

Economic Trends

March 2012 (February 10, 2012-March 7, 2012)

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FEDERAL RESERVE BANK
of CLEVELAND

How Is Structured Finance Doing?

02.10.2012

by Mahmoud Elamin and William Bednar

Structured finance has been vilified as the culprit behind the worst recession since the Great Depression. Every aspect of its design has been disparaged: faulty underlying loans, bad incentives for originators, dubious AAA ratings and mispriced risks. Did the Great Recession spell the end of structured finance or is it making a comeback?

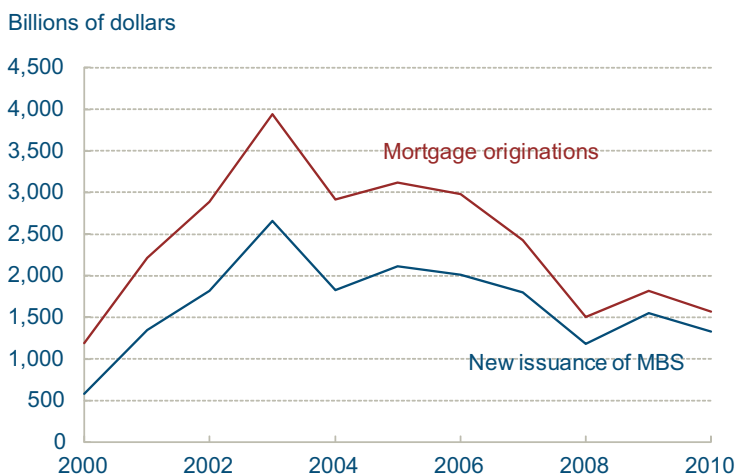
Structured finance securities are debt instruments collateralized by a securitization pool of loans. The pool's cash inflow supports the cash outflow to pay the securities off. The securities are divided into multiple tranches characterized by their seniority. The most senior tranche is paid first; the second senior gets paid only after the first senior is paid and so on. Investors buy the tranche that best fits their risk appetites.

We look at three products that fall under the general heading of structured finance: mortgage-backed securities (MBS), asset-backed securities (ABS), and collateralized debt obligations (CDO). MBS are backed by mortgages, ABS are backed by assets such as credit card loans, auto loans, student loans, and the like, while CDO are backed by investment-grade loans, high-yield loans, other structured finance products, and the like.

U.S. mortgage loan originations and MBS issuance began to increase rather sharply in 2000 and peaked in 2003. They dropped off pretty sharply in 2004, rose slightly in 2005, and then gradually dropped off until they reached their bottom in 2008. They are still hovering around that bottom now, with no meaningful recovery relative to the 2003 peak. The strong correlation between the two series is expected, since mortgage origination determines the amount of loans that can be securitized.

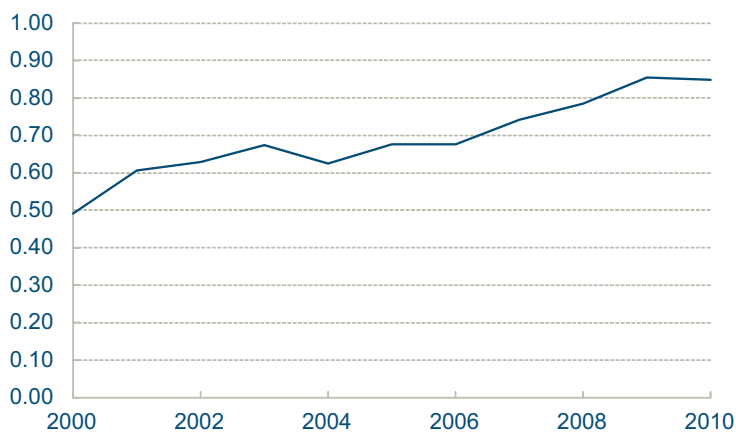
The series' levels gives us an idea about the health of the mortgage market in general. To examine the health of the securitizing market, it is more useful

MBS Issuance and Mortgage Originations



Source: Inside Mortgage Finance, *Mortgage Market Statistical Annual*.

Mortgage Securitization Rate



Source: Inside Mortgage Finance, *Mortgage Market Statistical Annual*.

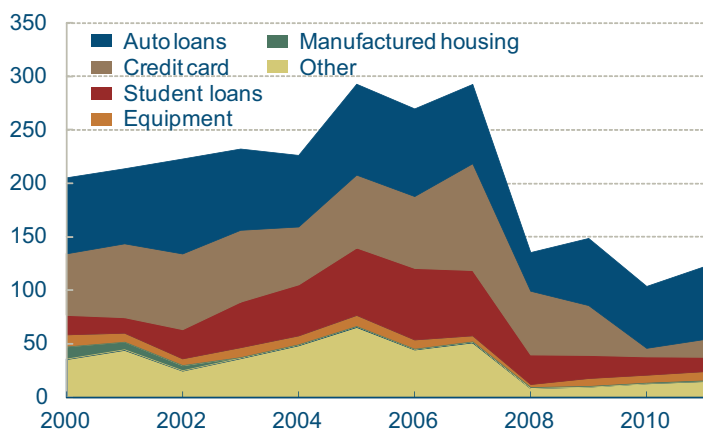
to look at the mortgage securitization rate, the proportion of loans securitized relative to total loans originated.

The securitization rate has increased pretty drastically over the past 10 years. It had two periods of increase, with one period of slight drop, slight rise, and stagnation.

The first increase was from about 50 percent in 2000 to about 67 percent in 2003, an increase of about 34 percent. The second increase started around 2006 from about 68 percent to almost 85 percent in 2010, a 25 percent increase. Exactly how much of a role private demand, GSE policies, and Federal Reserve MBS purchases played in each episode is a matter of conjecture. No matter what the reasons are, the solid increase in the securitization rate and the current elevated level (around 85 percent) shows that the mortgage securitization rate remains strong despite the decline in mortgage loan originations and MBS issuance.

Total U.S. ABS Issuance by Loan Type

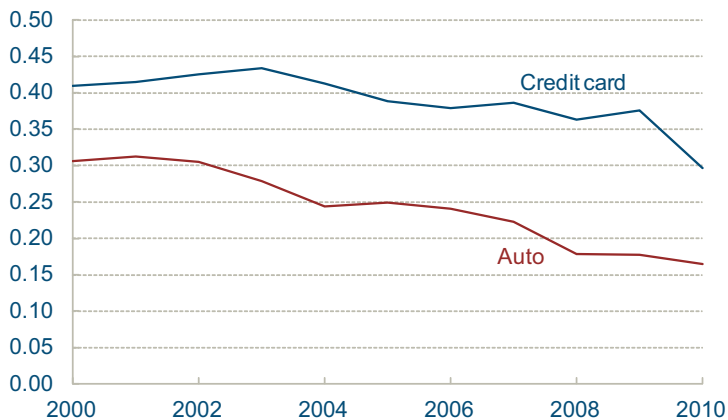
Billions of dollars



Note: Excludes home equity loans.
Source: SIFMA.

Next on our list are ABS. The total volume of ABS issued in the United States increased gradually from 2000 to 2003, rising around 13 percent in total. It then fell slightly before climbing to a peak of \$293 billion in 2005. A slight drop followed with another peak in 2007 of \$292 billion. In 2008 volume fell sharply by almost 54 percent. Since then, the market has continued to zigzag, experiencing a slight rise in 2011.

ABS Outstanding and Outstanding Debt



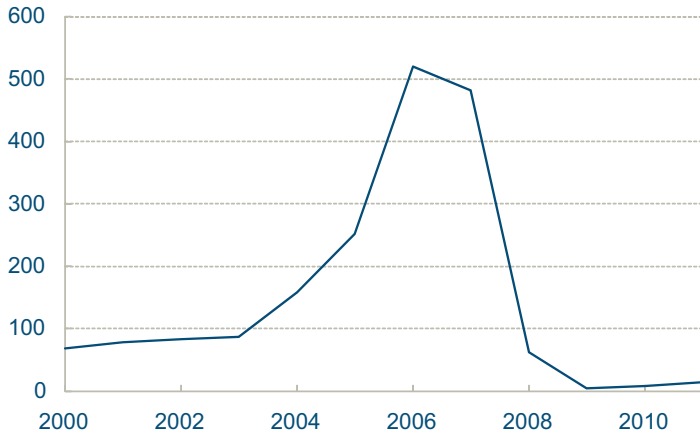
Sources: SIFMA; Federal Reserve Board; authors' calculations.

