

# Economic Trends

July 2011 (June 10, 2011-July 12, 2011)

## In This Issue:

### Monetary Policy

- The Yield Curve and Predicted GDP Growth
- Short-Term Interest Rate Markets

### Banking and Financial Markets

- Small Business Lending Continues to Struggle

### Households and Consumers

- The Mysterious Boost in State Tax Revenues

### Growth and Production

- Is the U.S. Labor Market Becoming More Sclerotic? And Does It Matter?

### Inflation and Price Statistics

- Short- and Long-term Inflation Expectations

### Regional Economics

- Shadow Inventory Still Weighing on Ohio Housing Prices

### Labor Markets, Unemployment, and Wages

- Are Underemployed Graduates Displacing Nongraduates?

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# Yield Curve and Predicted GDP Growth, June 2011

Covering May 21, 2011–June 14, 2011

by Joseph G. Haubrich and Timothy Bianco

## Overview of the Latest Yield Curve Figures

Over the past month, the yield curve dropped and flattened slightly as both long rates and short rates dropped. The three-month Treasury bill rate dropped to 0.02 percent (for the week ending June 24), down from May’s 0.05 percent and April’s 0.06 percent. The ten-year rate dropped to 2.94 percent, down from May’s 3.15 and the lowest level since November 2010. The slope decreased 16 basis points to end at 294 basis points—again, the lowest level since last November.

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, essentially the same as for May, and just a rounding convention up from the predictions for April and March. The strong influence of the recent recession is leading toward relatively low growth rates, with a steady beat of 1 percent predictions. Although the time horizons do not match exactly, the forecast comes in on the more pessimistic side of other predictions, though like them, it does show moderate growth for the year.

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 June is 1.7 percent, up just a bit from May’s 1.3 percent and April’s 0.9 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.

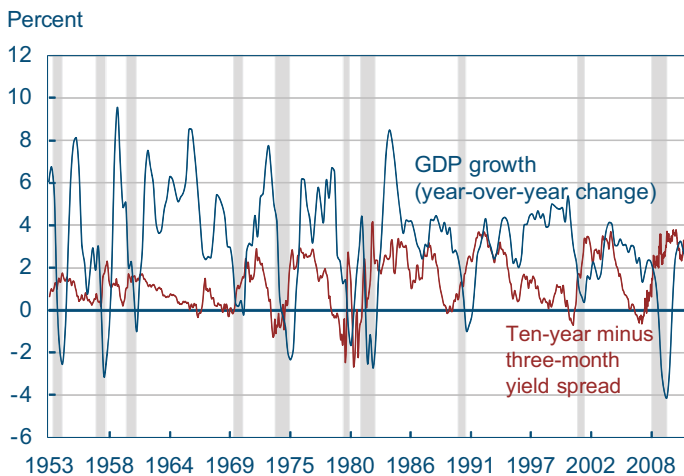
## The Yield Curve as a Predictor of Economic Growth

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 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

### Highlights

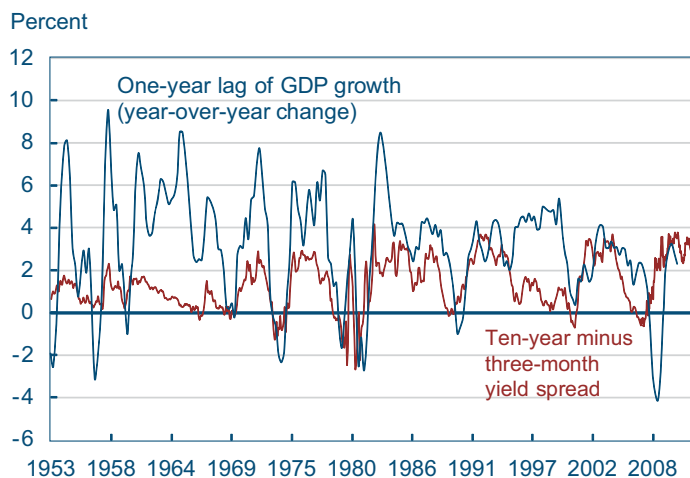
	June	May	April
3-month Treasury bill rate (percent)	0.02	0.05	0.06
10-year Treasury bond rate (percent)	2.96	3.15	3.41
Yield curve slope (basis points)	294	310	335
Prediction for GDP growth (percent)	1.1	1.1	1.0
Probability of recession in 1 year (percent)	1.7	1.3	0.9

## Yield Curve Spread and Real GDP Growth



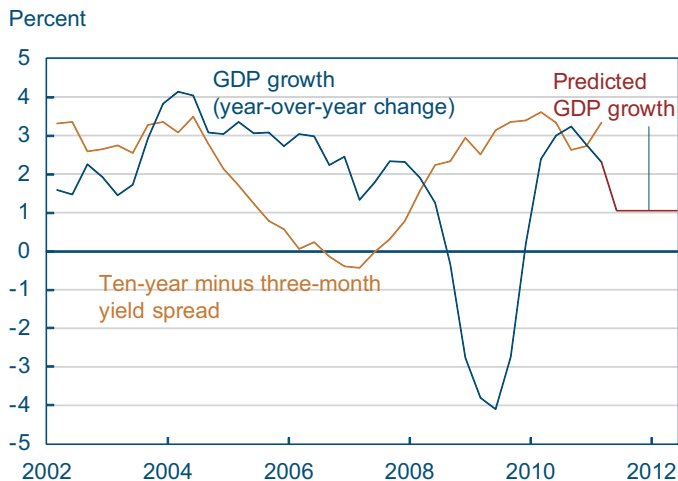
Note: Shaded bars indicate recessions.  
Source: Bureau of Economic Analysis, Federal Reserve Board.

## Yield Spread and Lagged Real GDP Growth



Sources: Bureau of Economic Analysis, Federal Reserve Board.

## Yield Curve Predicted GDP Growth



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

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.

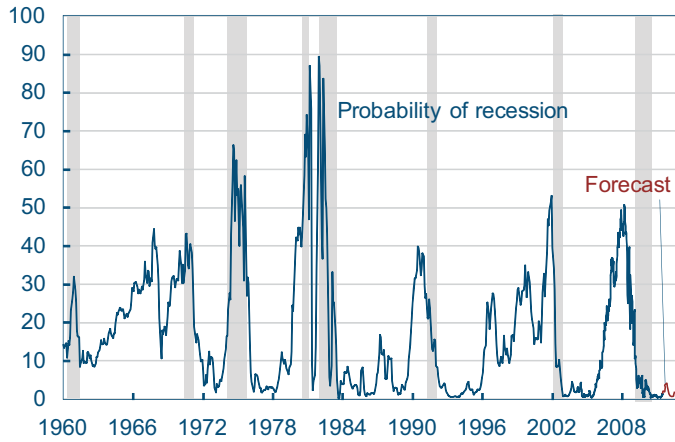
### Predicting the Probability of Recession

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 number 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 information for business cycle analysis, but, like other indicators, should be interpreted with caution. For more detail on these and other issues re-

## 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.

lated to using the yield curve to predict recessions, see the Commentary “Does the Yield Curve Signal Recession?” The Federal Reserve Bank of New York also maintains a website with much useful information on the topic, including their own estimate of recession probabilities.

## Short-Term Interest Rate Markets

06.23.11

by Todd Clark and John Lindner

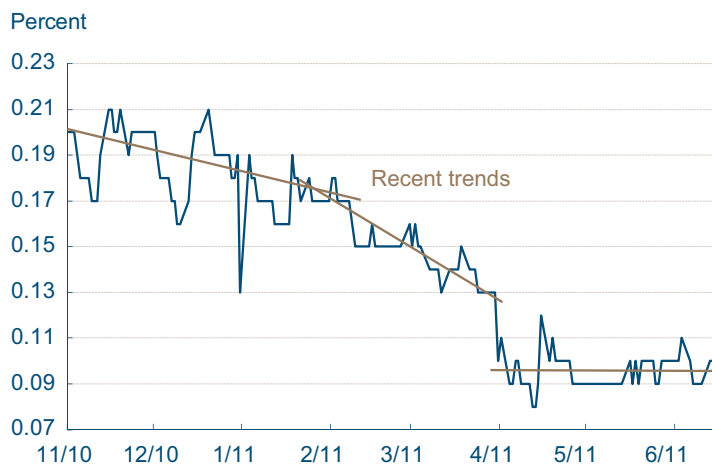
A series of events dating back to November 2010 has significantly affected the functioning of short-term funding markets and, in turn, interest rates. The effects of these events can be seen in the trends of not only the federal funds market, but also the repo, commercial paper, Libor, and Eurodollar markets. Collectively, these developments—some of them having nothing to do with monetary policy—have served to ease short-term financing terms. Eventually, when the Federal Reserve begins to raise the target for the federal funds rate, it will probably need to take account of the dynamics of these changes in short-term funding markets.

