

Economic Trends

September 2011 (August 11, 2011-September 6, 2011)

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FEDERAL RESERVE BANK
of CLEVELAND

Core Prices Edge Up in July

08.29.11

by Brent Meyer

July Price Statistics

	Percent change, last					2010 average
	1mo. ^a	3mo. ^a	6mo. ^a	12mo.	5yr. ^a	
Consumer Price Index						
All items	6.2	1.8	4.0	3.6	2.1	2.4
Less food and energy	2.7	3.1	2.6	1.8	1.8	0.6
Median ^b	2.9	2.2	2.2	1.8	2.1	0.7
16% trimmed mean ^b	3.3	2.4	2.9	2.1	2.1	0.8
Sticky price ^c	2.1	1.6	1.6	1.8	1.5	0.9
Flexible price ^c	16.6	1.9	9.4	8.8	2.6	3.5

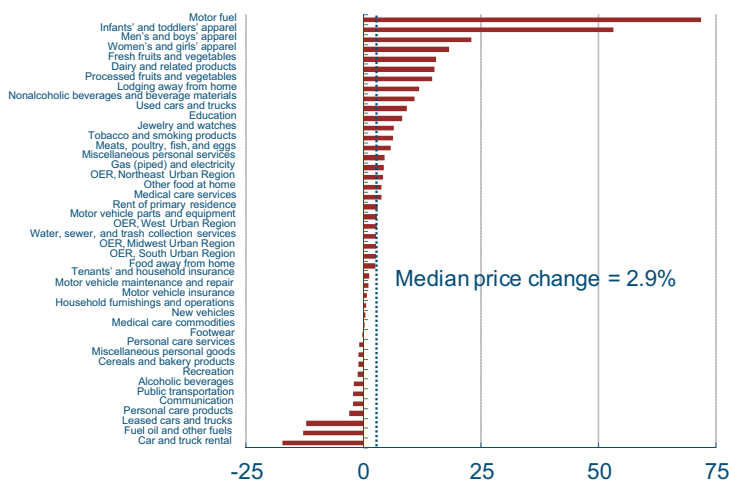
- a. Annualized.
 - b. Calculated by the Federal Reserve Bank of Cleveland.
 - c. Author's calculations.
- Source: Bureau of Labor Statistics.

The headline CPI jumped up at an annualized rate of 6.2 percent in July, surprising forecasters' expectations to the upside. Over the past 12 months the CPI is up 3.6 percent, somewhat above its longer-term (5-year) annualized growth rate of 2.1 percent. Increases in food at home (up 7.2 percent) and a rebound in motor fuel prices (up 72 percent after falling 56 percent in June) accounted for a little over half of the overall gain.

Excluding food and energy prices, the core CPI rose 2.7 percent in July. Over the past three months, the core CPI is trending at an annualized growth rate of 3.1 percent, above its 12-month growth rate of 1.8 percent. Measures of underlying inflation produced by the Federal Reserve Bank of Cleveland—the median and 16 percent trimmed-mean CPI—were also somewhat elevated in July relative to their longer-term trends. The median CPI rose 2.9 percent, while the 16 percent trimmed-mean CPI jumped up 3.3 percent.

CPI Component Price Change Distribution

Annualized percentage change, July 2011



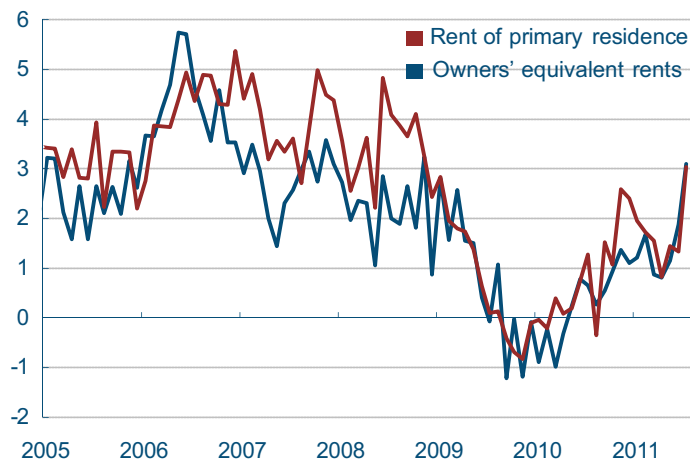
Sources: Bureau of Labor Statistics; author's calculations.

There were some interesting relative price changes in July. New-auto prices rose just 1.8 percent in July, after having reached double-digit increases over the past three months, perhaps as supply disruptions abated. However, used-car prices continued to increase sharply, rising 9.3 percent during the month and 14.7 percent over the past three months.

Apparel prices followed up June's outsized 18.3 percent spike by jumping another 16.1 percent in July, in large part due to a whopping 53 percent spike in infants' and toddlers' apparel. Much of the increase seems to be due to the seasonal factor. Over the past three months, the increase in apparel categories has been entirely in the seasonal factor: The seasonally adjusted apparel index rose 16.4 percent over that period, while the not-seasonally-adjusted index actually fell a sharp 10.8 percent.

Rents

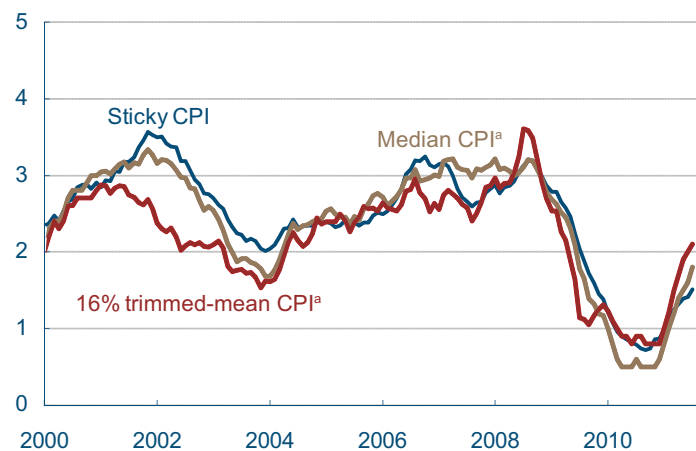
Annualized percent change



Source: Federal Reserve Board.

Alternative Price Statistics

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.

Also, some discretionary spending categories (such as personal care and recreation) decreased in July, continuing their recent subdued trends. In fact, prices for personal care goods and services are up just 0.6 percent over the past year, while recreation prices have fallen 0.2 percent.

Rents bolstered the increase in the core CPI, as owners' equivalent rent (OER) and rent of primary residence rose slightly more than 3.0 percent in July. In fact, this is the first increase above 3.0 percent for either series since November 2008. Still, over the past year, rent of primary residence is up just 1.6 percent, while OER is up a mere 1.2 percent.

A glance at the longer-term (12-month) trends in a few measures of underlying inflation suggests that the inflation trend has moved up from its recent cyclical lows during mid-2010. The 16 percent trimmed-mean is up 2.1 percent over the past year, while the median CPI is up 1.8 percent. A slightly more subdued signal of future inflation is coming from the sticky CPI, which increased 2.1 percent in July but is up only 1.5 percent over the past year.

Household Finances

08.15.11

by O. Emre Ergunor and Nelson Oliver

Consumption accounts for roughly 70 percent of gross domestic product (GDP). Consequently, households' spending behavior is of utmost interest to policymakers.

In thinking about household finances, the obvious primary resource available for new consumption is disposable personal income. From 1990 to 2007, annual changes to personal consumption expenditures (PCE) and disposable income fluctuated within a definable range of roughly 2 percent to 8 percent.

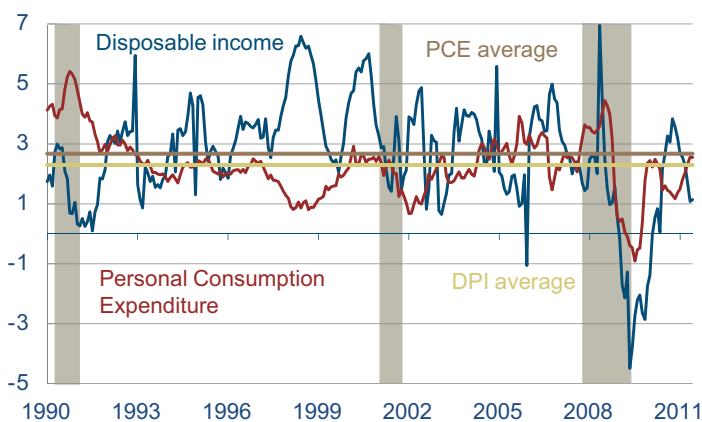
However, the recession and financial crisis in 2008 pushed both disposable income and consumption growth negative for the first time in over 20 years. Income growth briefly exceeded its 20-year average in 2010, but it is currently moving toward levels often associated with economic stress. Consumption growth still maintains its upward trend, but it has barely reached its 20-year average. Consumption and incomes have to grow at a much higher clip to make up for the lost crisis years.