The individual types of ABS, backed by different kinds of loans, followed a similar pattern. However, as with MBS, the amount of securities that are issued depends on the amount of loans available to be securitized. Therefore it is more informative to look at ABS securitization rates.

The two largest asset classes of ABS are credit card receivables and auto loans. Because we lack the necessary detailed data, we plot instead ratios to total outstanding debt. The ratio of outstanding auto loan ABS to total outstanding auto loan debt has been gradually declining. This trend started before the latest recession. It gradually decreased throughout our timeframe. The ratio of outstanding credit card receivables ABS to outstanding credit card debt peaked in 2003 and has gradually slid since

Total Global CDO Issuance

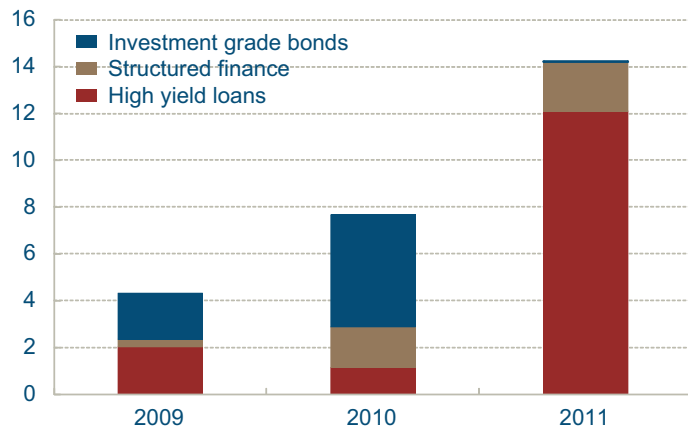
Billions of dollars



Source: SIFMA.

Global CDO Issuance by Collateral Type

Billions of dollars



Source: SIFMA

then. The ABS securitization rate seems to have been undergoing a gradual decline throughout the last decade.

The most notorious of structured finance products is the CDO. Total global CDO issuances increased gradually from about \$68 billion in 2000 to about \$87 billion in 2003. A spectacular growth ensued afterwards from \$87 billion in 2003 to about \$520 billion in 2006. A slight decline followed in 2007 to \$481 billion. Afterwards the market almost completely collapsed, falling to \$61 billion in 2008 and only about \$4 billion in 2009. In 2011 there was a slight uptick.

New CDO issuances in 2011 were about \$14 billion, nearly doubling the amount from the year before but still very far from the 2006 pre-recession peak. The recent uptick has been driven mostly by CDOs that are long-term and collateralized mostly by high-yield loans.

Educational Attainment and Earnings

03.07.2012

by Dionissi Aliprantis and Margaret Jacobson

Median household income growth has slowed in the United States over the last decade. The earnings of full-time workers play an important role in income trends, and the median earnings for all workers have grown more slowly since 2000 than they did in the 1990s.

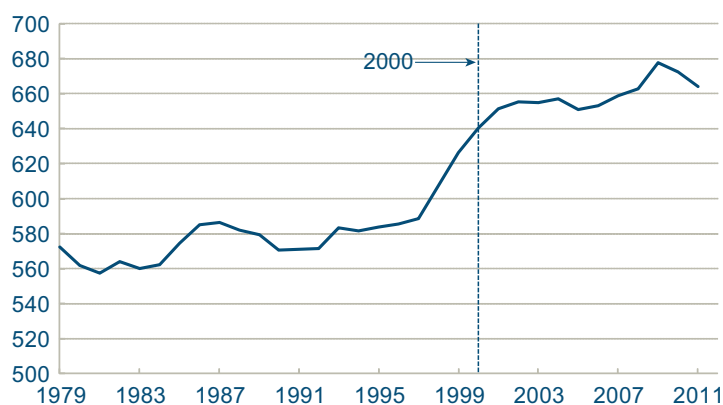
One factor that could be influencing the slowdown in earnings is educational attainment. Researchers have shown that educational attainment helps to determine employment and labor force participation patterns, as well as other labor market outcomes. We can see very distinct patterns in earnings when we examine them by educational attainment. Over the past decade, there were large gaps in median earnings across groups with different levels of attainment. For example, the median earnings of those with bachelor's degrees (BAs) in 2005 were 61 percent higher than the median earnings of high school graduates. Similarly, the median earnings of advanced degree holders in 2005 had earnings that were 25 percent higher than those with BAs.

Looking within each attainment group, we can see that median real earnings have not grown rapidly since 2000 for any group. Figure 3 shows earnings growth instead of levels to see these trends more clearly. From 2000 to the point at which the median real earnings of all workers peaked (see first chart above), only the median earnings of those with a BA or advanced degree had grown. Nevertheless, the median real earnings of all workers grew over the past decade, even if moderately.

How can we explain the earnings growth in the overall population when earnings were relatively flat within educational attainment groups? One possible explanation is that overall earnings have grown because workers have shifted to levels of higher educational attainment, and therefore receive the corresponding higher earnings. In fact, there were large increases between 2000 and 2011 in the share of full-time workers who held advanced or

Median Usual Weekly Earnings (Real) of Full-time Wage and Salary Workers

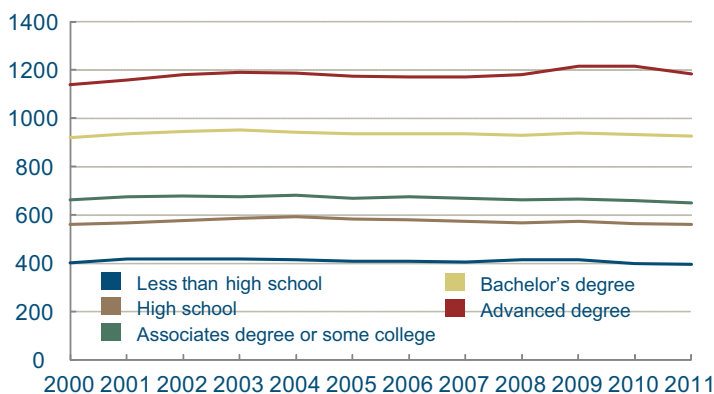
Dollars, 2005 adjusted



Note: Real calculations based on implicit PCE deflator.
Source: Bureau of Labor Statistics.

Real Usual Median Weekly Earnings by Educational Attainment

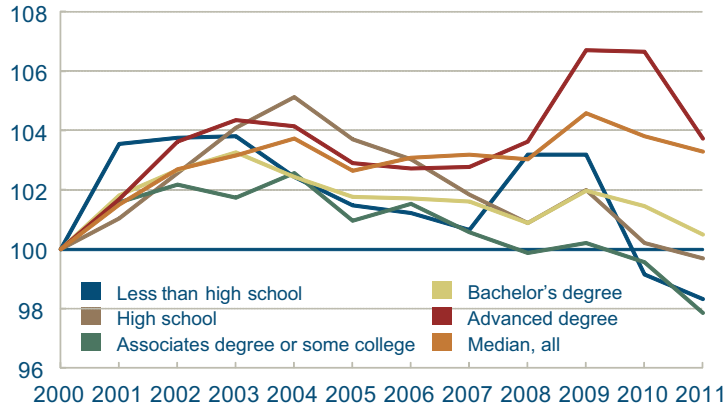
Dollars, 2005 adjusted



Note: Real calculations based on implicit PCE deflator.
Source: Bureau of Labor Statistics.

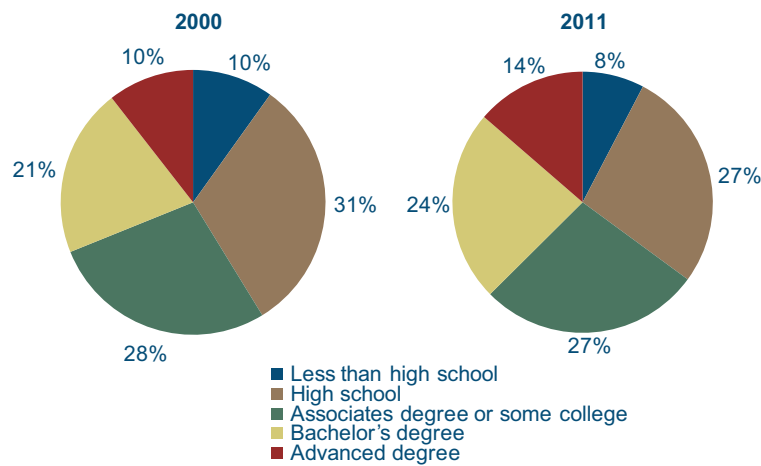
Real Median Earnings Growth

Index, 2000=100



Note: Real calculations based on implicit PCE deflator.
Source: Bureau of Labor Statistics.