Historically, the federal funds rate has been the primary instrument of monetary policy. Daily federal funds rates since November 2010 fall loosely into a series of three trends, all of which can at least be partially explained by an event that has influenced market participants.

In November, the Fed announced the second round of large-scale asset purchases, which consisted of the Fed buying \$600 billion in Treasury securities through the end of June 2011. From early November there was a steady decline in the federal funds rate from about 20 basis points to 17 basis points. The purchases increased the supply of reserves in the federal funds market, which pushed down the price, the federal funds rate. Put another way, the increased supply forced cash investors to compete in the market at lower interest rates.

Similarly, the decision by the Treasury in early February 2011 to wind down its Supplemental Financing Account balance inserted more reserves into the market for cash investors to place. Combined with the asset purchases, this move accelerated the decline in the federal funds rate. This acceleration was reflected in another 4 basis point decline, from 17 basis points to 13 basis points, over the following two months.

### Federal Funds Rate



Sources: Federal Reserve Board.

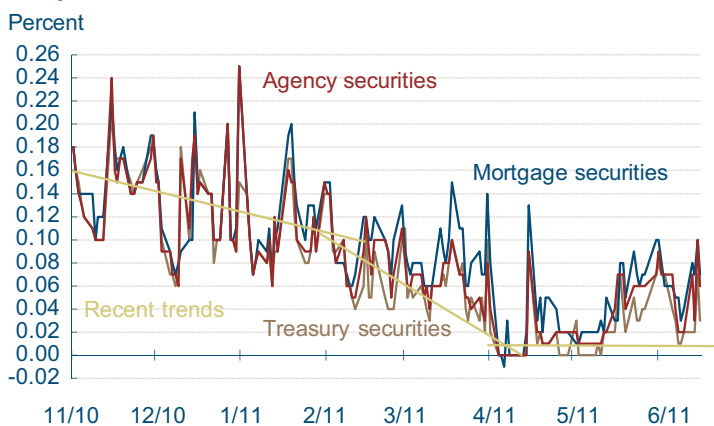
By far the most studied of the three events, however, has been the change in the FDIC assessment base for deposit insurance. Many observers have argued that this is the move that caused the dramatic drop in the federal funds rate at the beginning of April, and it has also been credited for holding the effective rate at a fairly constant level of 10 basis points.

With the new FDIC assessment policy, insured depository institutions will be charged an insurance premium not on their amount of deposits, but on the difference between their total assets and their equity. Broadly speaking, this equates to their liabilities, but there are some subtleties that we're going to skip over. Due to the change in the assessment base, depository institutions are now forced to pay an extra fee for any financed assets, including funds that they might borrow in the federal funds market. Since many of the funds available in the federal funds market are provided by non-bank institutions, the current primary purpose of borrowing these funds is to earn the interest on reserves (IOR) available at the Fed. So, banks are making the difference in the two rates (fed funds and IOR) as a profit. The new assessment implicitly increases the cost of the federal funds by adding that assessment rate onto the fed funds rate. As a result, some banks have exited the market, reducing overall demand for the funds dramatically. The fall in demand has reduced the funds rate.

A trend similar to that seen in the federal funds market can also be seen in a variety of repo markets. Repo markets function as a secured form of the federal funds market. Many of the market participants are the same, with banks borrowing funds and cash-heavy investors providing the funds. Because the three events explained above also relate to the supply and demand of these funds, the effects of those events also translate into the repo markets.

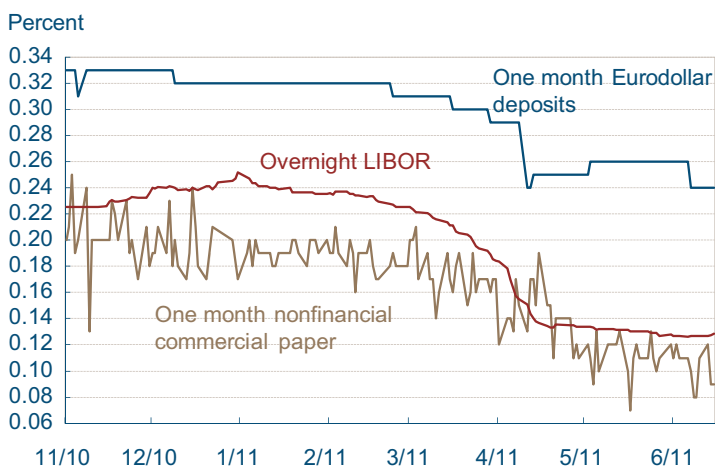
The repo markets saw the largest decline of all short-term money markets, with the trend in the rates falling from an average level of roughly 16 basis points to 4 basis points, with considerable volatility around the trend. Starting in November, there was a very gradual rate decline as extra cash started to flood the market, and that decline picked up as

## Repo Rates



Source: ICAP.

## Other Short-Term Interest Rates



Sources: Federal Reserve Board; Financial Times.

the Treasury reduced its Supplemental Financing Account (SFP). A slight difference in these markets is the need for banks to provide collateral when they are borrowing, which also contributed to the volatility in the rates. The supply of collateral was reduced somewhat by the Fed's asset purchases and the reduction in the SFP, so there was a slightly larger drop in demand for repo funds.

Cash investors seem to have moved into other short-term markets in search of high returns. The new supply in these markets is evident in the declines in the London interbank offered rate (Libor), Eurodollar, and commercial paper interest rates. The declines were similar for all of these markets, with rates trending down gradually between November 2010 and March 2011, and dropping more dramatically starting in early April 2011 when the FDIC assessment kicked in. Examining current rates, all but those for Eurodollar deposits are now below 15 basis points. The decline in interest rates for longer-term loans in these markets also suggests some effort by investors to reach for better returns. One-month repo and one-month Libor rates have seen 5 basis point declines over recent months.

A number of near-term developments may affect these markets. The Fed will soon be ending its asset purchases, which should stop the flow of new liquidity into the market and allow time for a fuller evaluation of the effects of the purchases. Also, the FDIC assessments that took effect at the beginning of April will not be collected until the end of June, so banks may make adjustments to their market participation based upon their realized FDIC fees. Finally, the resolution of the debt ceiling situation could also have an impact on the functioning of short-term markets.

## Small Business Lending Continues to Struggle

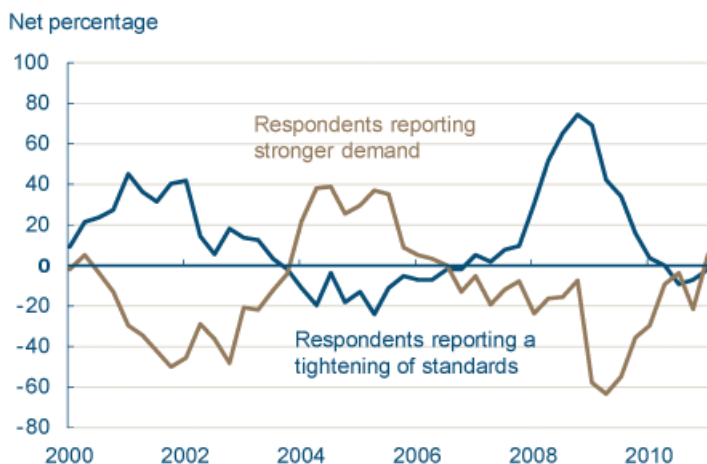
06.27.11

by Matthew Koepke and James B. Thomson

As the economy continues to grow at an anemic pace, questions remain about the condition of small business lending. The most recent data on conditions are mixed. On one hand, the Federal Reserve Board's senior loan officer survey on bank lending practices suggests that the lending environment has been improving for small business owners. In the most recent survey, the net percentage of senior loan officers reporting tighter lending standards for C&I loans for small business dropped to -1.9 percent. Moreover, according to the survey, demand increased, with a 5.6 net percentage of senior loan officers reporting increased demand for C&I loans from small businesses, the first time the series has turned positive since June 2006. On the other hand, the most recent data from the FDIC suggests that small business lending by FDIC-insured banks and thrifts remains weak.