Household spending can also be funded through debt if consumers expect their incomes to grow and want to smooth their consumption (maintain a constant or steadily rising level of consumption over time). New individual borrowing as a percentage of GDP is still negative after passing zero in mid-2008. Moreover, it has renewed its downward trend, meaning that on a net, aggregated basis loans are either being paid off (and not renewed) or are defaulting, or a combination of the two. For a sense of historical perspective, consider that the average borrowing level from 1990 to 2000 was about 4 percent of GDP before the loose loan underwriting environment of the 2000s set in.

The personal savings rate, at 5.4 percent in June 2011, shows that households are saving more, which explains part of the shrinkage in aggregate loans.

Personal Income and Consumption

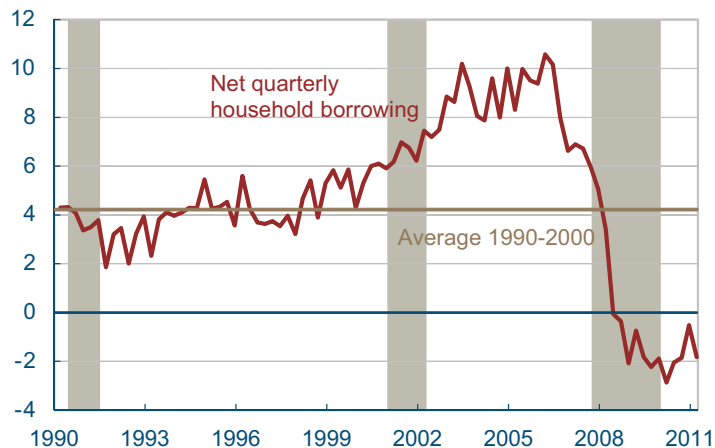
12-month percentage change



Note: Shaded bars indicate recessions.
Source: Bureau of Economic Analysis.

Household Borrowing

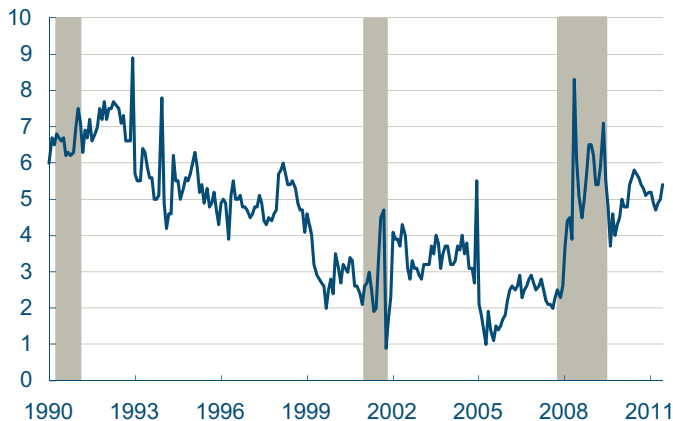
Percentage of nominal GDP



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

Personal Savings

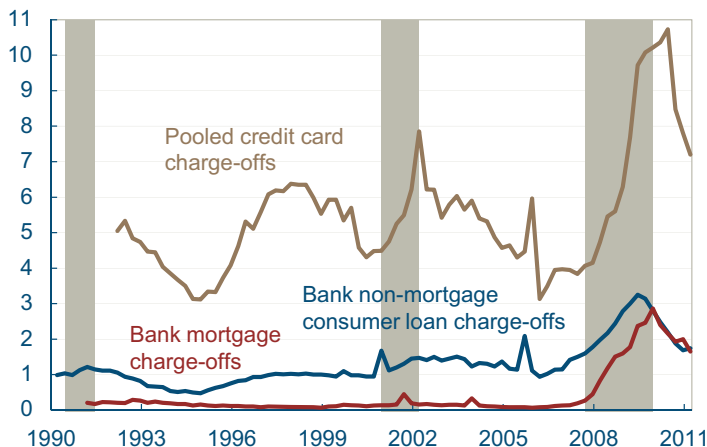
Percentage of disposable income



Note: Shaded bars indicate recessions.
Source: Bureau of Economic Analysis.

Consumer Debt Charge-Offs

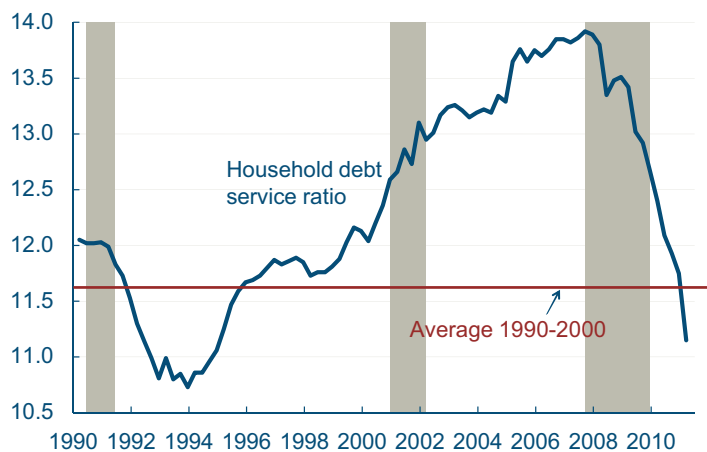
Percentage of average loan balances



Note: Shaded bars indicate recessions.
Sources: Federal Reserve Board, Standard & Poor's.

Household Debt Burden

Percentage of disposable personal income



Note: Shaded bars indicate recessions.
Source: Federal Reserve Board.

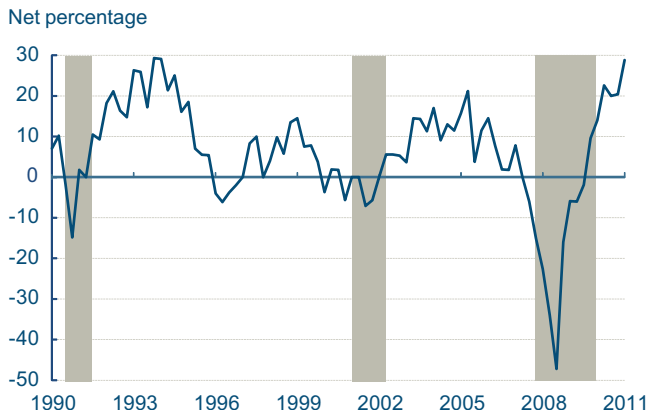
Some of this contraction can also be explained by higher-than-average defaults on mortgages, consumer loans, and credit cards, as the figure below shows. While the charge-offs in securitization pools for credit card receipts have declined sharply from their peak in the middle of last year, they are barely below the peak reached during the 2001 recession. Bank mortgage charge-offs are still at historically elevated levels despite the decline since the end of the recession. Whether consumers are paying down existing debt through savings or banks are writing bad loans off, the result is less aggregate debt in the financial system.

As debt levels shrink, consumers are spending less of their disposable income on repayments related to mortgages and consumer loans. The household debt service ratio, which measures repayments as a share of income, has been consistently falling since the third quarter of 2008. Much of the drop is likely to be coming from historically low interest rates, which lower debt service requirements on new debt, refinanced debt, or debt that carries floating interest rates. The ratio is now well below the average levels seen from 1990 to 2000, and it is rapidly approaching its lowest levels since 1993-1994. While the ratio may potentially undershoot its long-term average, its sharp decline since 2008 indicates that the debt-service burden has fallen substantially, which may make borrowers more inclined to borrow again and financial institutions more willing to lend.

According to the April 2011 Senior Loan Officer Survey, banks are showing greater enthusiasm to lend. The net percentage of domestic respondents reporting increased willingness to make consumer loans is at its highest level since the early 1990s.

Banks are also easing their lending standards, albeit from very tight levels. Starting in April 2011, the Senior Loan Officer Survey reports the responses related to credit cards, auto loans, and other consumer loans separately. In the credit card category, we observe the largest net percentage of lenders easing lending standards since the credit boom years. This is followed by auto loans, and then by other consumer loans.

Domestic Respondents Reporting Increased Willingness to Make Consumer Loans

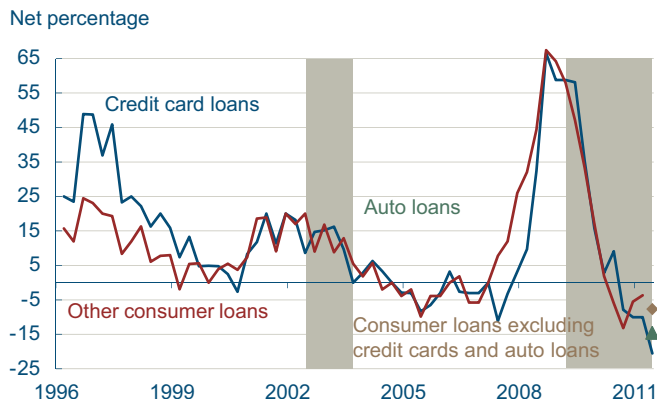


Note: Shaded bars indicate recessions.
Source: Federal Reserve Board's Senior Loan Officer Survey.