Full-time Salary and Wage Workers, Educational Attainment



Source: Bureau of Labor Statistics.

bachelor's degrees. In 2000, 31 percent of workers held such degrees, but by 2011 it was 38 percent. Similarly, the share of less educated workers fell. In 2000, 41 percent of full-time workers had a high school degree or less, and in 2011, it was 35 percent.

Examining the population shifts between educational attainment groups helps to illustrate that the relationship between earnings and attainment can be complicated. Not only have the shares of attainment groups changed over time, but so have their demographic compositions. For example, it is well-documented that the share of BA holders who are females has been increasing steadily over recent decades. It is also well-documented that women tend to earn less than men, so the higher share of female BA holders might mute earnings growth for the group of BA holders. As well, changes in unemployment and labor force participation rates could also influence the earnings received by full-time workers.

What is clear amidst this complicated picture is that the strong relationship between educational attainment and earnings points to attainment as one of the most important demographic characteristics for understanding the evolution of earnings over time.

Adjustments to Seasonal Factors Alter Inflation Estimates

02.23.2012

by Brent Meyer

Every February the BLS updates the seasonal factors for each component in the Consumer Price Index (CPI) to reflect developments during the previous year. The updates are applied to the previous five years of CPI data (in this case, revisions cover back to 2007). During the update process, some components even change seasonal status. For example, this year, the largest component in the index—Owners’ Equivalent Rent (OER)—changed from a seasonally adjusted component to an unadjusted series. Also, every other February, the BLS updates the weights (or relative importance values) of all the component series to reflect expenditure changes. Usually, these revisions don’t change much, but this year, they led to a modest change in the near-term trend of a few key underlying inflation measures.

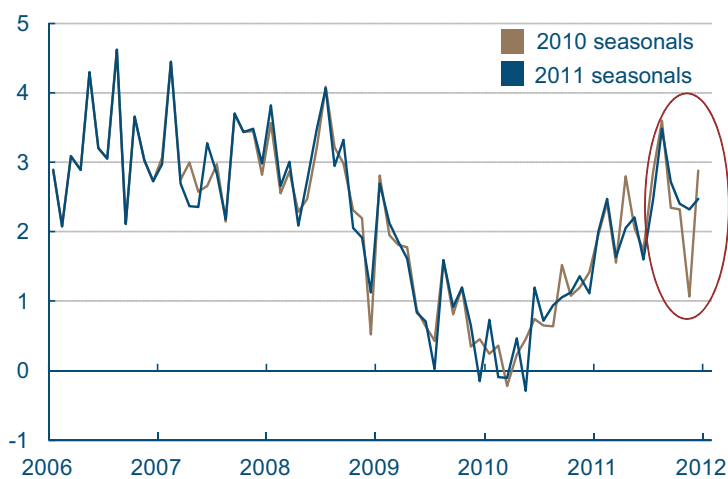
The revised seasonal factors can have a modest effect on the median CPI, as it is calculated from a set of ordered price changes (from smallest to largest). Any change in a component price could change the ordering, and thus the median. Over the past three months, the new seasonal factors have served to push up the growth rate in the median CPI. This was especially apparent last November, when the median CPI was revised up from 1.1 percent to 2.3 percent, leading to an upward revision in its near-term (3-month) growth rate—from 2.1 percent to 2.4 percent through December.

After factoring in a 3.0 percent jump during January, the 3-month growth rate in the median CPI rose to 2.6 percent. This is higher than the median’s 12-month growth rate of 2.4 percent (which is the highest this rate has been since April 2009). Echoing the upward pressure signaled by the median CPI, the sticky-price CPI—which tracks the price changes in the more persistent components of the market basket—rose 3.0 percent in January, outpacing its 3-month growth rate (2.7 percent) and its year-over-year growth rate of 2.2 percent.

Interestingly, the inflation signal stemming from

Median CPI: 2011 seasonals

Annualized percent change



Source: Bureau of Labor Statistics.

January Price Statistics

	Percent change, last					2010 average
	1mo. ^a	3mo. ^a	6mo. ^a	12mo.	5yr. ^a	
Consumer Price Index						
All items	2.5	1.2	1.8	2.9	2.3	3.0
Excluding food and energy (core CPI)	2.7	2.2	2.1	2.3	1.8	2.2
Median ^b	3.0	2.6	2.7	2.4	2.0	2.3
16% trimmed mean ^b	2.9	2.0	2.3	2.6	2.1	2.6
Sticky price ^c	3.0	2.7	2.6	2.2	2.0	2.1
Flexible price ^c	1.4	-1.8	0.0	4.8	3.0	5.5

a. Annualized.

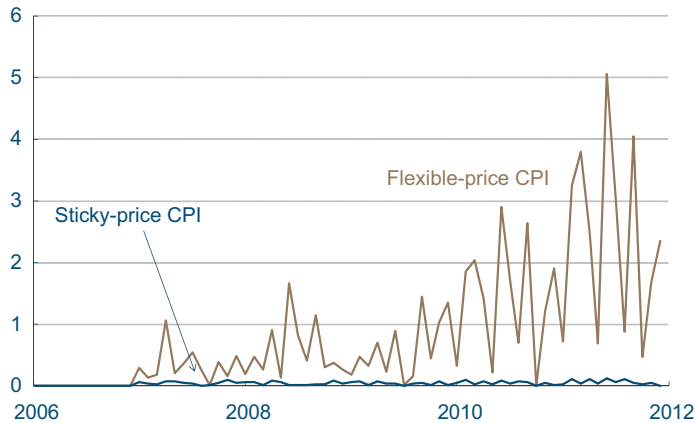
b. Calculated by the Federal Reserve Bank of Cleveland.

c. Author’s calculations.

Source: Bureau of Labor Statistics.

Sticky- and Flexible-Price CPIs with the New Seasonals

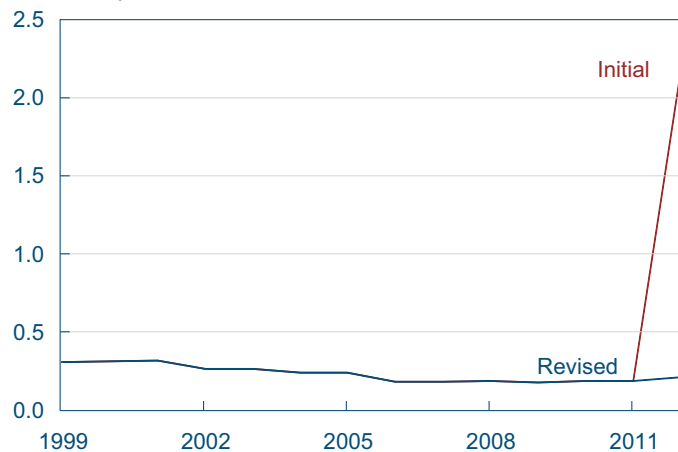
Absolute difference in 3-month annualized percent change due to updated seasonal factors



Sources: U.S. Department of Labor, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland.

The Weight of Financial Services

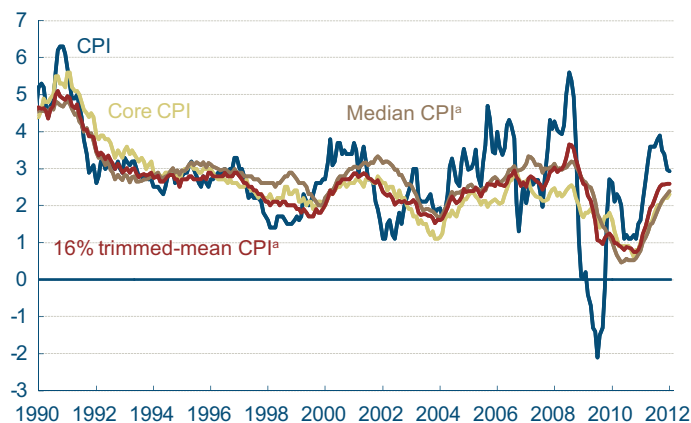
Relative importance



Source: Bureau of Labor Statistics.