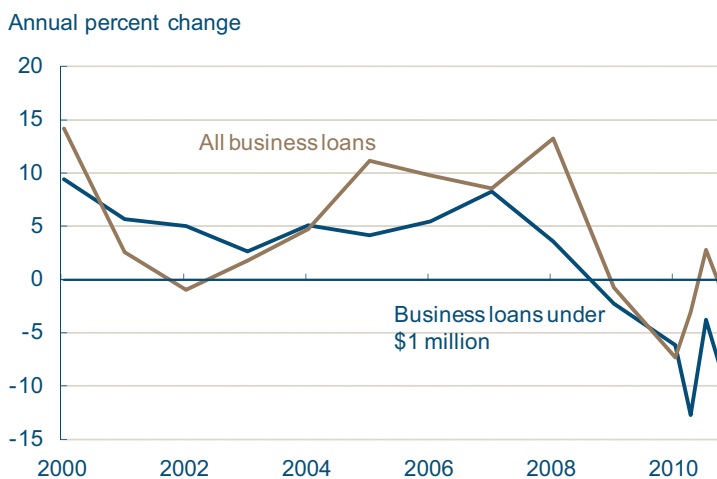
Since the beginning of the recession, the level of small business lending has fallen considerably. In the years leading into the recession (2000 to 2008), overall business loan portfolios at FDIC-insured institutions grew on average 7.2 percent per year, and small business loan portfolios (loans under \$1 million) grew on average 5.5 percent a year. After the recession, (from 2009 and 2010), overall business loan portfolios have declined 4.0 percent on average, and small business loan portfolios have declined 4.2 percent on average. While total loan portfolios and small business portfolios declined in a similar manner from 2009 and 2010, their performance has been uneven over the past year. From the first quarter of 2010 to the first quarter of 2011, small business loan portfolios have shrunk 8.6 percent while overall business loan portfolios have fallen only 0.9 percent. It is difficult to tell, however, if total loan portfolios will continue to outperform small business loan portfolios going forward. Though they seemed to hit a positive inflection point in the fourth quarter of 2010, since the first quarter of 2011 they have started to decline.

### Senior Loan Officer Survey: Supply and Demand of C&I Loans to Small Firms



Source: Board of Governors.

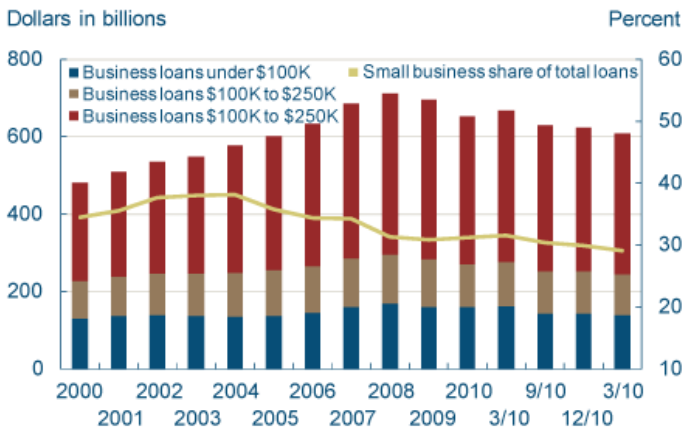
### Small Business Loan Balances



Source: FDIC.



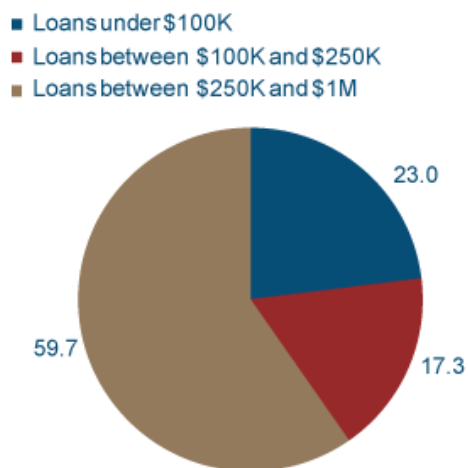
## Small Business Loan Balance



Source: FDIC.

## Small Business Loan Share: Amount

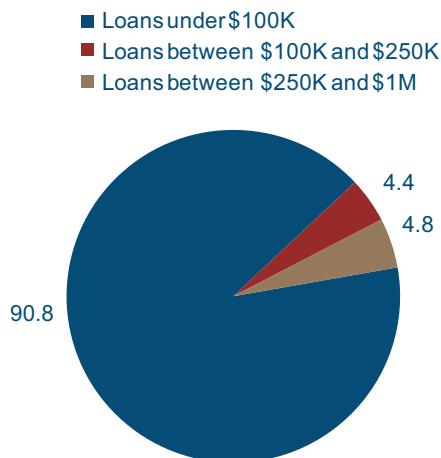
Percent, 2011:Q1



Source: FDIC.

## Small Business Loan Share: Volume

Percent, 2011:Q1



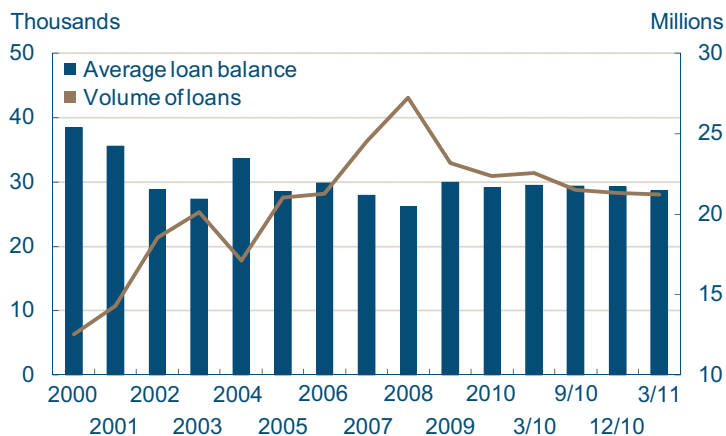
Source: FDIC.

A more granular examination of small business loans held by FDIC-insured banks and thrifts shows that loans to small businesses have been declining across all loan segments. Small business loans peaked in June 2008 at \$711 billion. Since then, total holdings of small business loans have declined 14.3 percent through the first quarter of 2011 to just under \$610 billion. Moreover, declines have been seen across all size categories. Loans under \$100,000 declined 18.1 percent, loans between \$100,000 and \$250,000 declined 16.7 percent, and loans between \$250,000 and \$1 million declined 12.1 percent. Not surprisingly, the weakness in small business lending has caused small business loans as a share of total business lending to decline through the first quarter of 2011, to 29.1 percent.

The composition of small business loan portfolios has had a major impact on the balances of small business loans held by FDIC-insured banks and thrifts. Loans between \$250,000 and \$1 million constitute the largest percentage of the total dollar amount of small business loans at 59.7 percent but are only 4.8 percent of the total volume of small business loans. This distinction is important since from 2000 to 2008 the growth in small business loans held by FDIC-insured institutions was driven by strong growth in the number of loans issued under \$100,000. Over the 2000 to 2008 time frame, the volume of small business loans under \$100,000 grew 13.9 percent compared to 6.0 percent for loans between \$100,000 and \$250,000 and 6.8 percent for loans between \$250,000 and \$1 million. As a result of their influence on loan growth from 2000 to 2008, loans under \$100,000 were the primary drivers in the declines in loan balances from 2008 to present.

The shrinkage in small business loan portfolios from 2008 to 2010 can be attributed to a combination of declining loan balances (falling 4.2 percent a year) and a decline in the number of loans (falling 9.1 percent). The largest declines were seen in loans under \$100,000, where volumes fell 9.7 percent compared to declines of only 1.2 percent for loans between \$250,000 and \$1 million and 4.0 percent loans between \$100,000 and \$250,000. The FDIC's most recent first-quarter data show that small business loan balances have declined at an

## Small Business Loans Under \$1 Million



Source: FDIC.

annualized rate of 8.6 percent, having fallen \$57.1 billion over the year. While loans under \$100,000 accounted for the biggest declines in loan balances held by FDIC-insured institutions (falling 14.0 percent), the declines were more likely attributed to smaller average loan balances (falling 8.8 percent) than declines in volumes. Volumes for loans under \$100,000 fell only 5.7 percent compared to 6.4 percent for loans between \$100,000 and \$250,000 and 9.3 percent for loans between \$250,000 and \$1 million.

While the most recent senior loan officer survey suggests conditions are improving for small business lending, the most recent data from the FDIC shows that small business lending continues to struggle. Until there is an improvement in loan volumes, particularly in loans under \$100,000, small business loan balances held by FDIC-insured banks and thrifts are not likely to improve.

# The Mysterious Boost in State Tax Revenues

06.21.11

by Daniel Carroll

In year-over-year terms, state tax revenues have been rising throughout 2010, reaching a high of 6.8 percent real growth in the fourth quarter. Given the dramatic impact of the recession on their budgets, state governments will certainly welcome this positive news. This is especially the case as federal aid to states is set to dry up at the end of August. There is reason to be cautious when evaluating these data, however, because it is unclear where the surge in revenue is coming from.

