quite so literally, for two reasons. First, this probability is itself subject to error, as is the case with all statistical estimates. Second, other researchers have postulated that the underlying determinants of the yield spread today are materi-

## Yield Spread and Lagged Real GDP Growth



Note: Shaded bars indicate recessions.  
Sources: Bureau of Economic Analysis, Board of Governors of the Federal Reserve System.

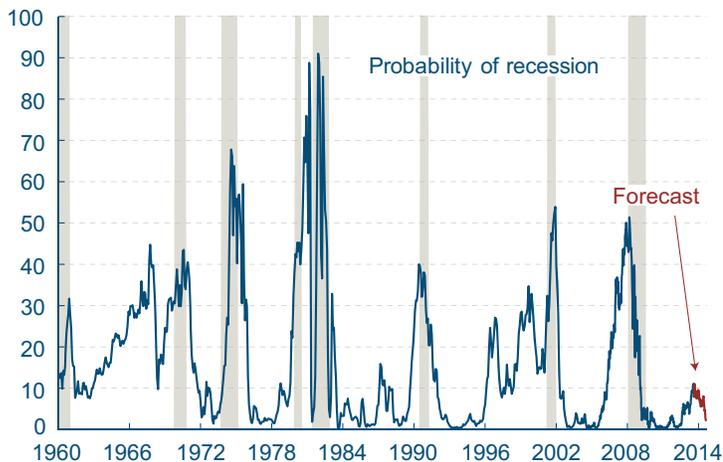
## Yield Curve Predicted GDP Growth



Sources: Bureau of Economic Analysis, Board of Governors of the Federal Reserve System, authors' calculations.

## Recession Probability from Yield Curve

Percent probability, as predicted by a probit model



Note: Shaded bars indicate recessions.

Sources: Bureau of Economic Analysis, Board of Governors of the Federal Reserve System, authors' calculations.

ally different from the determinants that generated yield spreads during prior decades. Differences could arise from changes in international capital flows and inflation expectations, for example. The bottom line is that yield curves contain important information for business cycle analysis, but, like other indicators, should be interpreted with caution. For more detail on these and other issues related to using the yield curve to predict recessions, see the Commentary “Does the Yield Curve Signal Recession?” Our friends at the Federal Reserve Bank of New York also maintain a website with much useful information on the topic, including their own estimate of recession probabilities.

## Thresholds or Dates in Monetary Policy Communications

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10.03.13

by Charles T. Carlstrom and Margaret Jacobson

Since the onset of the financial crisis, the Federal Reserve has been using two main tools to carry out its monetary policy. First, there is quantitative easing, which is broadly defined as buying long-term securities to expand the balance sheet, and second, there is a promise to keep the federal funds rate low for an extended period. Both tools work better when the Fed clearly communicates potential changes to the public. In order for Fed policy to effectively stimulate the economy today, the public needs to have a good understanding of how the balance sheet will evolve over time (which is determined primarily by security purchases) and when the funds rate will rise.

Two different strategies have been employed to communicate the Fed's intentions for both tools. The first ties future policy changes to certain endpoints. For example, the Federal Open Market Committee (FOMC) has announced that the federal funds rate will not likely be increased until a specified date (currently 2015). For quantitative easing, similar language has tied the end of purchases to the total size of the purchases. The alternative, which the Committee has been moving toward, is a data-driven threshold. This approach ties program changes to future conditions as they are reflected in various indicators, like unemployment rates or inflation.

This data-driven communication first appeared in the December 2012 FOMC statement, when the Committee indicated that the target range for the federal funds rate, at 0 to 1/4 percent, "will be appropriate at least as long as the unemployment rate remains above 6-1/2 percent, inflation between one and two years ahead is projected to be no more than a half percentage point above the Committee's 2 percent longer-run goal, and longer-term inflation expectations continue to be well anchored."

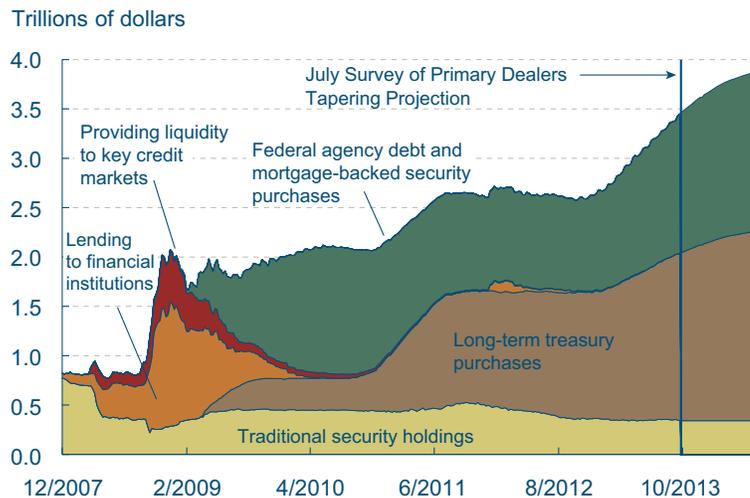
With data-driven thresholds there is an automatic stabilizer component in the language. If the econ-

## Language Changes and Liftoff



Source: Board of Governors of the Federal Reserve System.

## Balance Sheet



Note: Traditional security holdings is equal to securities held outright, less securities lent to dealers, less longer-term securities. Assets do not include float, gold stock, SDRs or Treasury currency outstanding.