Consumer Price Index

12-month percent change



a. Calculated by the Federal Reserve Bank of Cleveland.
Sources: U.S. Department of Labor, Bureau of Labor Statistics, Federal Reserve Bank of Cleveland.

the sticky-price CPI is largely unaffected by changes to seasonal factors. In fact, after the last revision the 3-month annualized growth rate in the sticky-price CPI changed by less than 0.1 percentage point, on average. This is far less than the 1.1 percentage point average change in the flexible-price CPI trend, suggesting that changing seasonality is just another source of noise that statistics like the sticky-price CPI help to eliminate.

Taking a longer-term view of the data reveals that the 12-month trend in the CPI (which is not seasonally adjusted), has continued to converge toward the growth rate in underlying inflation measures, softening from 3.9 percent last September to 2.9 percent as of January 2012. However, underlying inflation appears to have increased over that time period, as the core CPI and trimmed-mean measures have risen from a range of 2.0 percent-2.5 percent to 2.3 percent-2.6 percent from September to January.

Update: There was an unusual mishap with this month's release. When this article was first posted on February 23, we noted that the weight of financial services in the consumer market basket had shot up to 2.2 percent, though previously it had never come close to 0.5 percent. On March 7, the BLS announced that it had discovered "an anomaly" and the weight of financial services had been revised and was now back in line with historical norms at 0.2 percent.

Fourth District Employment Conditions

February 24, 2012

by Kyle Fee and Nelson Oliver

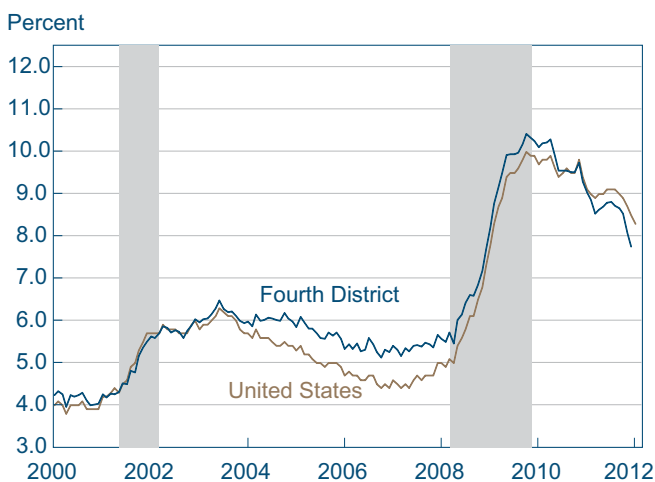
As of the end of 2011, the rate of unemployment in the Fourth District stands at 7.8 percent. Typically, the Fourth District rate's unemployment rate has been higher than the nation's, but it now rests below the national rate of 8.5 percent. Over the past year, both the Fourth District and the United States as a whole saw the unemployment rate decline a marked 1.5 percentage points. Future improvements in the labor market may be subdued, however, due to changes in the Fourth District's labor force.

The distribution of unemployment rates among Fourth District counties ranges from a low of 5.1 percent (Mercer County, Ohio) to a high of 15.5 percent (Jackson County, Kentucky), with the median county unemployment rate at 8.7 percent. County-level patterns reflect statewide unemployment rates. For example, as of December 2011, the unemployment rate was 8.1 percent in Ohio, 9.1 percent in Kentucky, 7.6 percent in Pennsylvania, and 7.9 percent in West Virginia. Compared to December 2010, all states within the District experienced declines in unemployment levels of nearly 1.0 percent or better.

There are significant differences in unemployment rates across counties in the Fourth District. Of the 169 counties that make up the District, 80 had an unemployment rate below the national rate and 89 counties had a rate at or higher than 8.5 percent. Roughly 28 percent of the District's counties have a double-digit unemployment rate. This is a significant improvement from a peak of over 77 percent in October 2009, which indicates that the District's labor market is improving. Geographically, unemployment remains the highest in remote areas of Ohio and Kentucky, while rural Pennsylvania has maintained a stronger labor market.

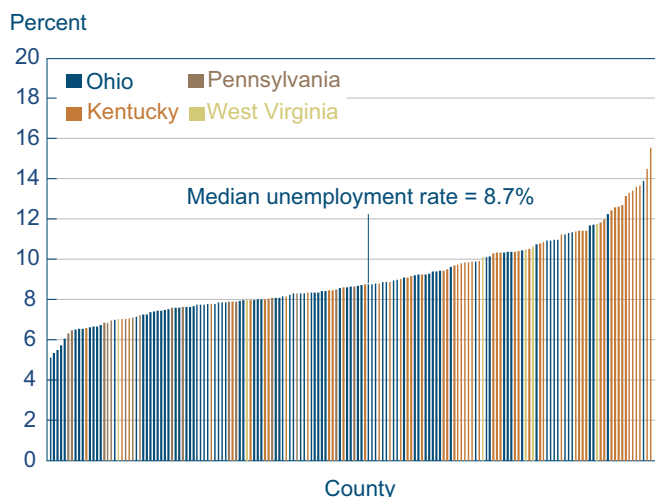
One reason to be cautious about the evident improvement in the District's unemployment rate lies in the underlying dynamics of the Fourth District's

Unemployment Rate



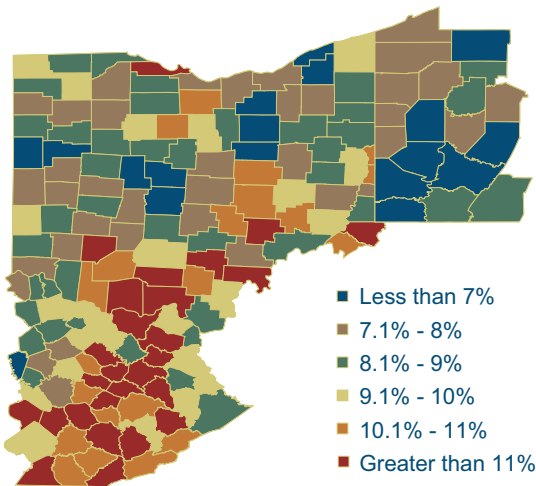
Source: U.S. Department of Labor, Bureau of Labor Statistics.

County Unemployment Rates



Source: U.S. Department of Labor, Bureau of Labor Statistics.

Unemployment Rate, December 2011

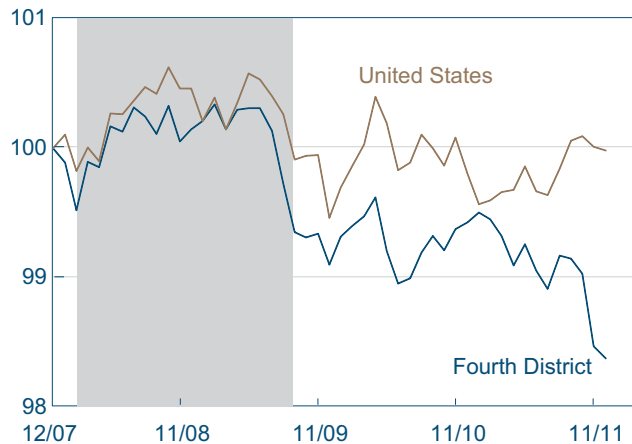


labor market. Recent changes may not be entirely due to recent economic factors but rather changing population demographics. Despite falling unemployment levels within the District, the District labor force declined by 1.0 percent, or 90,000 jobs, in 2011. Notable declines like these may call into question the true health of our District's labor market. Going forward, if these participants return to the labor force, future labor market progress may be muted.

Source: Bureau of Labor Statistics.

Civilian Labor Force

Index (December 2007 = 100)



Source: Bureau of Labor Statistics.