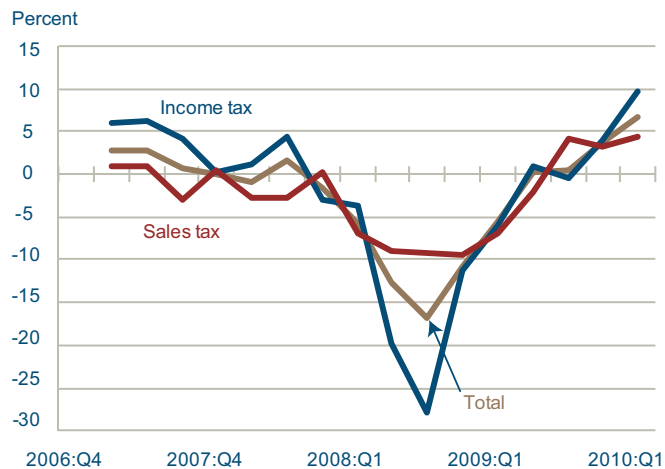
Although there is considerable variation across states in the composition of their revenue, on average states get most of their revenue from taxes. A substantial fraction of revenues comes from federal transfers, and a little less than 20 percent comes from fees and other miscellaneous items. With federal aid scheduled to be reduced in September of this year, the importance of taxes is going to rise.

Just as with the composition of revenue overall, the composition of state tax revenue differs widely across states. On average, however, about two-thirds of state tax revenue comes from two primary tax sources: personal income taxes and sales taxes. Both of these tax sources have been rising in the past four quarters relative to the year before.

The rise in sales tax revenue is not surprising; consumption has been rising as well. The sharp increase in personal income tax revenue, however, is harder to explain. Breaking out the major taxable components of income (as defined by the Rockefeller Institute of Government) does not reveal the source of the increase. Real growth in wages and salaries, nonfarm proprietor's income, and interest and dividend income have all remained below 2 percent.

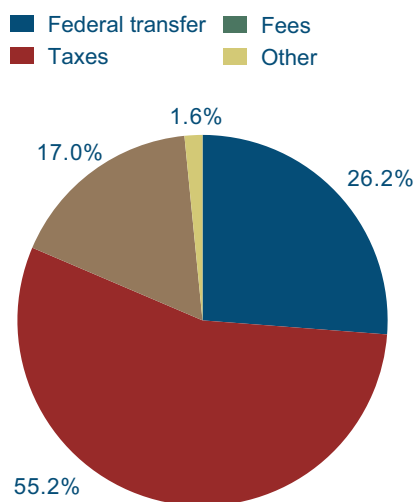
What then can account for the rise in income tax revenues? One likely suspect is capital gains. Capital gains are realized only when assets are sold, and investors' decisions to sell are influenced not just by the degree to which their assets have increased in value but also by concerns about the cut that taxes

## Four-Quarter Percentage Change in Tax Revenue



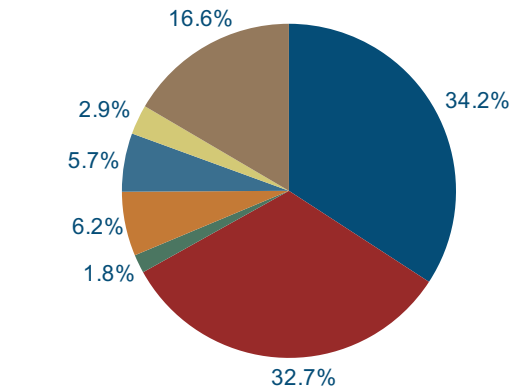
Sources: Rockefeller Institute of Government; Bureau of Economic Analysis.

## Composition of Total State Revenues (Average 1980-2008)



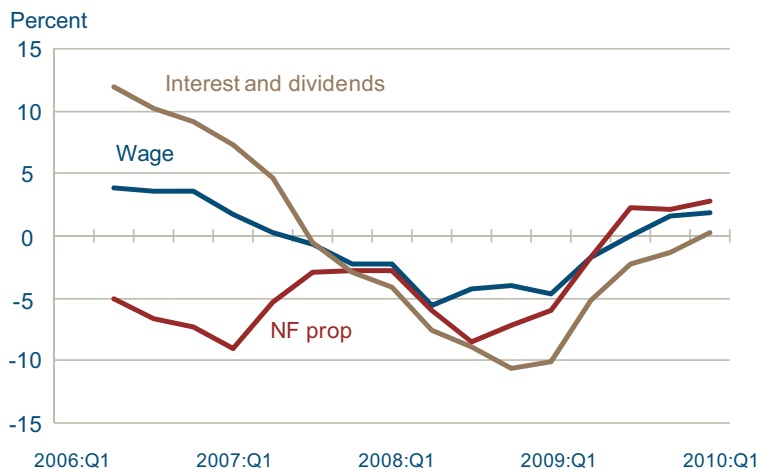
Source: Bureau of the Census.

## Composition of State Revenues (Average 1994-2010)



Source: Bureau of the Census.

## Four Quarter Percent Change in Major Components of Taxable Income



Source: Bureau of Economic Analysis.

will take from those gains. Potential tax changes were being discussed in 2010 that could have raised capital gains taxes, and uncertainty about the future tax burden may have encouraged investors to take their capital gains before the start of the new year.

There are two reasons to suspect that such uncertainty caused capital gains to be especially high in 2010. First, there was uncertainty well into December of 2010 over whether federal tax rates on capital gains would rise back to their pre-2001 values. Faced with the possibility of tax rates rising steeply if tax law were allowed to sunset and no realistic chance of those tax rates declining, some individuals may have chosen to realize their capital gains before the end of 2010.

Second, a law removing income restrictions on the conversion of a traditional IRA to a Roth IRA went into effect in 2010. Making that conversion requires taxes to be paid on the amount converted. As a special one-time offer, the IRS did allow individuals to spread the capital gains from converting over 2011 and 2012, but some individuals, being uncertain about the future of capital gains tax rates, may have chosen to realize the gains in 2010.

Either of these factors would result in increased income taxes for states that tax capital gains. Unfortunately, it is nearly impossible to ascertain at this time whether those gains were the source of states' surprise revenue boost. The states don't report capital gains revenue consistently or in real time, if at all. So for now, we can only surmise. But this likely scenario suggests that the boost could be as transitory as it is mysterious.

## Is the U.S. Labor Market Becoming More Sclerotic? And Does It Matter?

07.05.11

by Pedro Amaral

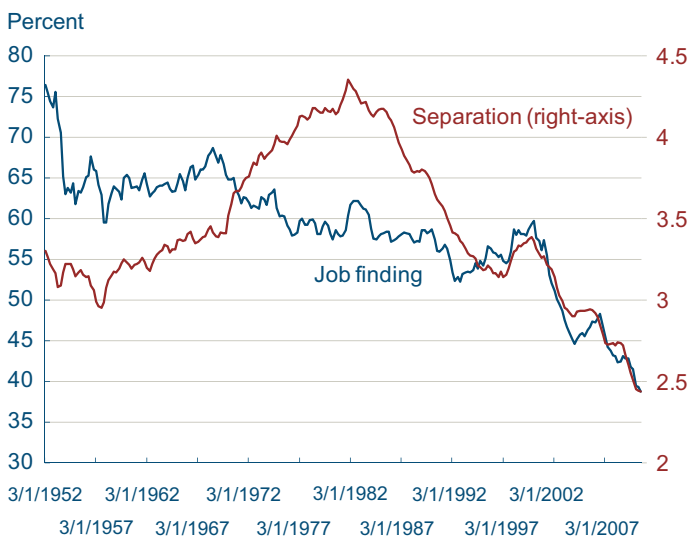
The U.S. economy continued to exhibit signs of a painfully slow recovery in the last month. In particular, labor markets seem to be front and center in setting the sluggish pace. One long-term trend that was confirmed in the latest recession is that there is less churning in the labor market. My colleague Murat Tasci keeps track of long-term trends in worker movements into and out of jobs, and his findings show that job-finding rates have been declining since the 1950s, while separation rates have exhibited the same tendency since the early 1980s.

Reduced rates of worker turnover are usually associated with the more regulated labor markets of some European countries, and it is because of their slower turnover that those labor markets have been characterized as sclerotic. Now that it is clear that the U.S. labor market is becoming more sclerotic, too, the question is whether it matters, in the sense of whether it is detrimental to the growth of the U.S. economy. So far, the answer appears to be no. There are at least three ways in which reduced worker flows might be harmful to the economy, and none appears to be showing up in the U.S.