Banks are also reporting stronger consumer loan demand. The leading category is auto loans, by a wide margin. Demand for credit cards has weakened slightly.

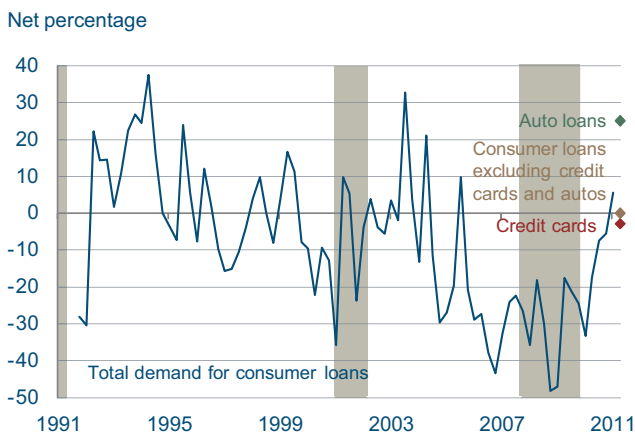
Overall, the data shown here suggest that consumers are still paying down loans or defaulting, but it seems like the worst is behind us and banks are no longer pulling back on lending. Still, slow income growth and the continuing deleveraging of consumer balance sheets may damp consumers' motivation to ramp up their expenditures immediately.

Domestic Respondents Tightening Standards for Consumer Loans



Note: For data starting in 2011:Q2 changes in standards for auto loans and consumer loans excluding autos and credit cards are reported separately. Shaded bars indicate recessions.
Source: Federal Reserve Board's Senior Loan Officer Survey.

Domestic Respondents Reporting Stronger Demand for Consumer Loans



Notes: For data starting in 2011:Q2, changes in demand for auto loans, credit cards and all other consumer loans are reported separately. Shaded bars indicate recessions.
Source: Federal Reserve Board's Senior Loan Officer Survey.

Mortgage Market Continues to Struggle

08.30.11

by Yuliya Demyanyk and Matthew Koepke

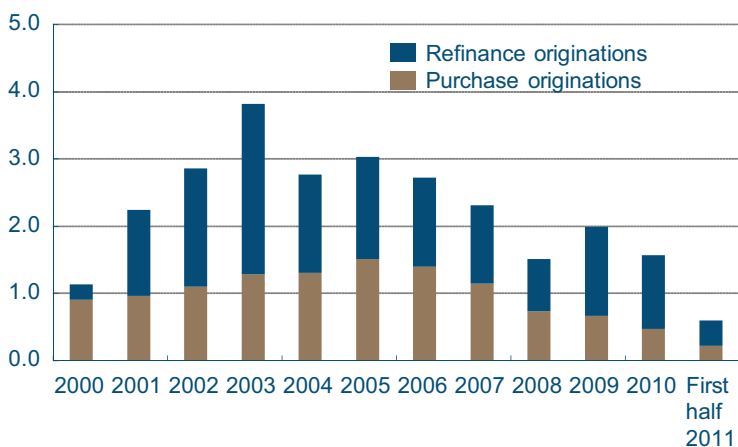
The U.S. market for mortgage originations has continued to struggle through the second quarter. With second-quarter GDP being revised down to an annualized rate of 1.0 percent, the weakness in the housing market has been attributed to poorer-than-expected economic performance and declining confidence in the economic recovery. According to the Mortgage Bankers Association, mortgage originations in the second quarter fell to their lowest levels since September 2008, the peak of the financial crisis. Moreover, based on data from the first half of 2011, lenders have originated only \$592 billion worth of mortgages, 16.5 percent below their pace in the first half 2010 of \$709 billion.

The decline in mortgage originations has come as contract interest rates have hovered around near-record lows. According to the Federal Housing Finance Agency, the contract interest rate on a new single-family home in June was 4.45 percent, up 29 basis points from the decade low of 4.16 percent and 150 basis points below the decade's average interest rate of 5.97 percent. The same holds true for interest rates on previously occupied homes, where the current contract rate is only 20 basis points above the low of 4.42 percent recorded in November 2010 and nearly 150 basis points below the decade average of 6.09 percent.

While contract interest rates have steadily declined through the recession, origination fees on new mortgages have risen. According to the Federal Housing Finance Agency, origination fees on a newly built home were 1.13 percent of the mortgage in June, the highest level since August 2009, when origination fees were 1.15 percent of the mortgage. Origination fees have also increased on previously occupied homes; currently at 0.92 percent, origination fees on previously occupied homes are only 3 basis points below the decade high of 0.95 percent. The increase in origination fees has not been a recent occurrence; in fact, mortgage

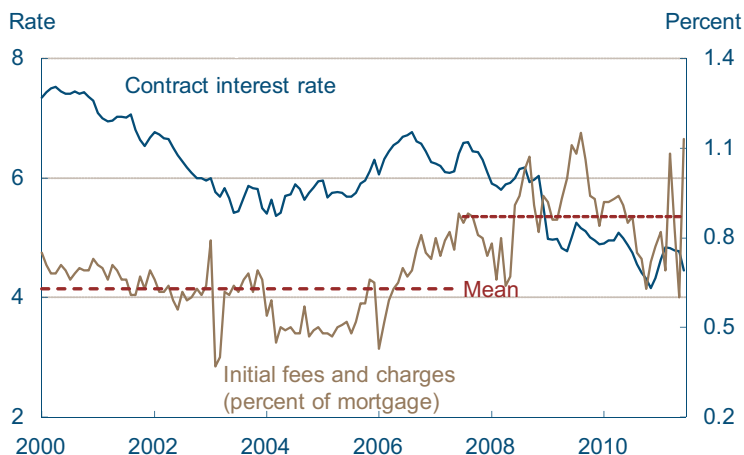
Mortgage Originations

Dollars in trillions



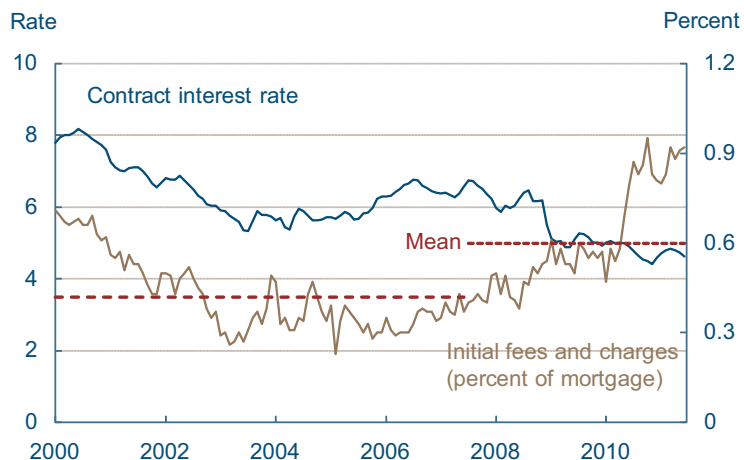
Sources: Mortgage Bankers Association; Haver Analytics.

Contract Interest Rate and Initial Charges of Newly Built Homes



Sources: Federal Housing Finance Agency; Haver Analytics.

Contract Interest Rate and Initial Charges of Previously Occupied Homes



Sources: Federal Housing Finance Agency; Haver Analytics.

origination fees have been much higher since the financial crisis began than they were before it.

The trend toward higher origination fees on mortgages has been ongoing since the second quarter of 2007. From the first quarter of 2000 to the second quarter of 2007, the average mortgage origination fees on a newly built home were 0.63 percent. However, from the third quarter of 2007 to the present, the average origination fees on a newly built home have averaged 0.87 percent. Moreover, origination fees have also been higher since the onset of the crisis on previously occupied homes, increasing to an average of 0.6 percent from 0.42 percent prior to it. The increase in origination fees is important to note because while most costs associated with homeownership have declined through the recession, the up-front costs have risen.

While it is difficult to tell what the impact of higher up-front costs have had on the origination market, it is possible that higher origination fees, coupled with lower economic growth, have caused consumers to pause when deciding whether right now is the appropriate time to get a new mortgage for purchasing a home.

Interpreting the recent slowdown: delayed recovery or stall speed?