Source: Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York.

omy performs worse and unemployment is higher than expected, the guidance from the Committee will lead the public to expect that the date of the first increase in the federal funds rate will be pushed out and to expect that the volume of QE purchases will increase. Conversely, if the economy performs better than expected, the opposite occurs.

With date-driven language, if the economy performs worse than expected, no automatic adjustments occur. One can plausibly argue that the markets will expect changes in dates or another QE program, but there is not the same level of transparency as with data-driven language. Without this transparency, the effectiveness of these programs may be diminished.

For example, when the date for the first federal funds rate increase (“liftoff”) was first introduced in August 2011, it was mid-2013. (“The Committee currently anticipates that economic conditions... are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013.”) But economic conditions were not as strong as expected, so by the FOMC’s September 2012 statement, the potential liftoff date had moved to mid-2015. (“...the Committee ...anticipates that exceptionally low levels for the federal funds rate are likely to be warranted at least through mid-2015.”)

With quantitative easing, a similar phenomenon has occurred. There have been three separate quantitative easing programs. The first two were specified in terms of a total volume of purchases that would be made, making them date-driven programs. The third program was announced with no total amount as an endpoint, just a volume of monthly purchases that would continue “until the outlook for the labor market has improved substantially in a context of price stability,” thereby employing partially data-driven language. Each additional program was added when the economy did not live up to the FOMC’s expectations (much as the liftoff date was shifted outward when the economy was not fulfilling previous expectations).

The monetary stimulus from quantitative easing is roughly given by the Fed’s balance sheet and the expectation of the balance sheet going forward. When QE1 began in November 2008, the bal-

ance sheet was roughly \$271 billion. Currently, the balance sheet is \$3.4 trillion, and when QE3 ends, the Survey of Primary Dealers projects it to be \$3.9 trillion. The Fed's idea about the total stimulus needed for the economy shifted as new data became available.

Yet the current partially-data-driven threshold for QE3 has also led to some confusion. It was never clear what substantial improvement in labor markets meant. Which variables? How much improvement is substantial? (See "What Constitutes Substantial Employment Gains in Today's Labor Market?")

For example, at the beginning of QE3, the market—as reflected in the Survey of Primary Dealers—anticipated that the size of the program would be \$1.1 trillion. But when surveyed prior to the January 2013 FOMC meeting, they had increased the anticipated size of the program to \$1.2 trillion. Since April, the program has been projected to be bigger still, roughly \$1.2 trillion to \$1.4 trillion in size, and it is anticipated to end in the second quarter of 2014 rather than the first quarter of 2014.

However, over this period, the labor market has shown some signs of significant improvement. For example, in March the median Blue Chip forecast for the unemployment rate at the end of 2014 was 7.1 percent, and just prior to the June 2013 FOMC meeting it was 6.9 percent. The most recent Blue Chip survey shows an anticipated unemployment rate for the end of 2014 at 6.8 percent.

## Survey of Primary Dealers: Evolution of Quantitative Easing Projections

	October 2012	December 2012	January 2013	March 2013	April 2013	June 2013	July 2013
Volume	\$1.1 trillion	\$1.1 trillion	\$1.2 trillion	\$1.2 trillion	\$1.4 trillion	\$1.3 trillion	\$1.2 trillion
End date	End of 2014:Q1	End of 2014:Q1	End of 2014:Q1	End of 2014:Q1	End of 2014:Q2	End of 2014:Q2	End of 2014:Q2

Notes: projections are approximated from the median answers to questions on expectations for the monthly pace of purchases and questions on expected changes in the amount of domestic securities held in the System Open Market Account. All results are calculated from survey responses given prior to FOMC meetings.  
Source: Federal Reserve Bank of New York.

## 2014 Unemployment Rate Forecast

	September 2012	October 2012	December 2013	January 2013	March 2013	April 2013	June 2013	July 2013	September 2013
FOMC (central tendency midpoint)	7.0		7.1		6.9		6.7		6.6
Blue Chip				7.0	7.1	7.0	6.9	6.9	6.8
Survey of Primary Dealers	7.6	7.3	7.1	6.9	6.9	6.9	6.8	6.6	

Sources: Board of Governors of the Federal Reserve System, Federal Reserve Bank of New York, Blue Chip newsletters.

## Unemployment Rate and the FOMC's Survey of Economic Projections (SEP) Central Tendency



Sources: Board of Governors of the Federal Reserve System, Bureau of Labor Statistics.

The markets, desiring further guidance, took some from Federal Reserve Chairman Bernanke's comments in the press conference after the June 2013 meeting. In that press conference, Bernanke stated that the market could anticipate that the Fed would slow the rate of purchases later this year, with an eye toward curtailing new purchases as the unemployment rate approached 7 percent and prospects for solid job gains remained promising. The market interpreted the comments as a sign that the Committee might be contemplating an unemployment threshold of 7 percent. But with the passage of time, the market may become increasingly likely to question the idea of a 7 percent threshold for ending QE3.

While clear thresholds are clearly desirable, they are also challenging. It is hard to quantify the exact economic conditions that the Fed will consider when deciding to increase the funds rate or taper QE purchases. By itself, any given indicator, such as measured unemployment, might not be a good measure of the economic conditions necessary for liftoff or tapering.

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