The first is that reduced turnover may contribute to higher unemployment. While the unemployment rate has certainly gone up in the last four years, its trend was clearly negative through the early 1980s and up until the mid-2000s. In fact, low job-finding rates can be compatible with either high or low unemployment rates. It all depends on whether the separation rates are high or low.

Second, lower turnover could reflect the fact that searching for jobs and workers has gotten costlier or harder, resulting in poorer worker-job matches, and therefore lower productivity. Firms and workers are involved in a bilateral sorting and matching process, and high rates of churning can be an indication that the process is working, while low rates would indicate that either firms or workers (or both) are settling for matches that are substantially

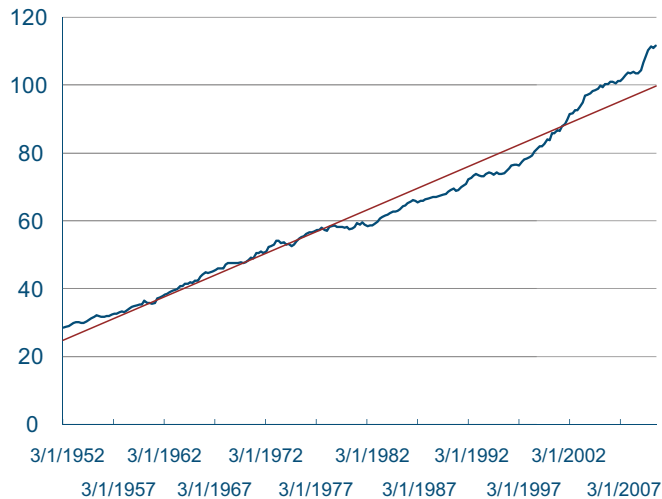
### Quarterly Worker Flow Rates



Sources: Bureau of Labor Statistics; Tasci, Murat. 2011. "High Unemployment after the Recession: Mostly Cyclical, but Adjusting Slowly", Federal Reserve Bank of Cleveland, *Economic Commentary*.

## Output per Worker

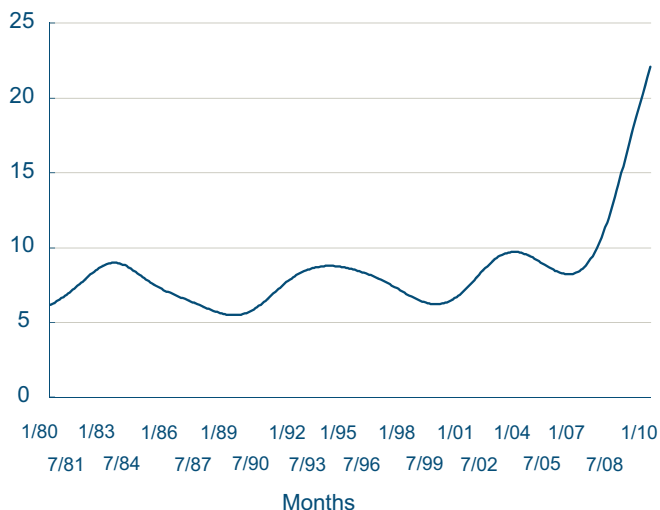
Index (2005=100)



Source: Bureau of Economic Analysis.

## Median Unemployment Duration (Trend)

Weeks



Source: Bureau of Labor Statistics.

suboptimal. What is optimal, of course, depends not only on the quality of the match, but also on the costs of searching. If it is the case that search costs have increased in the U.S., then one should see poorer-quality matches, as firms and workers settle earlier in the searching process. But when we look at labor productivity as a proxy for match quality, we get no such picture. Labor productivity has been growing at a fairly constant rate. The same is true, by the way, when we look at multifactor productivity measures, which take into account not only how productive labor is but also how productive capital is at the same time.

A different story, one that seems to better match the data, is that firms and workers have become increasingly more efficient at sorting and matching, and therefore they are able to generate similar quality matches while searching less. This efficiency should come as no surprise when one considers that information dissemination in job searching (for both firms and workers) is not even remotely comparable to what it used to be 30, or even 20 years ago, when the internet was not around.

Finally, the third way reduced turnover might harm the economy is by increasing unemployment durations. The idea is that diminished worker flows may give rise to longer unemployment spells, which in turn would imply larger skill losses and lower productivity once long-unemployed workers get a job. Again, note that decreasing worker flows do not necessarily imply longer median unemployment spells. Unemployment duration only started to increase in any meaningful way in the mid-2000s, while worker flows have been decreasing since the mid-1980s.

One final word regarding the effects of long unemployment spells. While their negative effects are clear, and that is what economists focus on most of the time, let me play devil's advocate and point to some theoretically possible positive effects. I say theoretical because I know of no research that empirically supports my hunches, nor am I arguing that these effects dominate the negative ones. But if long unemployment spells fall disproportionately on those whose skills are becoming irrelevant or obsolete, a long period without a job might work

to provide workers with the right incentives to retool. If I am an unemployed typewriter repairman who is going through a spell of unemployment that I estimate will last a week or two, I have less of an incentive to go back to school and become a Java programmer, say, than I would if I estimated the unemployment spell would last a whole year. To understand the importance of this effect, we will need to know more about who the long-term unemployed are.

## Short- and Long-term Inflation Expectations

07.05.11

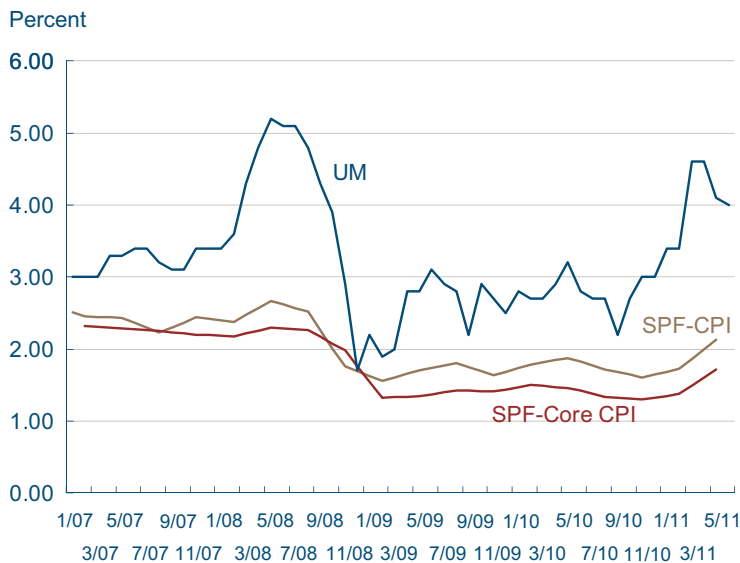
by Mehmet Pasaogullari

Inflation as measured by the Consumer price index (CPI) has picked up in recent months, following increases in food and energy prices. As of May, the annual inflation rate is 3.4 percent. Although some of these increases have reversed course, particularly energy prices, some households and market participants are still worried about an impending inflationary period. Those who are concerned point to the accelerating pattern in underlying inflation measures, such as the core CPI (CPI excluding food and energy prices). For example, the annual core CPI inflation rate increased from 1.0 percent to 1.5 percent from January to May, and near-term (3-month annualized) core CPI inflation increased from 1.4 percent to 2.5 percent over the same period.

Since concerns about future inflation are picking up, it's a good time to review various measures of inflation expectations. After all, expectations about future inflation are both an important predictor and a factor in future inflation. We will look at near- and longer-term measures from two surveys, the University of Michigan's Survey of Consumer Attitudes and Behavior (UM) and the Philadelphia Fed's Survey of Professional Forecasters (SPF). We'll also look at a measure based on information in market prices (breakeven inflation rates calculated from TIPS and nominal Treasuries) and another estimated from the Cleveland Fed's (FRBC) model of inflation expectations. Note that for the survey measures, I analyze the median responses for the expectations.