09.02.11

by Margaret Jacobson and Filippo Occhino

Economic activity has slowed markedly in recent months. After growing 3.14 percent in 2010, real GDP grew at a rate of only 0.7 percent during the first half of 2011. This unexpected deceleration has raised doubts about the outlook. Are we still to expect a stronger recovery? Or is a double-dip recession on its way?

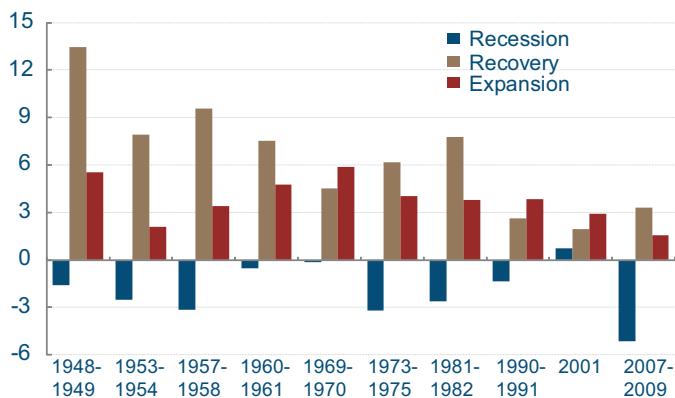
The answers to these questions will affect the economic decisions that consumers and businesses make going forward. For instance, as we argued in a previous article, an important reason why firms are shying away from investing right now is that they forecast slow growth and weak aggregate demand and they are uncertain about the economic outlook.

In the past, recessions were typically followed by a recovery period of strong growth, and that in turn was followed by an expansion period of more moderate growth close to the long-term trend. Real GDP was temporarily driven below its trend level during the recession; then it grew at a rate faster than trend growth during the recovery, rapidly returning to its trend and closing the gap; after that, it grew along its trend during the expansion period. Growth during the recovery period tended to be stronger after more severe recessions, so the gap between GDP and its trend level tended to close quickly. Average growth during the first year of the recovery tended to be higher than during the following years, especially after recessions with large output losses.

The current cycle, however, has not followed this pattern. Although the recession was the most severe since the Great Depression, there has not been any strong recovery. The average growth rate during the first year of the recovery was only 3.3 percent, not enough to allow GDP to return to its trend level. In the subsequent year, GDP decelerated and grew only 1.55 percent, a rate even lower than trend

Real GDP

Percentage change and annual percentage rate



Note: The dates refer to the recessions. For each business cycle, the chart shows the percentage GDP loss during the recession, the average GDP growth rate during the first year after the recession, and the average GDP growth rate during the subsequent years until the next recession.

Source: Bureau of Economic Analysis

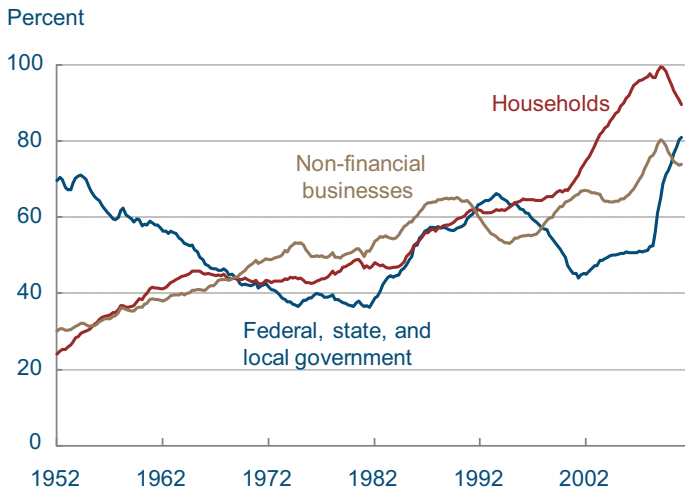
growth. The path of GDP has remained well below its trend for a much longer period than is typical.

One reason behind the lack of a strong recovery is the financial crisis that hit the economy in the last recession. Research by Carmen Reinhart and Kenneth Rogoff has documented that it takes much longer to recover from recessions associated with financial crises. A related reason has to do with the high level of debt of the household, corporate and government sectors. For all the three sectors, the ratios of debt to GDP have increased over the last 30 years and are now close to their all-time high. When debt is too high, it makes the economy more vulnerable to financial shocks. And it delays the recovery because households and firms need to repair their balance sheets before they are able to spend again. This may explain why economic activity has not rebounded yet and might suggest that a delayed recovery is still coming.

There is, however, another possible interpretation of the current slow growth. As recently emphasized by Jeremy Nalewaik, economic activity tends to decelerate in the year before a recession. After growing along the trend in the expansion period, the economy may enter a state of stall speed, with GDP growing at a rate slower than trend just before the arrival of a recession. Average growth in the year before a recession tends to be lower than during the preceding years. This pattern suggests that the current slowdown in economic activity may signal another recession coming.

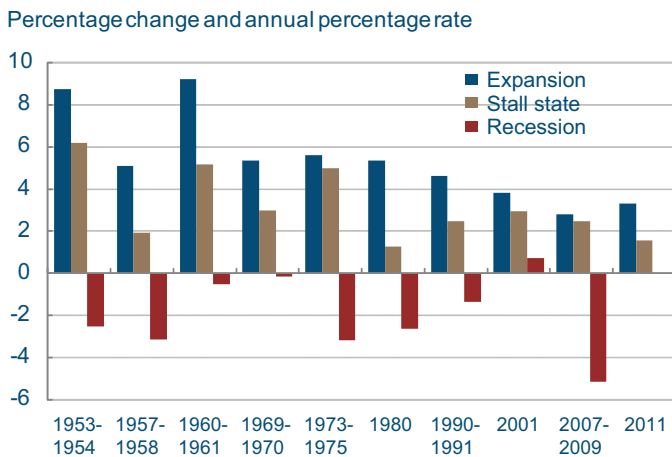
However, information from other sources does not support the case for an imminent recession. Part of the economic weakness during the first part of the year has been due to transitory factors, including supply chain disruptions caused by the Japanese earthquake and tsunami, and temporarily high energy prices related to the turmoil in North Africa. Also, the most recent indicators of economic activity, like the monthly data on personal income, personal consumption expenditures, retail sales, new orders for durable goods, and payroll employment, are not pointing to a contraction in economic activity, although they confirm the economic weakness.

Debt to GDP Ratio



Source: Bureau of Economic Analysis; Federal Reserve Board.

Real GDP



Note: The dates refer to the recessions. For each business cycle, the chart shows the percentage GDP loss during the recession, the average GDP growth rate during the year before the recession, and the average GDP growth rate during the previous expansion years.

Source: Bureau of Economic Analysis.

Treading Water

09.02.11

by Tim Dunne and Kyle Fee

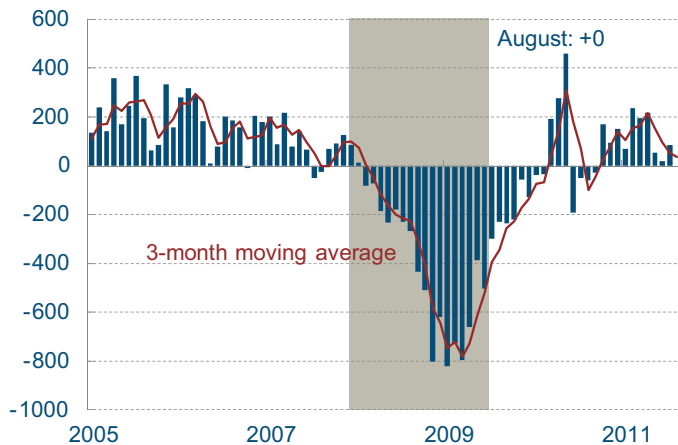
August's employment report showed that the labor market is treading water. Payroll employment showed no change in August, and the unemployment rate remained stuck at 9.1 percent. Private payrolls expanded by a very modest 17,000 jobs, which was offset by a contraction in the government sector of 17,000, attributed mostly to declines in local government education (-13,700). Since the end of the recession, state and local government employment has declined by 603,000 workers or -3.1 percent, a clear reflection of the stress on state and local government budgets.

Part of the weakness in the current month's private-sector payroll data is transitory, as a strike by workers in the telecommunications industry reduced employment by 45,000. The strike occurred during the data collection week of August 8 to 12, but the workers involved have subsequently returned to work. Still, across the board, the numbers were very weak – most private industry sectors showed little change in employment, with very modest gains in health care and professional services. To put an exclamation point on the anemic nature of the report, both June and July were revised downward, with a collective reduction to payroll employment of 58,000 jobs. Thus, over the last three months, employment gains have averaged a mere 35,000 workers—a rate well below what is required to bring down unemployment.

