

Economic Trends

February 2007

(Covering January 11, 2006 - February 8, 2007)

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The Economy in Perspective

02.07.07

by Mark S. Sniderman

Worry is interest paid on trouble before it falls due.

—W.R. Inge (1860–1954), *The Observer* (London, February 14, 1932)

Although still in the throes of a major housing market correction, the U.S. economy ended 2006 in much better shape than many analysts had expected. According to the Bureau of Economic Analysis, real GDP expanded at an annual rate of 3.5 percent in the fourth quarter, and consumption spending clocked in at 4.4 percent. December's unemployment rate of 4.5 percent is quite low by historical standards, and the January 2007 employment report revealed that the 2006 economy generated nearly one million more jobs than were originally reported. As if this were not enough, recent inflation data have been encouraging: The core PCE price index advanced at an annualized rate of only 1.7 percent from September to December.

So why should a central banker be worried? One good reason is that worries are sometimes well founded.

Consider the housing situation. The residential construction slide has been steep, but housing prices have held fairly steady in most markets. Mortgage applications even picked up in the last few months of the year. Despite these signs of stabilization, caution is required. Most housing data are seasonally adjusted, and the weather was unusually mild in many parts of the country earlier this winter. Might we soon discover that some of the strength we see melts with the snow? Second, many people may be keeping their homes off the market at this time of stress, a tactic that temporarily restricts supply. If home sales pick up, will they put their houses up for sale, prolonging the time it takes to normalize inventories? To clear the market, prices might have to adjust more than they already have. And third, how will market developments affect owners' willingness and ability to treat their homes as piggy banks?

If further housing retrenchment appears unlikely today, recall how quickly the stock market collapse and the investment spending bust seemed to materialize out of thin air in 2000. Admittedly, housing and equity markets differ in important ways, not the least of them that people can live in their homes—a fact that in itself could diminish the speed of adjustment, acting as a circuit breaker against fire sale prices.

Perhaps we have not yet read the last chapter of the housing market mystery. The odds favor a relatively happy ending but, in that genre, a few more bodies are often discovered before the last page is turned.

If housing risks don't seem too worrisome, consider the inflation risk. Although both CPI and PCE inflation looked good in the fourth quarter, November's 0.0 percent change was what drove the results. To judge from a broad array of inflation estimators, the underlying CPI inflation trend seems to be in the range of 2 percent to 2-1/2 percent. Core goods prices have been flat lately, a sign that rising service prices are carrying the inflation impulse. Core service prices, which comprise about half of the CPI, have been increasing at a 3.7 percent rate over the last 12 months.

To increase the difficulty of interpreting trend inflation, the distribution of the component price changes has been unusually bimodal for the past year. For example, on an expenditure-weighted basis, the prices of most CPI components in December either declined or rose at rates greater than 3 percent. Hardly any prices increased at the arithmetic average rate.

Movements in inflation rates over short periods of time, even a year or two, are heavily influenced by the process through which price shocks affect individual markets. Over time, however, inflation conforms to the rate of money

growth set by the Federal Reserve as well as by the process that governs inflation expectations. Surprisingly little is known about the mechanism for transmitting monetary impulses through the structure of relative prices. We might expect inflationary episodes to vary according to differences in labor, product, and financial markets at various points in time, as well as on differences in people's beliefs about future inflation.

At the end of its last meeting, the FOMC issued a statement announcing its decision to maintain the federal funds target at 5-1/4 percent, along with a brief description of its rationale. The statement concluded by reiterating a point the FOMC has been making since last June, namely, that some inflation risks remain. Inflation has not worsened since then, an outcome that was still in doubt at the time, but it has not convincingly improved either. Worries exist in two directions—that the rate will edge back up, and that the rate will fail to edge down.

But let's put these concerns in perspective. What about the prospects of inflation becoming unacceptably high? Fortunately, very few are worried about that!