Starting Off on the Wrong Foot: Early Careers and High Unemployment

03.02.12

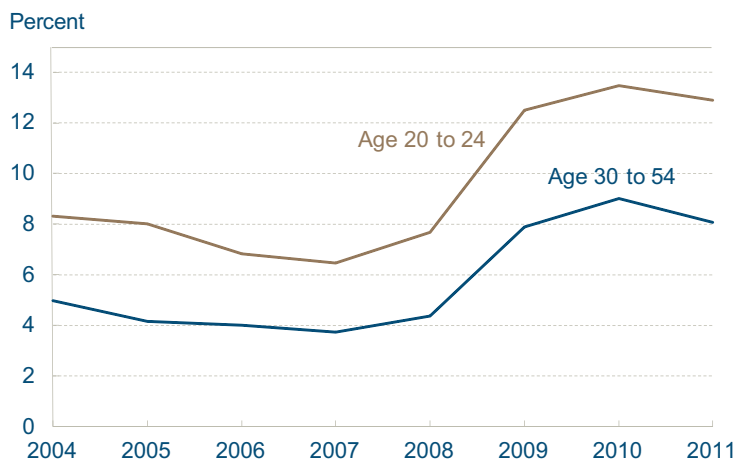
by Jonathan James

Younger workers typically face a higher rate of unemployment than their more mature counterparts. For example, in 2007, prior to the last recession, the unemployment rate for workers aged 30 to 54 was about 3.7 percent, while for workers aged 20 to 29 it was 6.5 percent. Since the recession, the situation has gotten worse. The unemployment rate for these younger workers has increased substantially, averaging about 13 percent. This 6.5 point increase was more than one-third larger than the increase for workers aged 30 to 54, whose unemployment rate has averaged about 8.5 percent over the same period.

The current challenges to finding employment raise serious questions about the prospects for young workers' life-time earnings and career outcomes. Traditionally, the early part of one's career is characterized by a period of rapid wage growth. On average, two-thirds of the wage growth experienced over people's lifetimes occurs within the first 10 years of their careers. This large increase in wages is often attributed to new workers acquiring new skills as they gain labor market experience. With this thought in mind, it is important to investigate which subpopulations have been most affected by the last recession and to investigate the driving forces behind the changes.

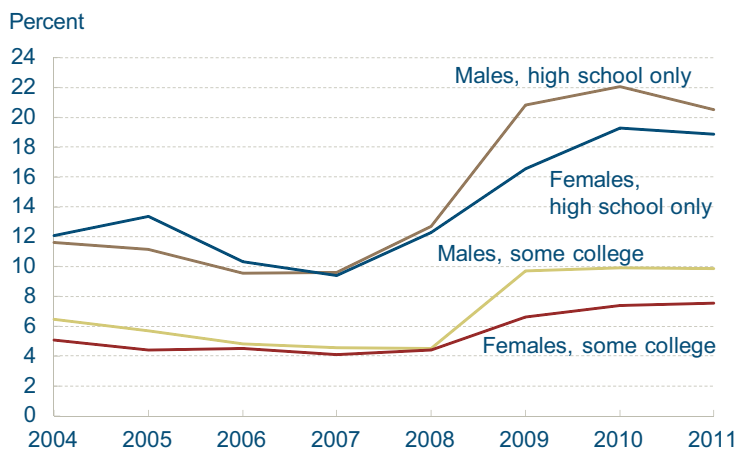
Stratifying young workers by gender and education level shows which groups have been most affected by the recession. Males with at most a high school degree saw the largest increase in unemployment. Their unemployment rate went from 9.5 percent in 2007 to slightly more than 20 percent on average after the recession. Females with at most a high school degree showed a similar pattern but on a slightly smaller scale. Females with at least some college experience saw changes in their unemployment rate well below average, and males with some college incurred changes in unemployment similar to males aged 30 to 54.

Unemployment Rate by Age



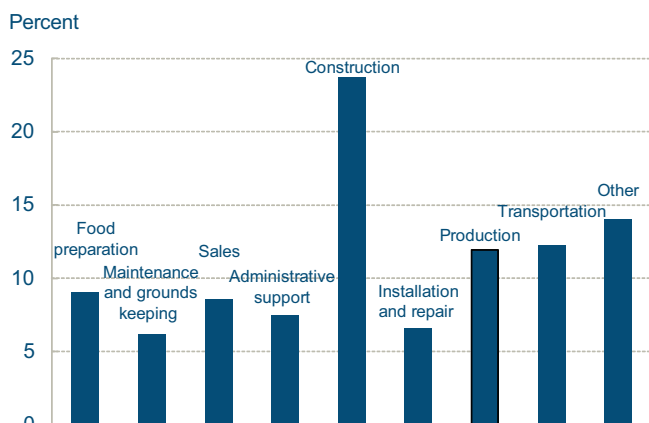
Sources: Bureau of Labor Statistics, Current Population Survey; authors' calculations.

Unemployment Rate of Workers, Ages 20–29 by Gender and Education



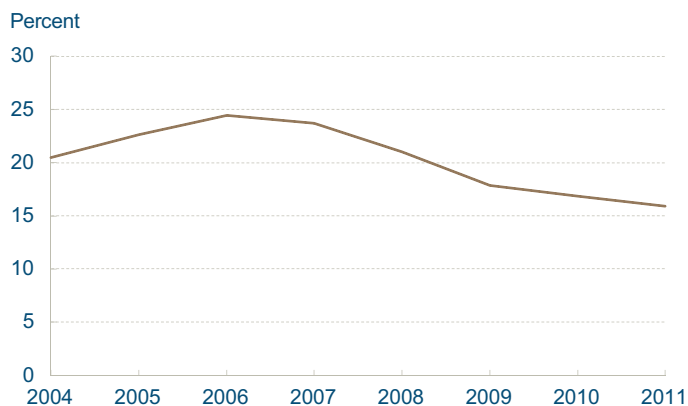
Sources: Bureau of Labor Statistics, Current Population Survey; authors' calculations.

Percentage of Males, Ages 20–29 with at Most a High School Degree, Employed in 2007, by Occupation



Sources: Bureau of Labor Statistics, Current Population Survey; authors' calculations.

Percentage of Males, Ages 20–29 with at Most a High School Degree, Employed in Construction



Sources: Bureau of Labor Statistics, Current Population Survey; authors' calculations.

Changes in Employment Patterns from 2007 to 2011 for Males Ages 20–29 with at Most a High School Degree



Sources: Bureau of Labor Statistics, Current Population Survey; authors' calculations.

Males with at most a high school degree represent about 25 percent of workers aged 20 to 29, while female workers with the same level of education comprise only 15 percent of this population. While those with high school degrees or less have been disproportionately impacted by job losses, it is the male workers in this age range who are responsible for most of the increase in the unemployment rates of younger workers.

Given the large secular decline in construction occupations that coincided with the 2007-09 recession, the driving force behind these very high unemployment rates for males is not surprising. Construction occupations are the primary entry-level job for young male workers, representing 23 percent of their total employment in 2007. Between 2007 and 2011 this fraction has fallen 7.8 points, to 15.9 percent. The sharp decline in construction employment accounts for more than two-thirds of the total decline in employment for young males with at most a high school degree and can explain about 80 percent of the change in their unemployment rate over this period.

Although unemployment rates have increased significantly for all workers, the rise in unemployment for young workers with high school degrees or less has been substantial. This is particularly true for males, whose predominant employment sector has contracted. Without a large shift to other types of employment, it is likely that these workers will continue to endure high levels of unemployment until construction jobs return. However, even if these jobs return, the effects of the recession during these formative years in what otherwise would have been a period of skill formation and productivity growth may continue to be felt throughout their careers.