Nothing else looked strong from the payroll side of the report. Average weekly hours declined, and the Bureau of Labor Statistics' (BLS) overall index of aggregate hours actually fell. This index incorporates both changes in employment and changes in hours, so it reflects overall labor utilization in the economy. Indeed, this index shows that aggregate labor hours are below those seen in April 2011, illustrating the general weakness of the labor market over this past summer. On the compensation side, hourly wages and weekly earnings declined, as well.

Payroll Employment Monthly Change

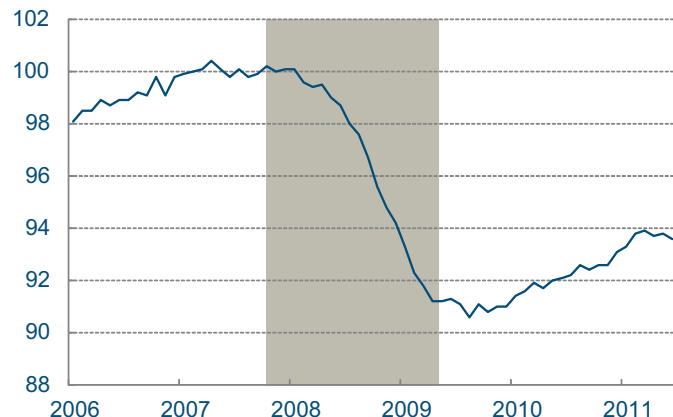
Seasonally adjusted, thousands



Note: Shaded bar indicates a recession.
Source: Bureau of Labor Statistics.

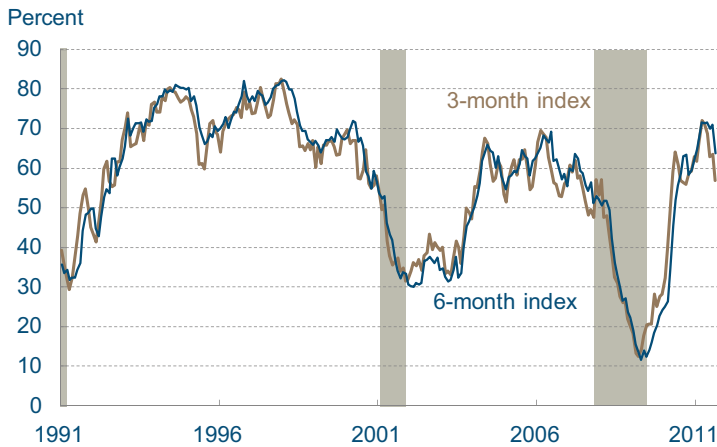
Total Private Aggregate Weekly Hours Index

Seasonally adjusted, 2007 = 100



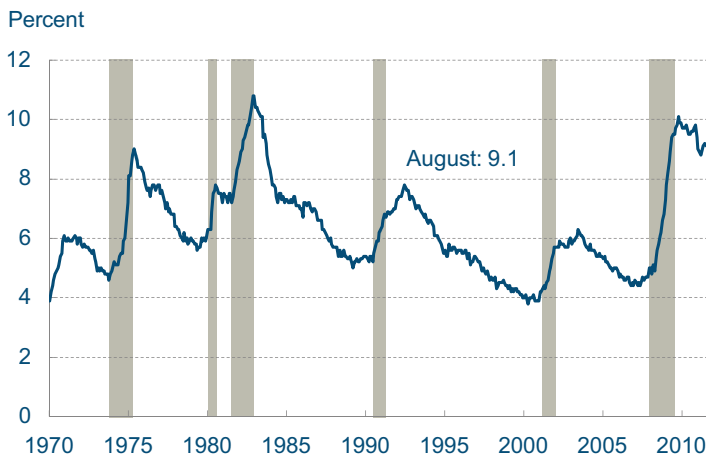
Note: Shaded bar indicates a recession.
Source: Bureau of Labor Statistics.

Payroll Employment Diffusion Index



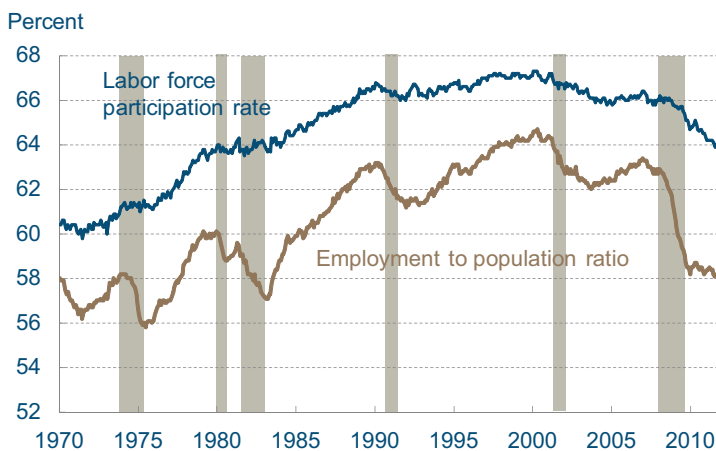
Note: Shaded bars indicate recessions.
Source: Bureau of Labor Statistics.

Unemployment Rate



Note: Shaded bars indicate recessions.
Source: Bureau of Labor Statistics.

Other Labor Market Measures



Note: Shaded bars indicate recessions.
Source: Bureau of Labor Statistics.

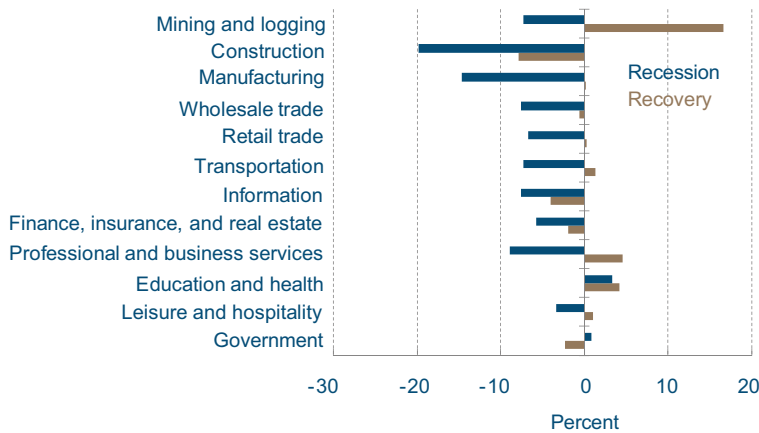
The weakening trends in payroll employment growth are seen in the BLS' diffusion indexes. These indexes measure the percent of industries expanding their employment. The indexes provide an indication of how broad-based employment gains or losses are across industries. A value of 50 implies that the number of industries expanding and the number of industries contracting is essentially balanced. The three-month and six-month indexes measure changes over the last three-month and six-month intervals, respectively. One sees a sharp decline in both these indexes in August, reflecting the muted gains in payrolls evident in the recent employment reports. While not shown, the one-month diffusion index for August came in at 52.5, indicating that the number of expanding and number of contracting industries are close to even at this point in the recovery. Note that these indexes do not include the government sector, which has been steadily declining over 2011.

The household side of the report yielded more of the same. The unemployment rate held steady at 9.1, while the employment-to-population ratio hovered near decadal lows and the labor-force participation held close to steady at 64.0 percent.

The disappointing labor market performance reflected in this month's report is symptomatic of the weakness seen in the overall labor market recovery since the end of the recession. Over this time period, the U.S. economy has generated a net increase in payroll employment of 639,000 jobs (0.5 percent) or only 25,000 jobs per month. Looking across the industrial sectors, the only sectors that have experienced a decent employment recovery are mining and logging, professional and business services, and education and health. In fact, of the 12 major industrial sectors, five have actually contracted employment during the recovery.

If you were looking for "rebounds" of industrial sectors that have been especially hard hit during the last recession, you just do not find it. Indeed, the opposite is true. Industries that experienced above-average employment losses during the recession have tended to have weak employment growth during the recovery cycle. Employment growth during the recession is actually positively correlated with

Payroll Employment Growth by Industry: Recession and Recovery



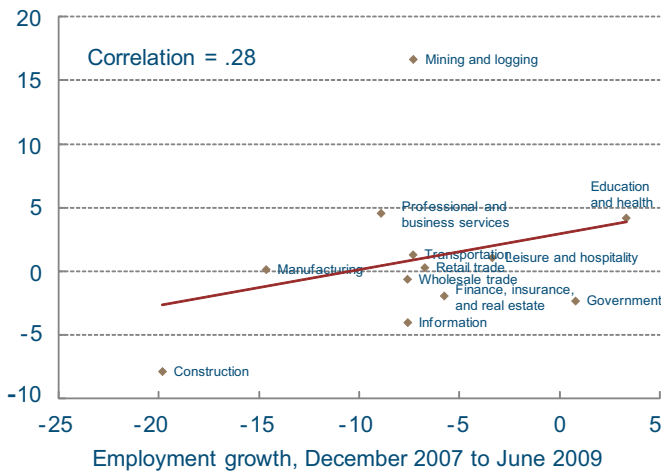
Source: Bureau of Labor Statistics.

employment growth during the recovery – the exact opposite of what you would expect if you were expecting rebound effects. Moreover, industries with higher employment growth in the period prior to the last recession have tended to have higher employment growth in the current recovery.