Inflation and Prices

December Price Statistics

December Price Statistics

	Percent change, last					2005 avg.
	1mo. ^a	3mo. ^a	6mo. ^a	12mo.	5yr. ^a	
Consumer prices						
All items	6.7	0.2	0.5	2.5	2.7	2.7
Less food and energy	2.3	1.4	2.0	2.6	2.0	2.6
Median ^b	3.5	3.4	3.6	3.7	2.7	3.7
16% trimmed mean ^b	2.8	1.6	2.2	2.6	2.2	2.7
Producer prices						
Finished goods	11.8	5.1	0.1	1.2	3.2	1.9
Less food and energy	2.3	2.3	1.3	2.0	1.2	2.2

a. Annualized.

b. Calculated by the Federal Reserve Bank of Cleveland.

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

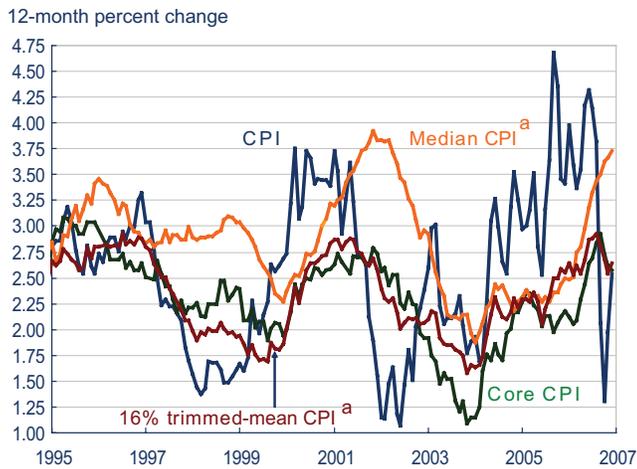
01.31.07

By Michael Bryan and Linsey Molloy

Retail price growth in December suggests that the inflation trend remains steady at around 2 to 2-1/2 percent. The Consumer Price Index (CPI) picked up for the first time in three months during December, rising 6.7 percent (annualized). Energy prices, which declined in each of the preceding three months, jumped about 72 percent during the month. The CPI excluding food and energy prices, commonly known as the Core CPI, rose at a solid 2.3 percent annualized rate, near its 6-month and 12-month averages. Meanwhile, the median CPI and the 16% trimmed-mean CPI rose 3.5 and 2.8 percent, respectively, also in the neighborhood of their recent trends.

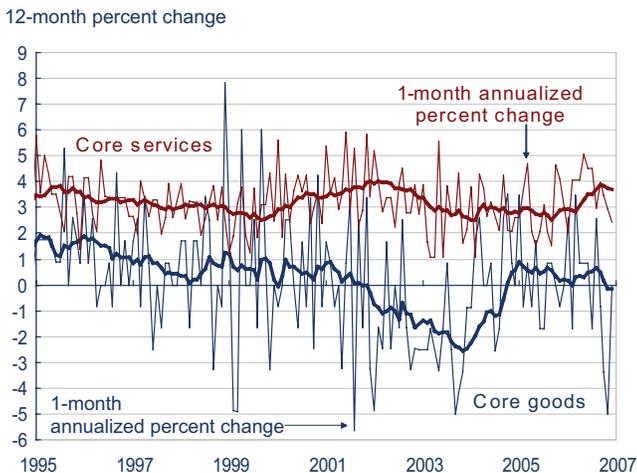
Underlying the longer-term patterns in the retail price measures has been a widening gap between the prices of services, which have been advancing strongly, and goods prices, which have been flat (or declining). Core services, which account for over half of the overall CPI, have risen about 3.7 percent over the past 12 months—up about 3/4 percentage point from the average of the previous several years. However, core goods prices, which account for a bit over one-fifth of the overall index, were essentially unchanged over the past 12 months, roughly a 1/2