Play by the (Taylor) Rules

02.17.2012

by Charles T. Carlstrom and John Lindner

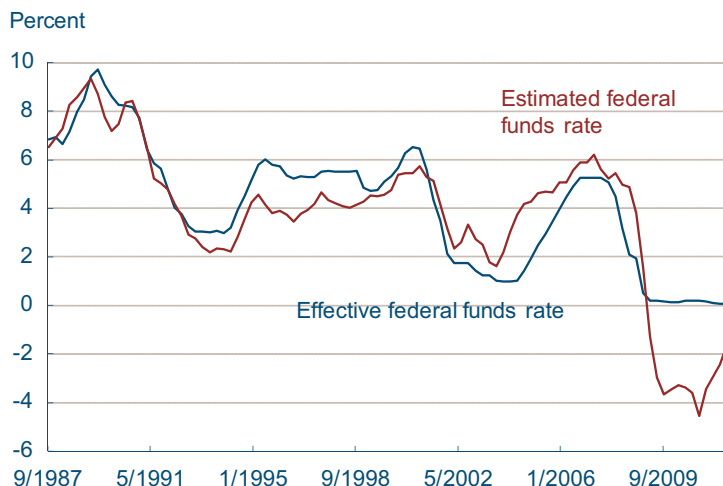
The interest rate projections released after the January Federal Open Market Committee (FOMC) meeting were another step toward increased Fed transparency. As described in a previous article, the additional information about FOMC participants' views on appropriate policy should help shape market participants' expectations for future policy actions. In the projections, each member of the FOMC described how he or she would conduct interest rate policy, given economic conditions in January and how they expect conditions to develop going forward. However, connecting the dots between the future interest rate policy and the economic data still leaves room for interpretation. Can we ascertain some of the important variables that Committee members are implicitly responding to?

Estimating a Taylor rule can help with the interpretation. The original Taylor rule was created in 1993, and it defined a relationship between the federal funds rate, the rate of inflation, and deviations of economic output from its potential. Because the FOMC has made it clear that its dual mandate dictates that both inflation and unemployment must be considered when conducting monetary policy, we modify the original rule so that the fed funds rate depends on inflation (which we take to be core PCE inflation) and unemployment. Implicit in an unemployment rate is the idea of a gap between the current and the optimal level of employment.

Our version of the rule tracked the actual funds rate fairly closely, until interest rates hit near zero and could not be lowered any further. This suggests that in the past the Committee has used something akin to this rule as a guidepost for monetary policy.

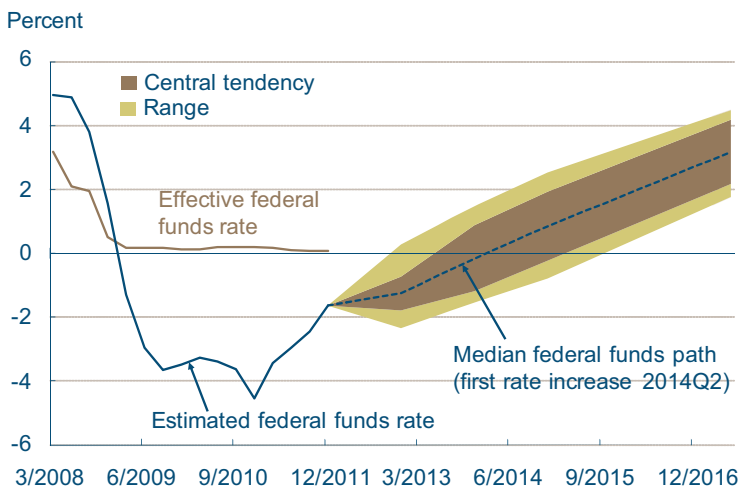
A relevant question now is whether such a rule roughly describes Committee members' views on appropriate monetary policy going forward. To get at that question, we use the FOMC's January projections for inflation and unemployment to produce a federal funds rate path into the future. We

Estimated Unemployment Taylor Rule



Sources: Federal Reserve Board; Bureau of Economic Analysis; Bureau of Labor Statistics; authors' calculations.

Estimated Unemployment Taylor Rules



Sources: Federal Reserve Board, January 2012 "Summary of Economic Projections"; Bureau of Economic Analysis; Bureau of Labor Statistics; authors' calculations.

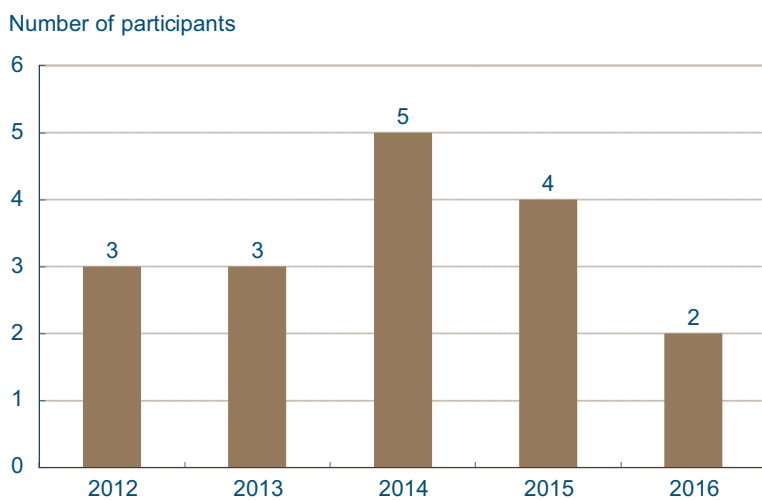
estimate the funds rate path from the first quarter of 2012 through the second quarter of 2017 in the chart below (Note: this time period is used to match the definition for the longer-run projections, representing five or six years ahead).

Because of the range of projected economic outcomes, we can produce a range of rule-implied federal funds rate paths. These paths, of course, are what the Taylor rule predicts the funds rate would be if FOMC members could set negative interest rates. The bottom of the fan represents the Taylor rule being calculated with the highest projected level of unemployment and the lowest projected rate of core inflation in any given period. (Note: we are implicitly assuming that the Committee member with the highest unemployment projection had the lowest inflation projection. This clearly may not be the case.) Similarly, the top of the fan bakes in the opposite extremes in the projections for those two variables. The darker bands do a similar exercise with the central tendency of the projections, which simply excludes the three highest and three lowest projections for each variable in each year. Finally, the median path is just the midpoint of the central tendency projections.

The value in this exercise is comparing the results from the Taylor rule to the FOMC participants' interest rate projections. The January FOMC statement, which reflects the Committee's consensus view, said that "economic conditions are likely to warrant exceptionally low levels of the federal funds rate at least through late 2014." According to the median path predicted by our unemployment Taylor rule, the first fed funds rate increase would occur in the second quarter of 2014.

We also have the entire histogram to work with, which gives the whole range of participants' expected first rate increases. The very early end of those projections shows the first possible rate increase in 2012, a date projected by three Committee members. Our unemployment Taylor rule also predicts the earliest rate increase to occur in the fourth quarter of 2012. The timing of the latest exit from near zero interest rates, as projected by FOMC participants, was in 2016. Again, the unemployment Taylor rule predicts the same year.

Appropriate Timing of Policy Firming



Source: Federal Reserve Board.

If we knock off the top and bottom three projections in the histogram, we see that the central tendency range is tighter, centered around 2014, with three participants each on 2013 and 2015. The unemployment Taylor rule does a decent job matching this central tendency. From the fan chart, the bottom of the central tendency predicts a rate increase from the zero bound in the third quarter of 2013, the same year the central tendency in the histogram would imply. If we look at the top of the central tendency, the Taylor rule and the FOMC projections both show an exit beginning in 2015.

January 2012 FOMC Projections and Taylor Rule Predictions

	<u>Bottom of range</u>	<u>Bottom of central tendency</u>	<u>Median</u>	<u>Top of central tendency</u>	<u>Top of range</u>
The timing of the first rate increase, according to:					
January 2012 SEP projections	2012	2013	2014	2015	2016
Unemployment Taylor rule	2012:Q4	2013:Q3	2014:Q2	2015:Q3	2016:Q1

Note: The central tendency excludes the three highest and three lowest projections for each variable in each year. The range includes all participants' projections, from lowest to highest, in that year. The dates in the Summary of Economic Projections (SEP) are only reported as annual numbers, so the quarter in which the rate increases would occur are unknown. Sources: Federal Reserve Board; January 2012 Summary of Economic Projections (SEP); Bureau of Economic Analysis; Bureau of Labor Statistics; authors' calculations.

It is important to keep in mind that these are very rough exercises. Obviously no Committee member would literally think that appropriate monetary policy would be to slavishly follow such a rule. There are a myriad of other factors that Committee members would also look at. Nevertheless, this exercise illustrates that such a rule roughly captures many Committee members' views of appropriate monetary policy.