There are exceptions. In particular, the construction sector stands out. From 2002 to 2006, the construction sector was one of the faster-growing sectors with regard to employment. However, in the recovery phase, it has been by far the weakest performer.

Industry Employment Growth: Recession and Recovery

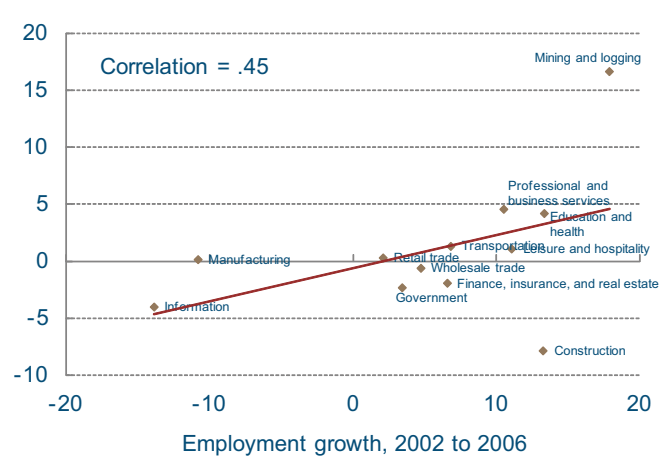
Employment growth, June 2009 to present (percent)



Source: Bureau of Labor Statistics.

Industry Employment Growth: Recovery and Pre-Recession

Employment growth, June 2009 to present (percent)



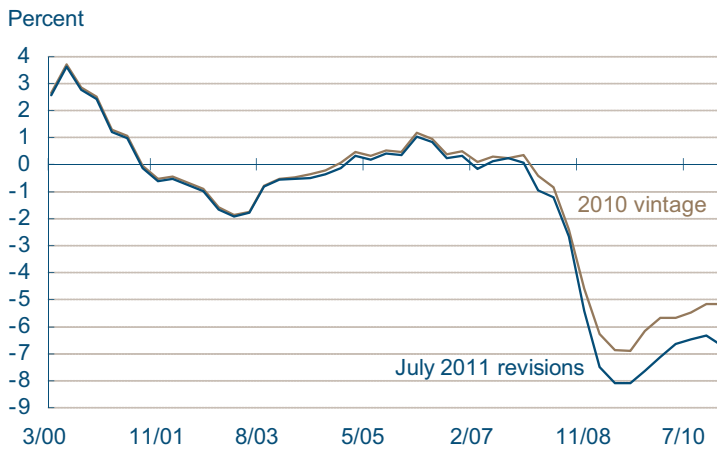
Source: Bureau of Labor Statistics.

Sizing Up Current Monetary Policy with the Taylor Rule

09.06.11

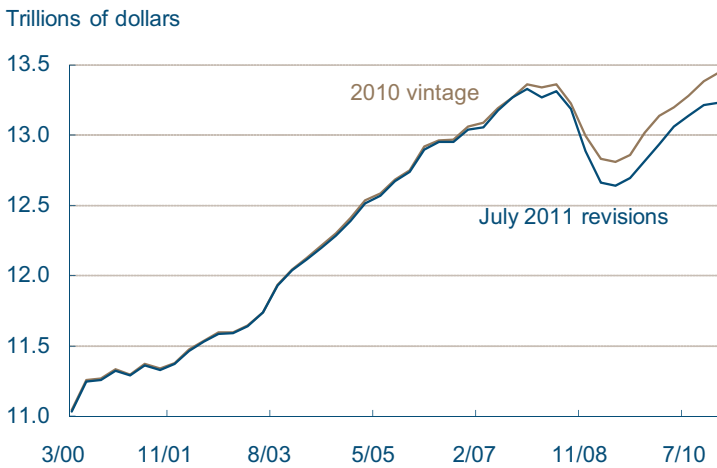
by Charles T. Carlstrom and John Lindner

Output Gap



Sources: Bureau of Economic Analysis; Congressional Budget Office.

Real Gross Domestic Product



Source: Bureau of Economic Analysis.

Along with July’s advanced estimate for second-quarter GDP, the annual revisions for previous GDP estimates were released. Revisions showed a dramatically lower path for GDP than had been previously estimated. In fact, after revisions, real GDP is now believed to still be below pre-recession levels.

This deeper dip in GDP is a more accurate picture of the actual economic conditions experienced throughout the recession. Less dramatically, inflation as measured by core PCE inflation was also revised.

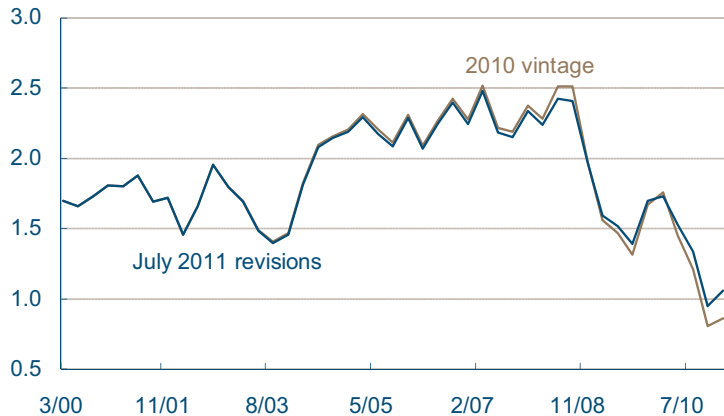
We look at how these revisions could impact policy using what is known as the Taylor rule. The Taylor rule is one of the most common tools used to evaluate Fed policy. The rule supposes that the Fed increases rates when inflation increases and decreases rates when the output gap gets larger (the output gap is the difference between potential and actual GDP). We calculate what the rule suggests the federal funds rate should be and compare it to actual rates to get some insight into monetary policy decision making.

We estimate the rule using the four-quarter change in the core PCE price index as our measure of inflation and a traditional calculation for our measure of the output gap. That traditional calculation shows by what percentage output is above or below its potential. Since potential output is unobservable, we use the Congressional Budget Office’s August 2011 estimates for it. The revisions to GDP have so far had a very minimal impact on those estimates, so our output gap calculation has declined since 2010. It is possible that the CBO will revise down its potential estimates at some future date.

Results are shown in the chart below. They indicate that policy has been constrained by the zero lower bound since the end of 2008. Before the GDP revisions and without the zero lower bound restric-

Core PCE Inflation

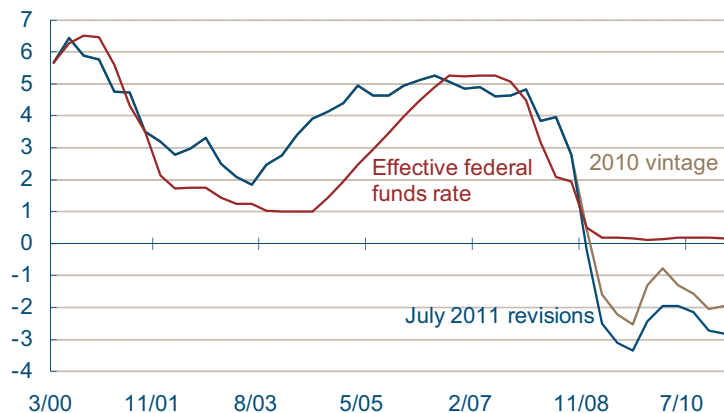
4-quarter percent change



Source: Bureau of Economic Analysis.

Estimated Taylor-Type Rule Using Output Gap

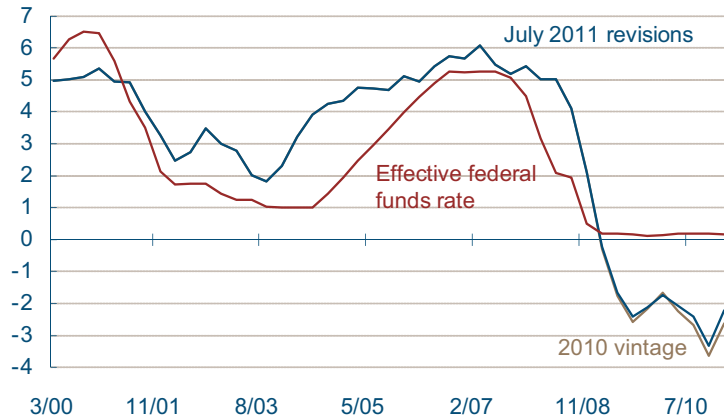
Percent



Sources: Bureau of Economic Analysis; Congressional Budget Office; Federal Reserve Board.