CPI, Core CPI, and Trimmed-mean CPI Measures



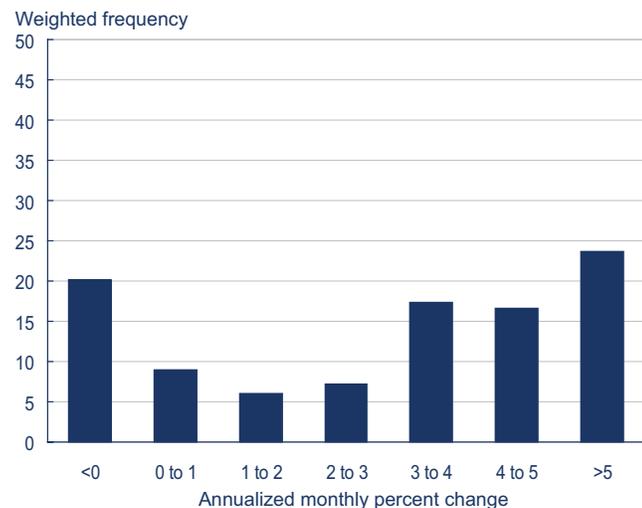
a. Calculated by the Federal Reserve Bank of Cleveland.
Sources: U.S. Department of Labor, Bureau of Labor Statistics; and the Federal Reserve Bank of Cleveland.

Core Goods and Core Services



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

Average of the CPI Component Monthly Price-Change Distributions, 2006



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

percentage point lower than the average growth between 2004 and 2005.

Indeed, the CPI in 2006 exhibited a rather unusual distribution of component price changes. Over 20 percent of the items in the index, on average, posted increases that were relatively modest (20 percent actually declined), while prices for over 55 percent of the items, on average, rose at a relatively elevated rate in excess of 3 percent. It is not particularly strange that price changes in the consumer market basket would show some extreme variation, but it is unusual that so few (roughly 7 percent last year) would show an increase in the neighborhood of what is considered “average”—between 2 and 3 percent.

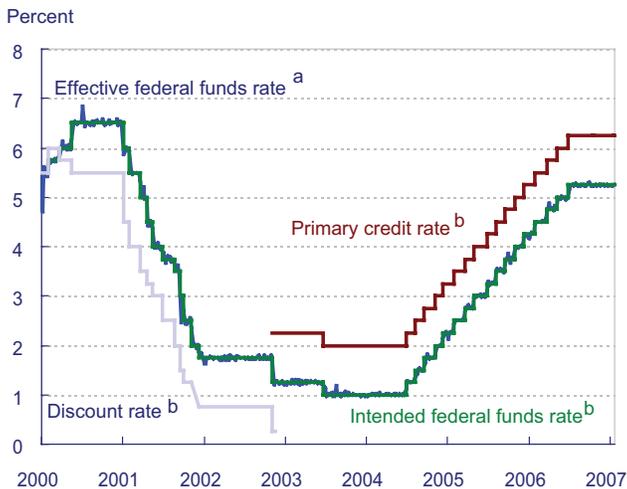
In time, we would expect to see more concordance in the price data about where they are headed, and economists are projecting that the growth rate of the CPI will settle in at a pace a little lower than what we saw in 2006. At this point, however, the price data are not showing a very consistent reading on where the inflation momentum is headed.

Monetary Policy Stays Put

02.07.07

By Guillaume Rocheteau

Reserve Market Rates



a. Weekly average of daily figures.

b. Daily observations.

Sources: Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases*, H.15.

On January 31, 2006, the Federal Open Market Committee voted to leave the federal funds target rate at 5.25 percent for the fifth consecutive time. The primary credit rate has also been maintained at 6.25 percent. In its press release, the Committee explained that its decision to maintain the status quo was based on the fact that "readings on core inflation have improved modestly in recent months, and inflation pressures seem likely to moderate over time." But it also noted that "some inflation risks remain" due to "firmer economic growth" and a "high level of resource utilization." The next meeting is scheduled for March 21.

The real federal funds rate--defined as the effective federal funds rate less core inflation in personal consumption expenditures (PCE)--remains stable at 2.96 percent. Since January 2004, it has gained 3.61 percentage points.

The monetary authorities' decision to leave their key interest rate unchanged hardly came as a surprise. At the close of business on January 30, the Chicago Board of Trade's federal funds rate futures revealed that investors were assigning a 98 percent chance to the possibility that the Committee would leave the target rate unchanged, and a mere 2 percent probability that the Committee would decrease the rate by 25 basis points, from 5-1/4 percent to 5 percent.