Yield Curve and Predicted GDP Growth, February 2012

Covering January 21, 2012–February 24, 2012
by Joseph G. Haubrich and Margaret Jacobson

Highlights

	February	January	December
3-month Treasury bill rate (percent)	0.11	0.04	0.01
10-year Treasury bond rate (percent)	1.97	1.96	1.94
Yield curve slope (basis points)	186	192	193
Prediction for GDP growth (percent)	0.7	0.7	0.7
Probability of recession in 1 year (percent)	6.9	6.4	6.5

Overview of the Latest Yield Curve Figures

Over the past month, the yield curve has flattened somewhat, as short rates moved up while longer rates barely budged. The three-month Treasury bill rose to 0.11 percent (for the week ending February 17), up from January’s 0.04 percent and December’s 0.01 percent. The ten-year rate stayed below two percent, but not by much, coming in at 1.97 percent, just up from January’s 1.96 percent and December’s 1.94 percent. The twist dropped the slope a bit, to 186 basis points, down six points from January’s 192 bp and also below December’s 193bp.

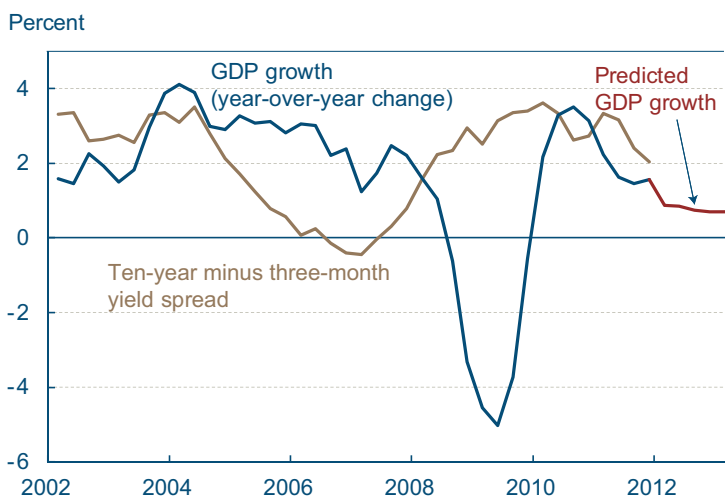
The lower slope was not enough to have an appreciable change in projected future growth, however. Projecting forward using past values of the spread and GDP growth suggests that real GDP will grow at about a 0.7 percent rate over the next year, equal to the past two months. The strong influence of the recent recession is 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.

Likewise, there was little change in the probability of 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 February at 6.9 percent, a bit above January’s at 6.4 percent, and December’s at 6.5 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.

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

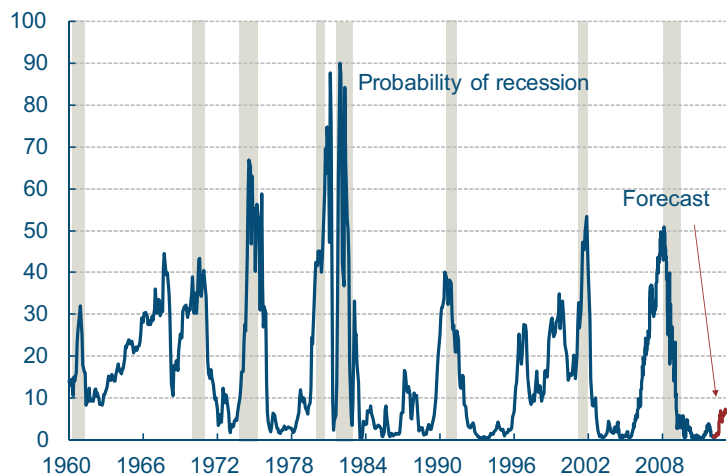
Yield Curve Predicted GDP Growth



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

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.

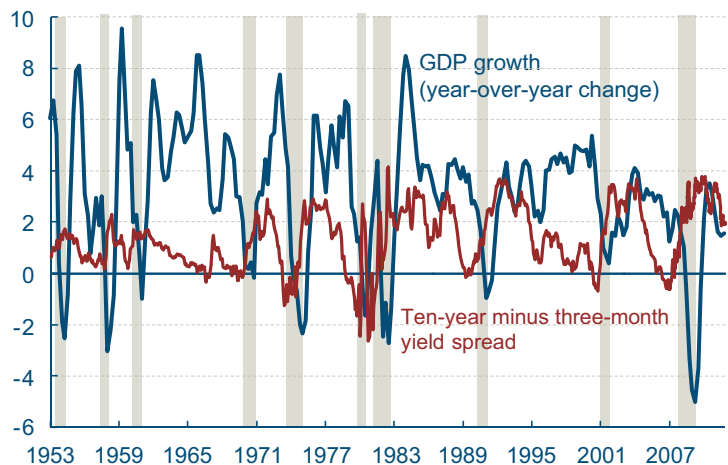
Predicting the Probability of Recession

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 materially 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

Yield Curve Spread and Real GDP Growth

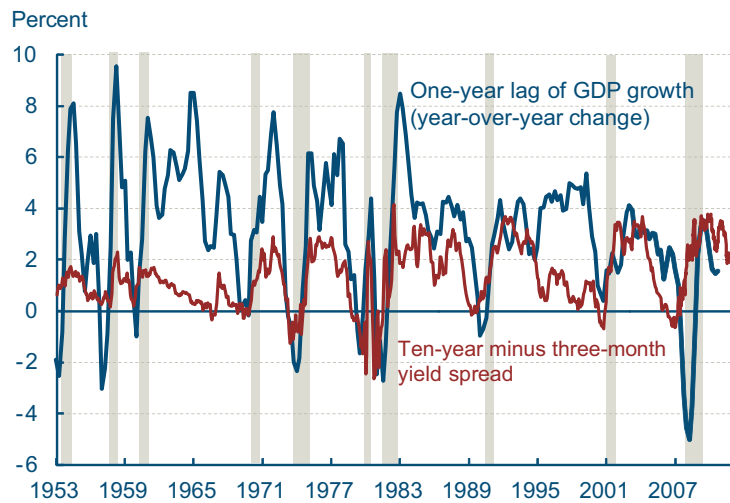
Percent



Note: Shaded bars indicate recessions.

Source: Bureau of Economic Analysis, Federal Reserve Board.

Yield Spread and Lagged Real GDP Growth



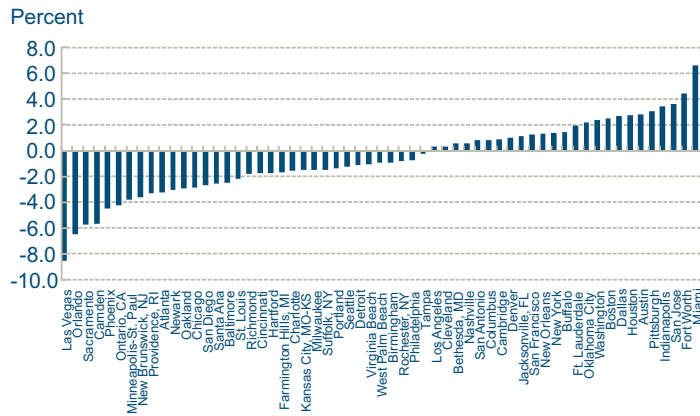
Note: Shaded bars indicate recessions.

Sources: Bureau of Economic Analysis, Federal Reserve Board.

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.