Estimated Taylor-Type Rule Using Unemployment

Percent



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

tion, the Taylor rule suggests that the federal funds rate should have been approximately 2 percentage points lower than it was, that is, around -2 percent. After the revisions, the large increase in the output gap suggests that the rate should be 3 percentage points lower than it is currently. That is, the revisions themselves would cause nearly a 1 percentage point drop in the rule's estimate for the interest rate.

At the August Federal Open Market Committee meeting, which occurred shortly after these revisions, the committee strengthened its forward-looking guidance and replaced its “extended period” language with “The Committee currently anticipates that economic conditions—including low rates of resource utilization and a subdued outlook for inflation over the medium run—are likely to warrant exceptionally low levels for the federal funds rate at least through mid-2013.”

However, an almost unprecedented number of bank presidents dissented. “Voting against the action were: Richard W. Fisher, Narayana Kocherlakota, and Charles I. Plosser, who would have preferred to continue to describe economic conditions as likely to warrant exceptionally low levels for the federal funds rate for an extended period.”

But the statement was not explicit about what the Committee meant by “low rates of resource utilization.” There are many measures of this, but two common measures are the output gap, which we used in our estimation of the Taylor rule above, and the unemployment rate.

Narayana Kocherlakota was one of the dissenters and seems to favor the latter measure of resource utilization. He noted that “In particular, personal consumption expenditure (PCE) inflation rose notably in the first half of 2011, whether or not one includes food and energy. At the same time, while unemployment does remain disturbingly high, it has fallen since November.”

This suggests that another way of looking at policy is to use the unemployment rate instead of the output gap in the Taylor rule. One reason that many prefer this specification is that potential output and thus the output gap is unobservable. But others

prefer the output gap because they argue that policy needs to be more forward-looking and that unemployment has traditionally lagged changes in GDP.

With an output gap as currently estimated of almost 7 percent of GDP and an unemployment rate of 9.1 percent, both of these rules suggest a high degree of policy accommodation is warranted. But since unemployment was not revised when GDP was, the degree of policy accommodation called for with an unemployment-based Taylor rule did not change after the revisions. (There were minor changes in this rule since the estimate of core PCE inflation did change.)

As we were looking at the gap-based rule above, we noted that the revisions to GDP had almost no impact on the CBO's estimate of potential, so our output gap measure declined significantly. The opposite extreme would be where the revisions in GDP did lower potential GDP, which would help close the output gap. The unemployment-based Taylor rule is similar to that extreme.

Yield Curve and Predicted GDP Growth: August 2011

Covering July 22, 2011—August 26, 2011
by Joseph G. Haubrich and Margaret Jacobson

Overview of the Latest Yield Curve Figures

Over the past month, the yield curve flattened as long rates fell. The three-month Treasury bill rate dropped to 0.01 percent (for the week ending August 26), down from July's 0.03 percent and even below June's 0.02 percent. The ten-year rate dropped to 2.19 percent, down from July's 2.97 and June's 2.96, and is now almost a full point below May's 3.15. Naturally, the slope of the yield curve dropped, and at 218 it is at its lowest level since last September.

Projecting forward using past values of the spread and GDP growth suggests that real GDP will grow at about a 0.8 percent rate over the next year. This forecast is the same as July's but a bit below June's, which was 1.1 percent. The strong influence of the recent recession is leading toward relatively low growth rates. Although the time horizons do not match exactly, our forecast comes in on the more pessimistic side of other predictions but like them, it does show moderate growth for the year.

As might be expected, the flatter slope has increase 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 August at 4.8 percent, up noticeably from June and July's 1.7 percent, albeit still a fairly low number. 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.

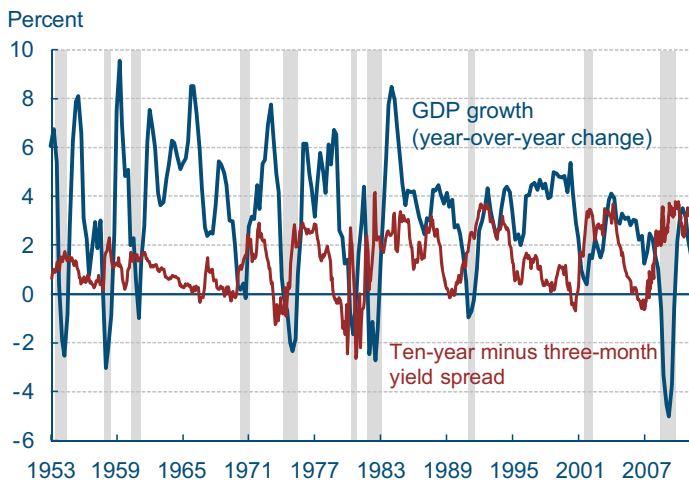
The Yield Curve as a Predictor of Economic Growth

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

	August	July	June
3-month Treasury bill rate (percent)	0.01	0.03	0.02
10-year Treasury bond rate (percent)	2.19	2.97	2.96
Yield curve slope (basis points)	218	294	294
Prediction for GDP growth (percent)	0.08	0.82	1.1
Probability of recession in 1 year (percent)	4.8	1.7	1.7

Yield Curve Spread and Real GDP Growth



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

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

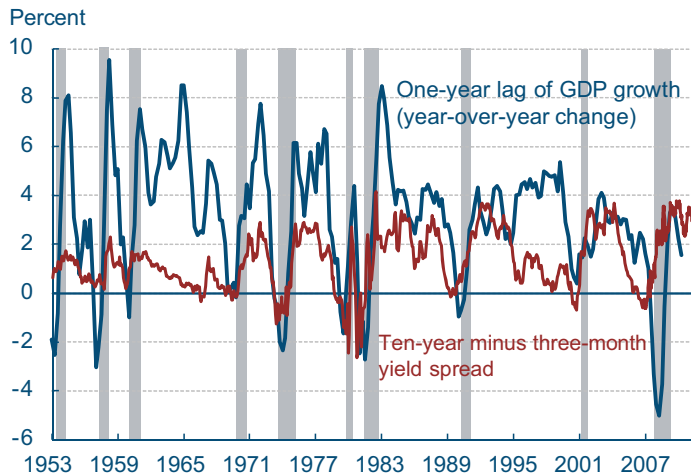
We use past values of the yield spread and GDP growth to project what real GDP will be in the future. We typically calculate and post the prediction for real GDP growth one year forward.

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.

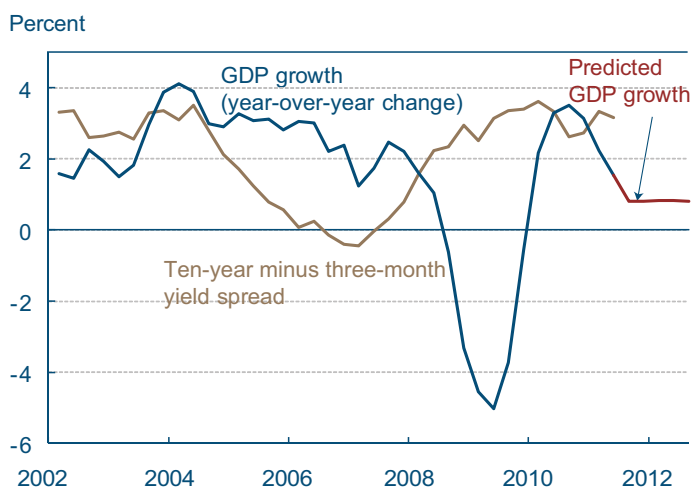
Of course, it might not be advisable to take these number quite so literally, for two reasons. First, this probability is itself subject to error, as is the case with all statistical estimates. Second, other researchers have postulated that the underlying determinants of the yield spread today are materially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

Yield Spread and Lagged Real GDP Growth



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

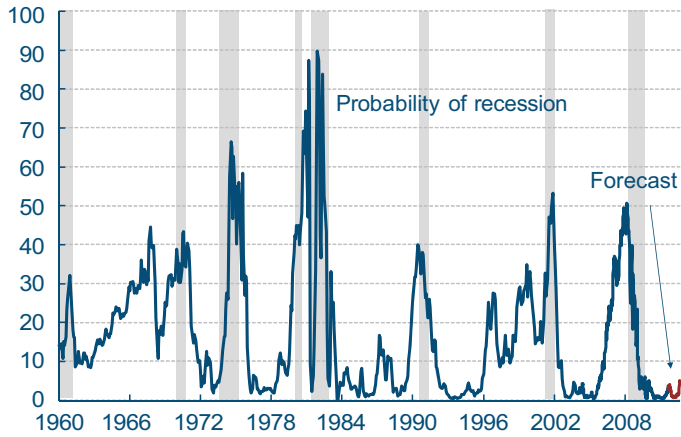
Yield Curve Predicted GDP Growth



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.