Real Federal Funds Rate*

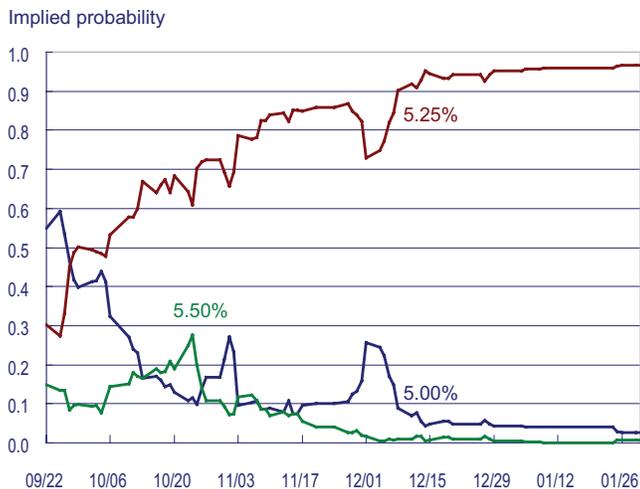


*Defined as the effective federal funds rate deflated by the core PCE.

Shaded bars represent periods of recession.

Source: U.S. Department of Commerce, Bureau of Economic Analysis; Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases*, H.15; Federal Reserve Bank of Philadelphia; and Bloomberg Financial Information Services.

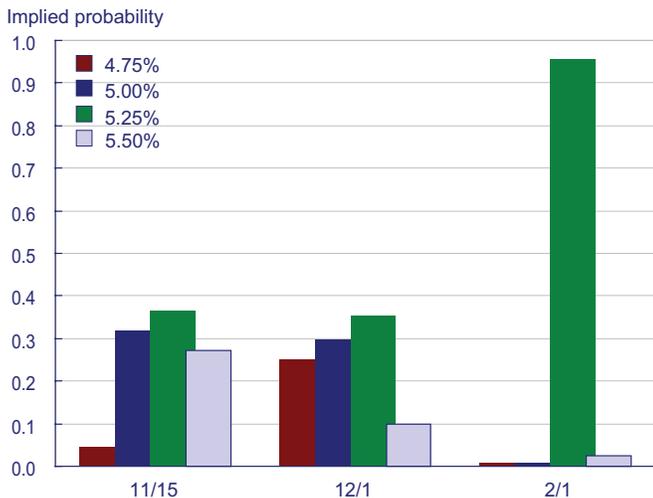
Implied Probabilities of Alternative Target Federal Funds Rates January Meeting Outcome*



*Probabilities are calculated using trading-day closing prices from options on January 2007 federal funds futures that trade on the Chicago Board of Trade.

Source: Chicago Board of Trade; and Bloomberg Financial Services.

Implied Probabilities of Alternative Target Federal Funds Rates March Meeting Outcome*



*Probabilities are calculated using trading-day closing prices from options on January 2007 federal funds futures that trade on the Chicago Board of Trade.

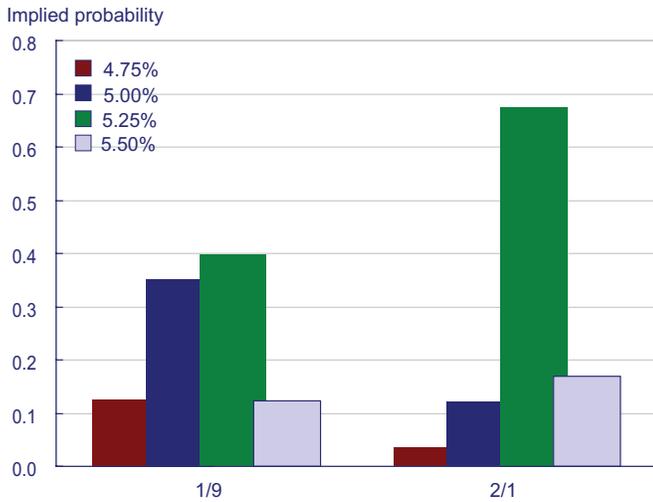
Sources: Chicago Board of Trade; and Bloomberg Financial Services.