UM 1-year expectations rose sharply in the first quarter of 2011. They rose 1.6 percent during the quarter and reached 4.6 percent at the end of March, following the food and energy price increases. It has long been argued that these inflation expectations series are sensitive to energy prices, and since April, oil prices have declined, as have these expectations. Currently, the 1-year UM expectation

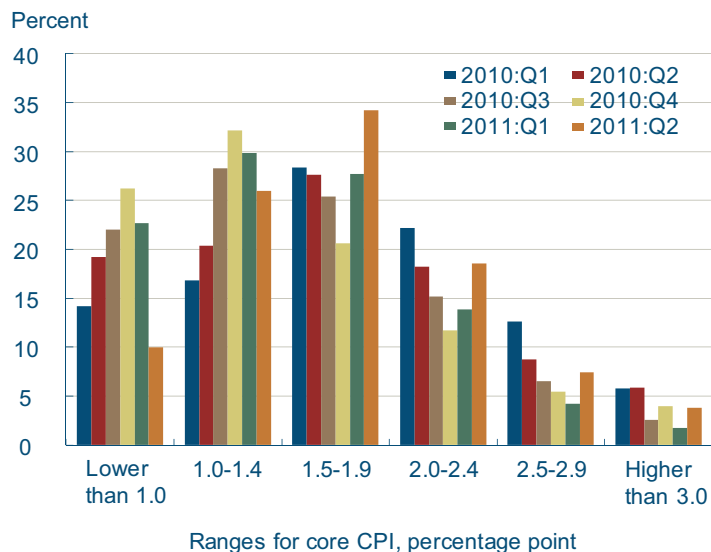
### Survey One-Year Inflation Expectations



Sources: Survey of Professional Forecasters; University of Michigan.



## 2011:Q4 Core CPI Probabilities



Sources: Federal Reserve Bank of Philadelphia; author's calculations.

for inflation is at 4.0 percent, still about 1 percent higher than its average since 2000.

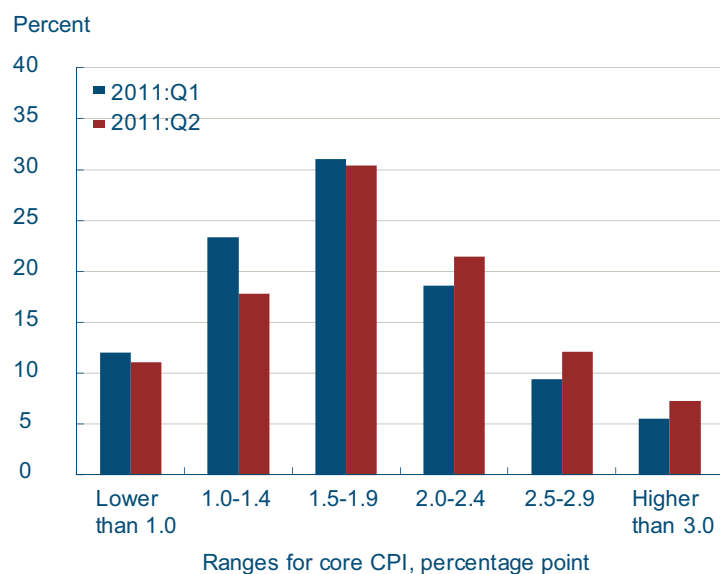
Short-term SPF inflation expectations increased as well in the last quarterly survey. The median expectation for 1-year CPI inflation rose by 0.4 percent to 2.1 percent, while the 1-year core CPI inflation expectation rose to 1.7 percent from 1.4 percent.

When we look at individual responses in both surveys, we see that the dispersion among UM survey respondents has declined, while the dispersion among SPF respondents has increased. Although about 80 percent of the respondents revised their short-term inflation expectations for both core and headline inflation upwards, the changes are higher in the right tail of the distribution, leading to an increase in the dispersion.

In 2007, the SPF survey began to ask respondents to assign probabilities to the ranges they were predicting for the current and the next year's annual core CPI inflation rates. In the first two quarters of 2011, the probability they assigned to core CPI inflation ending 2011 between 1.5 percent and 2.5 percent increased. As of May 2011, survey respondents thought that core CPI inflation would most likely be in the 1.5 percent—2.0 percent range at the end of 2011, as they assigned this outcome a 34 percent probability on average. The probabilities they assigned to the 1.0 percent—1.5 percent range and the 2.0 percent—2.5 percent range are 26 percent and 19 percent, respectively. The 1.5 percent—2.0 percent range is also seen as the most likely event for core CPI inflation in 2012, with an average probability of 30 percent. The probability of a 2.0 percent—2.5 percent range in 2011 is 21 percent.

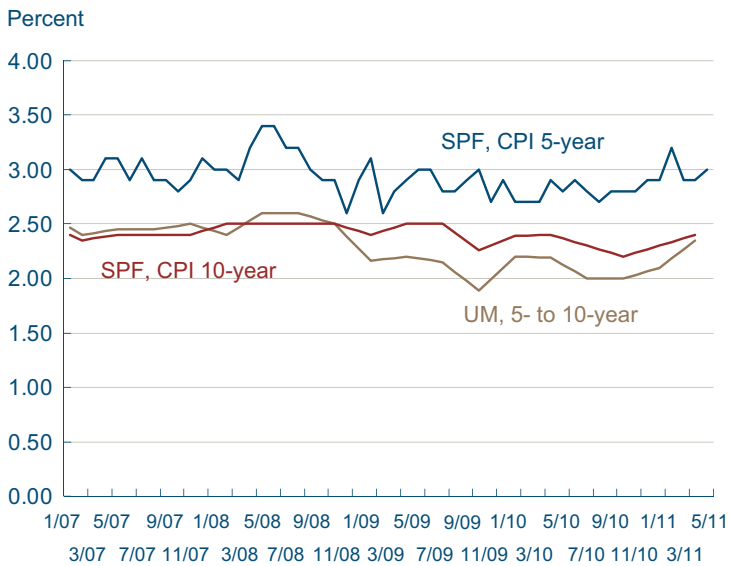
The UM expectation for long-term (5 to 10-year) inflation declined to 2.9 percent in April from 3.2 percent in March and rose slightly to 3 percent in June. Meanwhile, SPF expectations for longer-term inflation have risen. The median of the 5-year expectation rose to 2.4 percent from 2.1 percent in the May survey. The median of the 10-year inflation expectation, on the other hand, ended up 0.1 percent higher at 2.4 percent. However, these increases reflect the convergence of the series to the

## 2012:Q4 Core CPI Probabilities



Sources: Federal Reserve Bank of Philadelphia; author's calculations.

## Survey Long-Term Inflation Expectations



Sources: Survey of Professional Forecasters; University of Michigan.

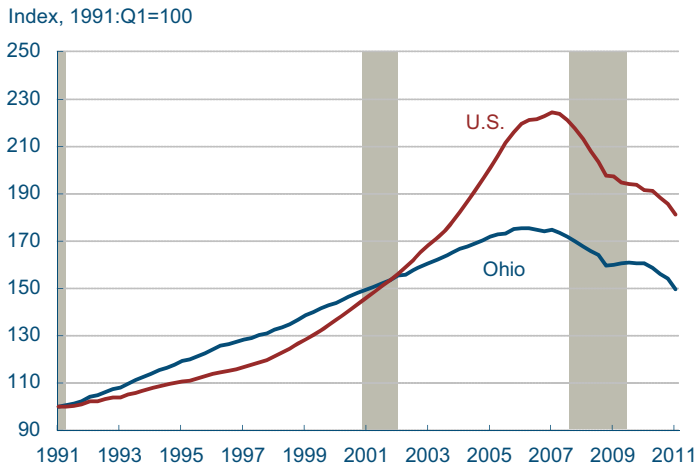
sample averages rather than an expectation of an accelerated inflationary environment in the long term.

For the longer-term expectations, I also check a number of market and model-based measures. These are the FRBC model's 10- and 30-year inflation expectations, 5-year and 10-year expectations computed from breakeven inflation rates derived from the spread between TIPS and nominal Treasuries, and the 5-year, 5-year forward expectation based on the same spread. Except for the last one, these measures increased in April and were followed by a decline in May and June. For example, the FRBC 10-year inflation expectation rose to 2 percent in April but declined to 1.7 percent in June. Similarly, the 5-year inflation expectation increased sharply in April to 2.5 percent but declined even more sharply in May and June, ending up at 1.8 percent. In contrast, the 5-year, 5-year forward expectation dropped from 2.8 percent in May to 2.5 percent in March, and then in June it rose back to 2.8 percent. These market measures are subject to different premia such as a liquidity premium, and the 5-year, 5-year measure tries to minimize such effects.

To sum up, near- and long-term inflation expectations appear contained. UM near-term expectations rose and fell with energy price developments in the first two quarters of 2011, while SPF near-term expectations increased, but at far from alarming levels. A core CPI inflation rate of between 1.5 percent and 2.0 percent is still seen as the most likely possibility through 2012 by the SPF respondents. While SPF long-term expectations rose in May, they are now more in line with their historical levels. And finally, though most market and model-based measures of inflation expectations rose in April, they experienced sharp declines in May and June.