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.

Fourth District Employment Conditions

09.02.11

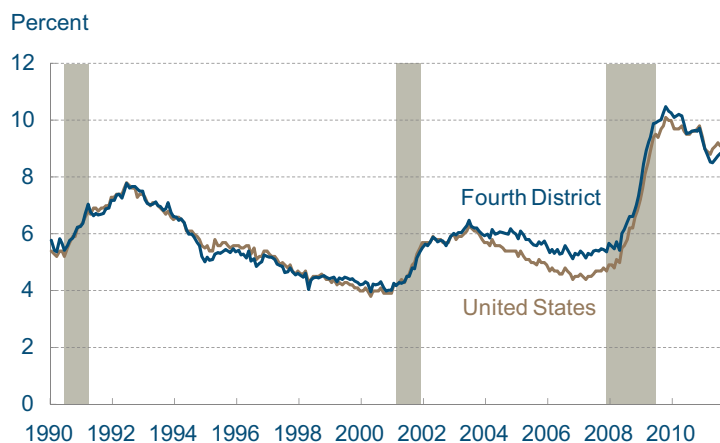
By Kyle Fee

The Fourth District’s unemployment rate has continued to increase over the summer months from a low of 8.5 percent in April to a current reading of 8.8 percent for July. The increase in the District unemployment rate since the spring can be attributed primarily to an increase in the number of people unemployed (3.5 percent), while the labor force has remained relatively stable (-0.3 percent). The District’s current rate is very close to the national unemployment rate (only 0.3 percentage points lower), which is slightly atypical as it has often run higher than the national rate in recent years. Relative to October 2009, when both rates peaked, the District has seen unemployment rates fall by 1.7 percentage points, while the nation saw rates fall by 1.0 percentage points.

The distribution of unemployment rates among Fourth District counties ranges from 6.3 percent (Delaware County, Ohio) to 17.3 percent (Jackson County, Kentucky), with the median county unemployment rate at 9.8 percent. Fourth District Ohio counties populate 51 percent of the upper half of the distribution, while Fourth District Kentucky and West Virginia counties make up 45 percent and 4 percent, respectively. County-level patterns are reflected in statewide unemployment rates, as Ohio and Kentucky have unemployment rates of 9.0 percent and 9.5 percent, respectively, compared to Pennsylvania’s 7.8 percent and West Virginia’s 8.1 percent.

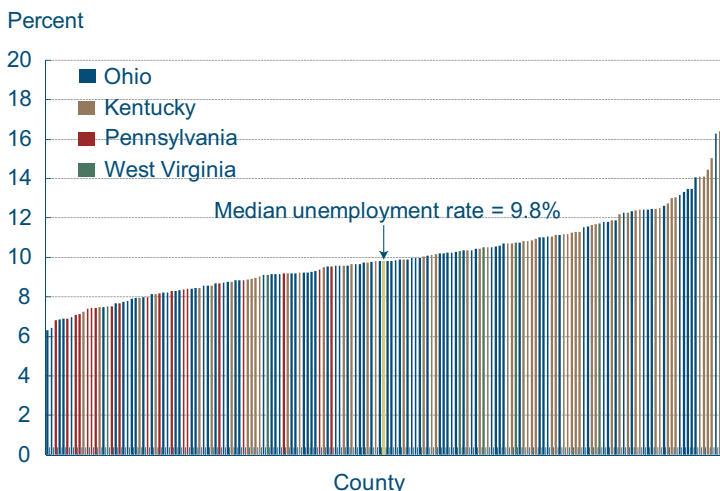
There are significant differences in unemployment rates across counties in the Fourth District. Of the 169 counties that make up the District, 54 had an unemployment rate below the national rate in July and 116 counties had a rate at or higher than 9.1 percent. Roughly half of the District’s counties continue to report double-digit unemployment rates, indicating that the District labor market remains under considerable stress. Geographically, unemployment remains the highest in remote areas

Unemployment Rate



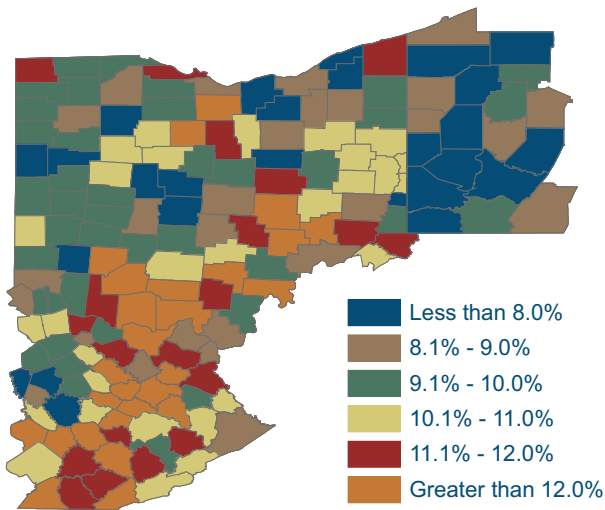
Notes: Seasonally adjusted using the Census Bureau’s X-11 procedure. Shaded bars represent recessions. Some data reflect revised inputs, reestimation, and new statewide controls. For more information, see <http://www.bls.gov/lau/launews1.htm>. Source: U.S. Department of Labor, Bureau of Labor Statistics.

County Unemployment Rates



Note: Data are seasonally adjusted using the Census Bureau’s X-11 procedure. Sources: U.S. Department of Labor, Bureau of Labor Statistics.

Unemployment Rate, July 2011



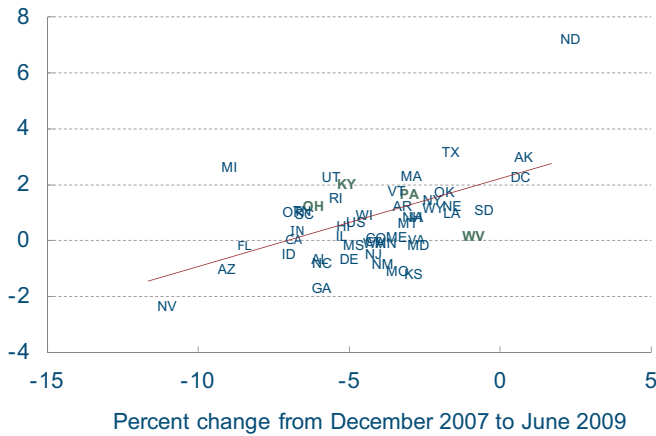
Source: Bureau of Labor Statistics.

of Ohio and Kentucky, while rural Pennsylvania shows marked improvement.

In general, the depth of employment declines within states during recessions is positively correlated (0.53) with employment gains in those states during the subsequent recoveries. This business cycle is different so far, as states that saw the largest employment declines during the past recession have seen little, if any, employment gains during this recovery. However, compared to pre-recession trends, payroll growth during the recovery has been stronger for those states that generated relatively fewer jobs over the 2002 to 2006 period. It is encouraging that the employment growth rates in Kentucky (2.0 percent), Pennsylvania (1.7 percent), and Ohio (1.2 percent) have all exceeded the nation's (0.7 percent) during the recent recovery.

Payroll Employment: Recession Versus Recovery

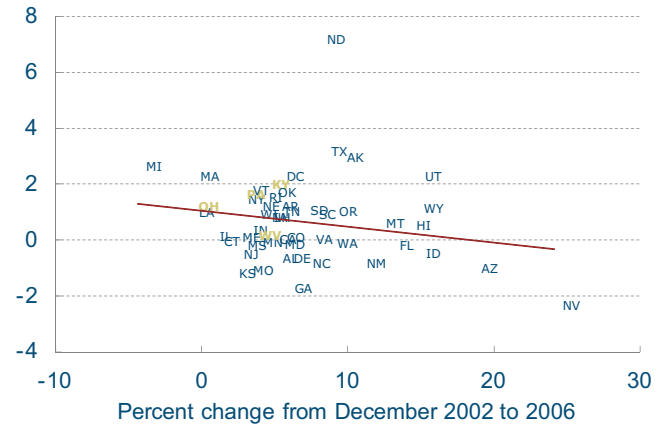
Percent change from June 2009 to July 2011



Source: Bureau of Labor Statistics.

Payroll Employment: Recovery Versus Pre-Recession

Percent change from June 2009 to July 2011



Source: Bureau of Labor Statistics.

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