Since the end of 2006, investors in federal funds futures have revised their estimates of the likelihood of monetary policy softening in the very near future considerably. In mid-November 2006, they viewed a rate cut by March 2007 as almost as probable as a rate hike or no change. By the beginning of December, the probability of a cut (to 5 percent or 4.75 percent) had climbed to more than 50 percent, thanks to steady inflation numbers and some signs of slowing economic activity (such as GDP growth). Since then, new data have been released indicating both inflation risks and sustained economic activity, and at its latest meeting, the Federal Open Market Committee reaffirmed that “the extent and timing of any additional firming that may be needed to address [inflation] risks will depend on the evolution of the outlook for both inflation and economic growth.” As a consequence, the probability of a federal funds rate target at 5 percent or below has fallen dramatically, and investors now view a federal funds rate at 5.25 percent the most likely event, with a probability above 90 percent.

Similarly, at the beginning of January 2007, the probability of an interest rate cut to 4.75 percent or 5 percent by June 2007 was close to 50 percent. Within a month, this probability had fallen below 20 percent. Currently, investors in federal funds futures believe that interest rates will stay unchanged until the middle of the year, with a probability of close to 2/3.

As the Committee emphasized in its press release, “the evolution of the outlook for both inflation and economic growth” are considered when determining the target federal funds rate. The Federal Reserve monitors price level indices such as the personal consumption expenditure (PCE) deflator and the consumer price index (CPI), and it tightens its policy when inflation risks build up. For instance, the sequence of 17 rate hikes after June 2004 followed increases in the core PCE and core CPI of 0.7 and 0.8 percentage points, respectively, in the first half of 2004. Since August 2006, core PCE inflation has decreased from 2.44 percent to 2.22

Implied Probabilities of Alternative Target Federal Funds Rates June Meeting Outcome*

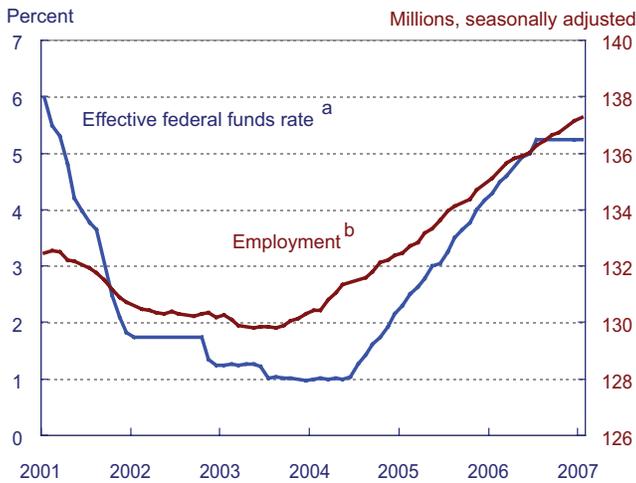


* Probabilities are calculated using trading-day closing prices from options on January 2007 federal funds futures that trade on the Chicago Board of Trade. Sources: Chicago Board of Trade; and Bloomberg Financial Services.

percent, and core CPI inflation has decreased from about 2.83 percent to 2.61 percent. The expectation that these core inflation rates would continue to fall to some acceptable levels warranted a pause in the policy of interest rate hikes in 2006.

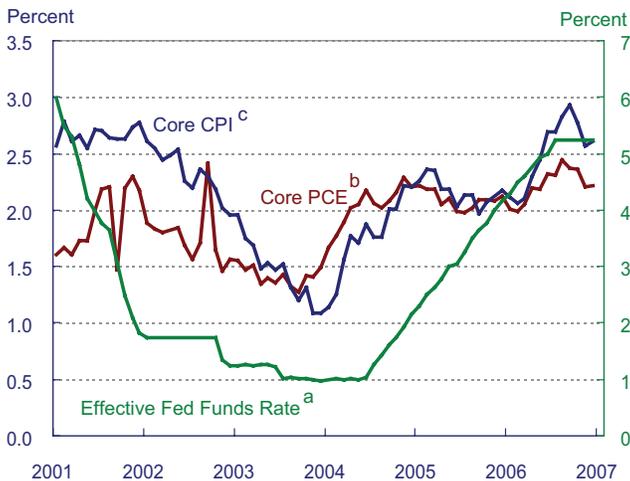
The Committee also considers its objective to promote effectively maximum employment when determining the stance of monetary policy. The increase in interest rates since the second half of 2004 has accompanied the steady tightening of the labor market. Since the beginning of 2004, the economy has posted large employment gains, approximately 188 thousand workers per month on average. During the same period, the unemployment rate fell from 5.7 percent to 4.6 percent, indicating a high utilization of input factors. Despite higher interest rates, economic activity remains strong. From November 2006 to January 2006, employment increased from 136.9 million to 137.3 million, and real GDP grew at 3.5 percent (in annualized terms) over the last quarter of 2006. The economy has added an average of 171 thousand jobs per month since November.