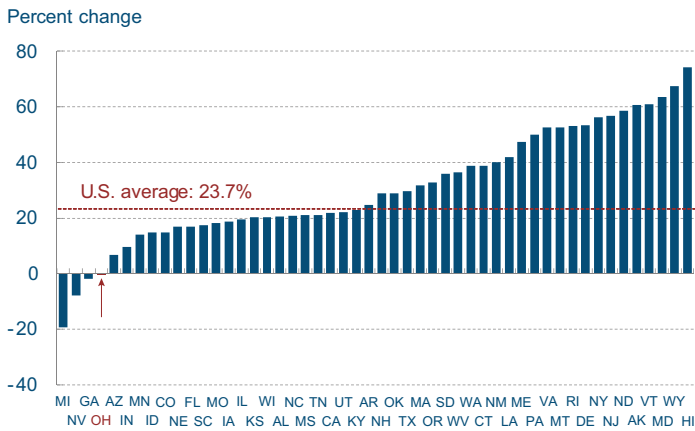
# Shadow Inventory Still Weighing on Ohio Housing Prices

## Home Price Indexes, U.S. and Ohio



Note: Data based on FHFA Purchase-Only Index.  
Source: FHFA.

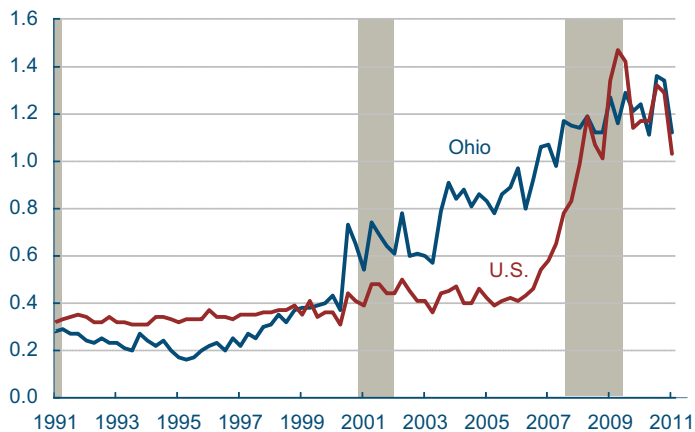
## Home Price Changes Since 2000



Note: Data based on FHFA Purchase-Only Index.  
Source: FHFA.

## Foreclosure Starts

Percent of outstanding mortgages



Source: Mortgage Bankers Association.

07.11.11

by Guhan Venkatu

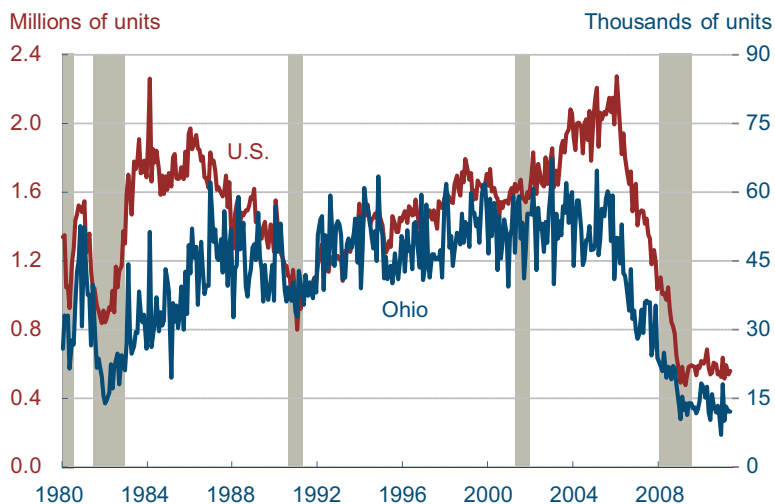
Home prices continue to trend down, both nationally and across Ohio. Indexes produced by the Federal Housing Finance Agency (FHFA) show that prices in both the state and the nation declined by more than 5 percent from the first quarter of 2010 to the first quarter of 2011. As a result, Ohio’s home prices have fallen roughly to the levels that prevailed in 2000. This is unusual relative to the other states in the nation. Only a few have fared worse than Ohio over this 10-year period, when 45 states saw gains of 10 percent or more and the U.S. average gain approached 25 percent.

Some of the downward pressure on Ohio’s home prices may be traced to above-average foreclosure activity from early in the last decade. During the 1990s, foreclosures occurred at a somewhat slower pace in Ohio than in the U.S. But by the mid-2000s, foreclosures were occurring at about twice the national average. Ohio’s stock of seriously delinquent mortgages—those in the foreclosure process and more than 90 days delinquent—ballooned. As these properties emerged from foreclosure and appeared on the market again, they likely kept Ohio’s home prices from rising as rapidly as they otherwise might have. They also probably reduced the number of new housing projects. Following the 2001 recession, housing starts stayed relatively flat in Ohio, in contrast to the construction boom seen in some parts of the U.S.

The stock of serious delinquencies—sometimes referred to as a shadow inventory—is even larger today than in the mid-2000s. It remains near record highs, in both absolute and percentage terms, though the proportion of seriously delinquent mortgages has improved in recent quarters. This improvement is related to declining delinquency rates, and consequently, fewer new inflows of properties into foreclosure.

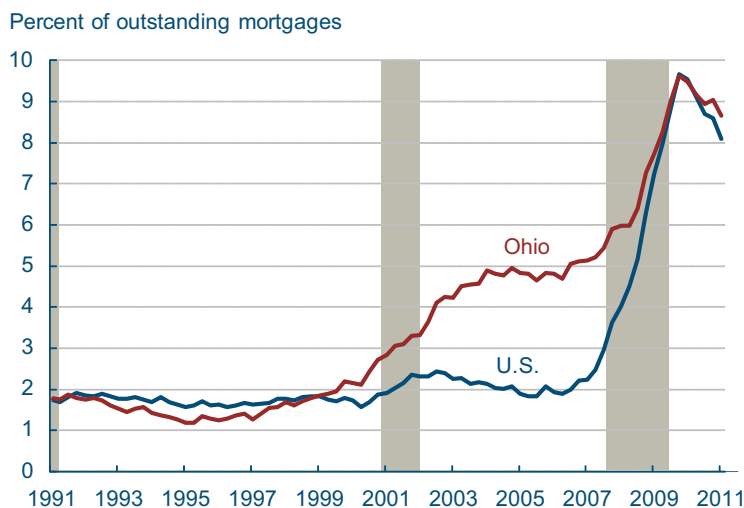
Outflows from foreclosure, however, remain relatively slow. According to LPS Applied Analytics,

## Housing Starts, U.S. and Ohio



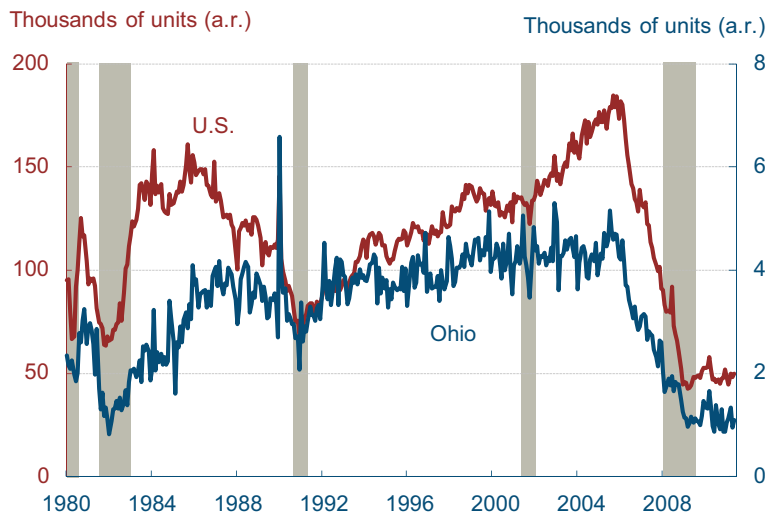
Source: Bank of Tokyo—Mitsubishi UJF.

## Stock of Seriously Delinquent Mortgages



Source: Mortgage Bankers Association.

## Housing Permits, U.S. and Ohio



Source: Bureau of the Census.

for every foreclosure sale in Ohio in April, there remained about 70 mortgages in a state of serious delinquency. This means that if the stock of seriously delinquent mortgages were frozen at current levels, it would still take close to six years to work through the backlog at the current foreclosure sales pace. (This calculation assumes that loans that are currently more than 90 days delinquent will ultimately go through the foreclosure process.) The slow foreclosure sales pace is partly related to the documentation problems that several major servicers acknowledged last fall, which cast doubt on their standing to initiate foreclosures. What followed were process reviews by servicers, and a voluntary suspension by some of foreclosure sales. Foreclosure sales have yet to return to the levels that prevailed prior to these revelations.