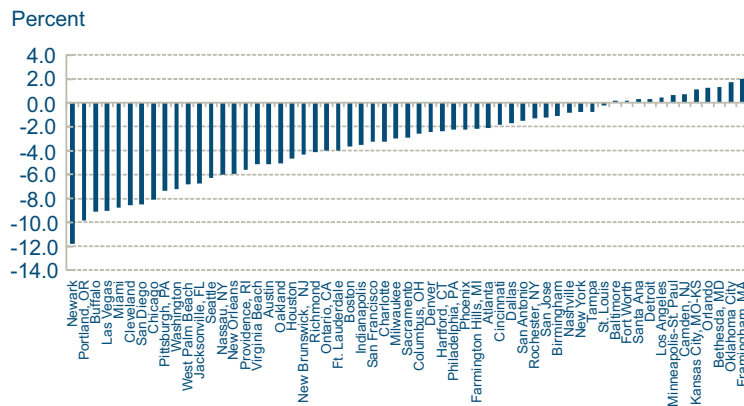
Distressed Sales and Housing Prices

Non-Distressed Home Price Growth, December 2010–December 2011



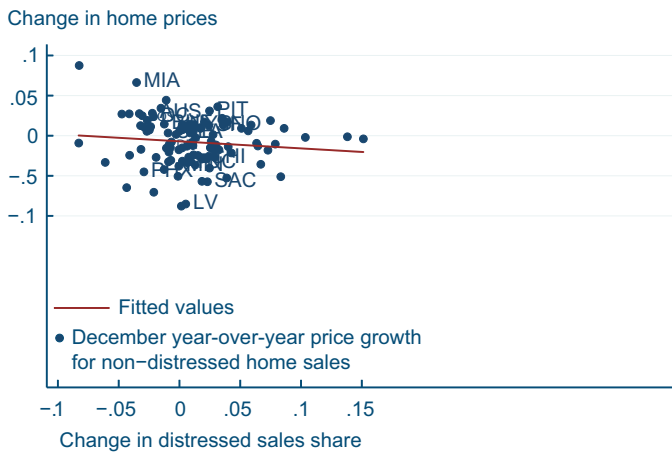
Source: Core Logic Home Price Indexes.

All Sales Home Price Growth, December 2010–December 2011



Source: Core Logic Home Price Indexes.

MSA Price Growth versus Change in Distressed Share of Sales, 2010–2011



Source: Core Logic Home Price Indexes.

02.24.2012

by Daniel Hartley

Has the housing market stabilized, or are housing prices still on a downward trajectory? Recent data suggest that the answer to that question depends upon where the home is and whether it—or nearby homes—are being sold in a “distressed” sale (foreclosure, REO, or short sale).

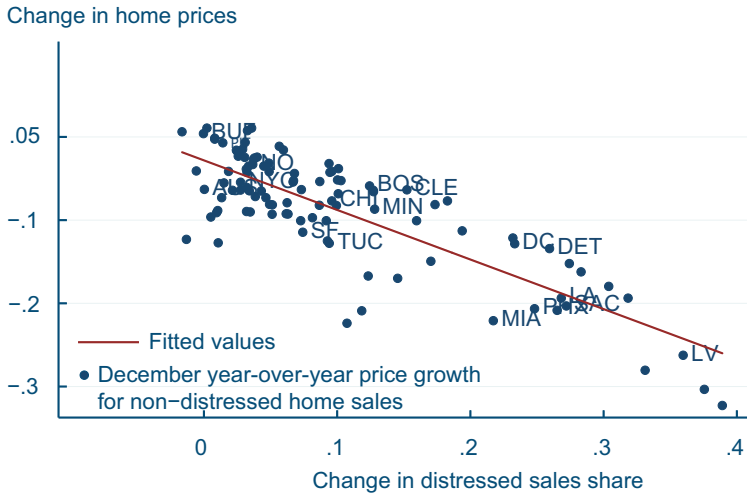
Across the 50 largest metropolitan statistical areas (MSAs), the price growth of existing homes, excluding distressed sales, ranged from –8.5 percent in Las Vegas to +6.6 percent in Miami from December 2010 to December 2011 (the most recent month available). The mean and median price change among these 50 MSAs was about –1 percent.

On the other hand, when we include distressed sales, price growth is much more negative. It ranges from –11.8 percent in Chicago to just +2.0 percent in Pittsburgh, and the mean and median change are both around –3 percent.

Nationally, the fraction of existing home sales that were distressed over the past year is around 35 percent. However, the national numbers hide much of the variation across MSAs. The fraction of distressed existing home sales ranges from 9 percent in Nassau and Suffolk Counties of New York all the way to 68 percent in Las Vegas. The problem with distressed sales is that they can pull down the value of nearby properties.

At the beginning of the foreclosure crisis, a number of MSAs experienced large increases in the share of existing home sales that were distressed. MSAs with greater increases in the share of distressed sales also experienced larger drops in nondistressed sale prices. In 2008, for example, there was a strong negative correlation between the price growth of homes sold in nondistressed sales over the year and the change in the fraction of distressed sales from 2007 to 2008 in the MSA. In 2009 this relationship weakened a bit, as most MSAs had experienced smaller increases in the fraction of sales that

MSA Price Growth versus Change in Distressed Share of Sales, 2007-2008

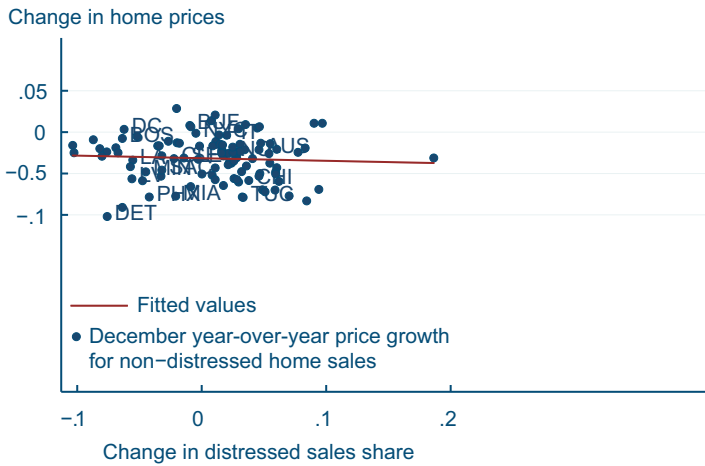


Source: Core Logic Home Price Indexes.

were distressed from 2008 to 2009 than they had from 2007 to 2008.

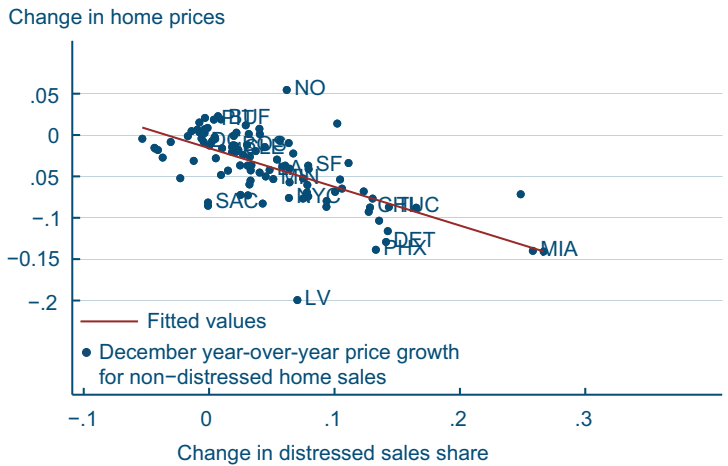
In 2010 and 2011, however, the correlation was even weaker. The fraction of distressed sales changed little from 2009 to 2010 and 2010 to 2011 in the average MSA. These two trends—the slowdown in the rising fraction of distressed sales and the moderation of price declines—could be a hopeful sign for homeowners and policymakers concerned about the detrimental effects of distressed sales on nondistressed property values.

MSA Price Growth versus Change in Distressed Share of Sales, 2009-2010



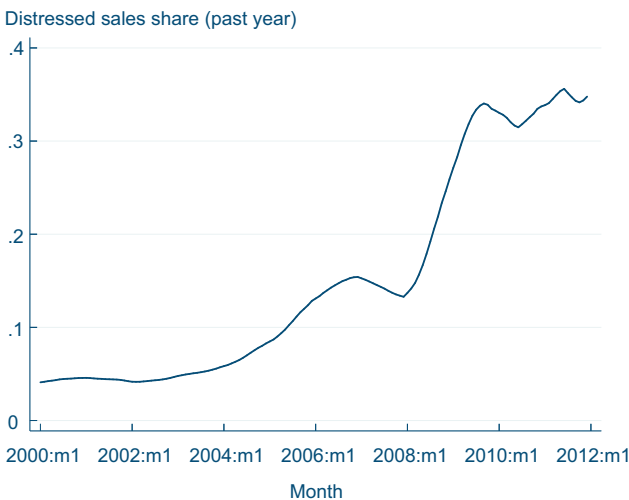
Source: Core Logic Home Price Indexes.

MSA Price Growth versus Change in Distressed Share of Sales, 2008-2009



Source: Core Logic Home Price Indexes.

Distressed Sales Share: U.S.



Source: Core Logic Home Price Indexes.

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