Again, as before, as these properties emerge from foreclosure, they will keep downward pressure on prices and on the number of new homes under construction. According to RealtyTrac, distressed properties—those that have been through foreclosure or that were sold for less than the owner owed prior to the completion of foreclosure—accounted for about a quarter of all home sales in Ohio in the first quarter of 2011. RealtyTrac also reported that among the states, Ohio registered the largest discount for distressed properties, which sold for about 41 percent less than their nondistressed counterparts. As far as the impact these properties are having on home construction, residential building permits and housing starts in Ohio remain near the lowest levels on record.

## Are Underemployed Graduates Displacing Nongraduates?

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07.12.11

by Stephan Whitaker and Mary Zenker

The current recovery's failure to produce robust job growth has focused attention on workers who are temporarily getting by in positions that are not good matches. One mismatch is formally measured in the count of part-time workers who want full-time work. Another frequently discussed, but less measured mismatch is those who hold a college degree but must take a job that does not require their degree because they cannot find employment in their field. For example, we hear anecdotes of recent college graduates serving coffee and stocking shelves.

We looked at data that could reflect this trend and found that college graduates are in fact becoming more prevalent in occupations that do not require a degree. The trend actually started before the recession, though it has, if anything, increased during the slowdown. Also, a few very-low-skilled occupations have seen a jump in college graduates during and after the recession. While other ongoing structural changes in the economy could be driving all of these trends in the data, they are consistent with the stories of educated people rolling down into mismatched positions.

Mismatches are not the only reason that we might see more educated people in some occupations. Employers cutting payrolls during the recession, for example, might intentionally retain their graduates while letting nongraduates go. Or a new technology may require that people have a degree to provide a product or service for which a degree was unnecessary 10 years ago. Within the categories we will examine, the lowest-skill occupations may be declining while the higher-skilled occupations are growing. These shifts in the labor market, combined with the time it takes the workforce to increase education levels, could explain some of the wide spread in unemployment rates that are observed between the college degreed and nondegreed. In 2010, workers without a college degree experienced 10.4 percent unemployment, while

those with a bachelor’s degree or greater were unemployed at 4.7 percent.

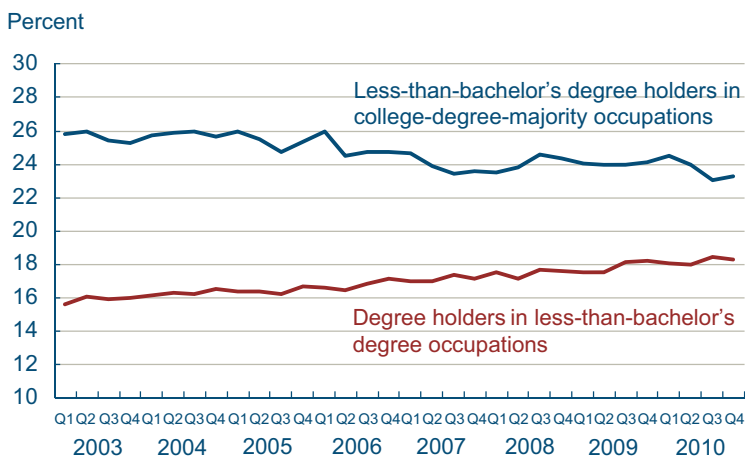
To begin our analysis, we sorted all the occupations tracked in the Current Population Survey into two groups, those where the majority of workers hold less than a bachelor’s degree (BA) and those where the majority are college graduates. High school drop outs and associate’s degree holders are in the first category, and graduate degree holders are in the second. For the sake of simplicity, we’ll refer to the groups as non-BA occupations and BA occupations. We observe 388 non-BA occupations (for example, secretaries, retail sales workers, and drivers) and 115 BA occupations (such as teachers, nurses, and accountants). Most non-BA occupations have some degree holders working in them. In 198 of these occupations, 10 percent or more of the workers hold a college degree. Many BA occupations also have substantial shares of non-BA holders working in them.

We do have to recognize that some of what appears to be substitution or competition between workers with different education levels could be imprecision in the definitions of the occupations. Occupations such as “medical services manager” have similar percentages of workers with and without college degrees. Perhaps workers with degrees are performing significantly different, higher-skilled tasks, which fit best under the title “medical services manager,” along with simpler management tasks.

The chart below shows the increasing education levels of the American workforce over time. Between 2003 and 2007, when total employment was growing, an increasing share of non-BA occupations were being held by people with BAs. Meanwhile, the share of people without BAs who were working in mainly BA occupations was falling. A roll-down impact of the recession would accelerate these existing trends.

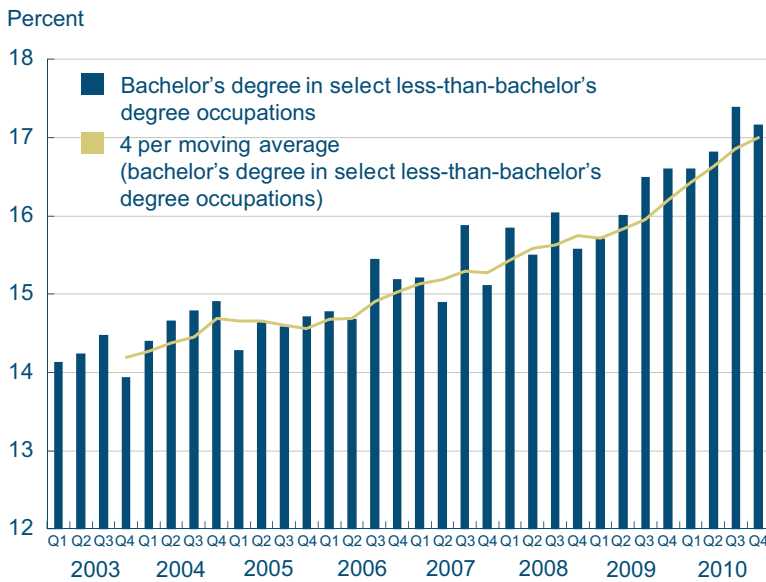
The decline in the percentage of people without a college degree in BA occupations was more rapid before the recession than during and after it. The share of BAs working in non-BA occupations, on the other hand, rose somewhat faster during and after the recession. The 2004-2007 changes suggest that the trends of increasing skill demands within

## Trends In the Percentage of Workers with a Degree Different Than the Most Common Degree in Their Occupation



Source: Authors' calculations using CPS data.

## Trends In the Percentage of Workers with a Bachelor's Degree in Easily-Entered Less-Than-Bachelor's Occupations



Source: Authors' calculations using CPS data.

## Levels and Changes In the Percent of Workers In Occupations That Mainly Employ People With a Different Level of Education

	2004	2007	2010	2004-2007 change	2007-2010 change
Less-than-bachelor's degree holders in college-degree-majority occupations	25.82	23.89	23.70	-1.92	-0.19
Degree holders in less-than-bachelor's degree occupations	16.30	17.12	18.20	0.82	1.08

Source: Census Bureau.

occupations, restructuring toward higher-skilled industries, and employers screening by educational attainment were impacting both types of occupations while economic growth was strong. In the changes from 2007 to 2010, the transitions stall out in the BA occupations but continue in the non-BA occupations. The roll-down phenomenon, which should only occur in a weak economy, could be maintaining the latter trend.

To focus our search for the recent college-grad barista, we selected 34 occupations that seemed likely to collect underemployed degree holders. These occupations, mostly in sales and food service, do not require associate's degrees or extensive on-the-job training. In 2004, 14.7 percent of the employees in these fields held BAs. In 2007, the percentage had climbed to 15.3, and by 2010, it was 17.0 percent. This corresponds to an increase of 0.6 percentage points in the three years before the recession and 1.7 percentage points during and after the recession. The 1.1 percent point change in the trend corresponds to about 356,000 people, 2.6 percent of the unemployed, or two-tenths of the labor force. That is a notable number of college graduates working in occupations that are not on college-degree career paths.

Considering this analysis, a mismatch of college graduates in non-BA occupations cannot be dismissed. We do not observe the ratio of college graduates to nongraduates in either type of occupation to be holding steady or trending toward nongraduates. If we observed trends favoring nongraduates, that would suggest the rolling-down of graduates is not happening, or is too small to matter.

The increasing share of degree holders in non-BA positions both before and after the recession could be driven by trends other than mismatch. However, the substantial increase in degree holders in low-skilled, easily-entered occupations begs further investigation and monitoring. A large increase in underemployed degree holders and an equal number of displaced nongraduates would be a phenomenon worthy of a policy response.

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