Fed Funds Rate and Employment



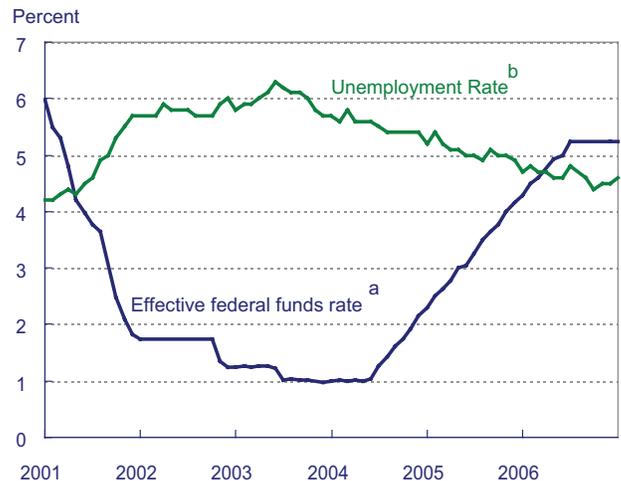
a. Monthly average of daily figures.
 b. Total nonfarm payroll employment.
 Sources: Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases, H.15*; and the U.S. Department of Labor, Bureau of Labor Statistics.

Federal Funds Rates and PCE Inflation



a. Monthly average of daily figures.
 b. PCE is Personal Consumption Expenditures; core PCE is less food and energy; monthly observations; year-over-year percent change.
 c. CPI less food and energy; monthly observations; year-over-year percent change.
 Sources: Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases, H.15*; and the U.S. Department of Commerce, Bureau of Economic Analysis.

Fed Funds Rate and Unemployment

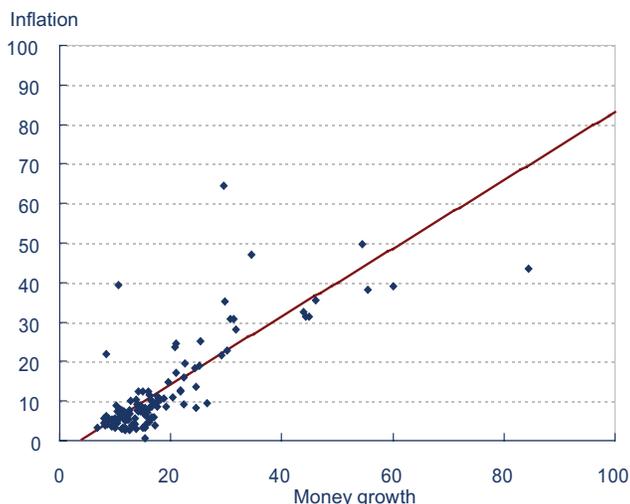


a. Monthly average of daily figures.
 b. Civilians over 16 years of age; seasonally adjusted.
 Sources: Board of Governors of the Federal Reserve System, "Selected Interest Rates," *Federal Reserve Statistical Releases, H.15*; and the U.S. Department of Labor, Bureau of Labor Statistics.

Money, Financial Markets, and Monetary Policy

Monetary Aggregates

Money Growth and Inflation*



*This chart has been adapted from George T. McCandless and Warren E. Weber, "Some Monetary Facts," Federal Reserve Bank of Minneapolis, *Quarterly Review*, vol. 19 (1995), pp. 2-11.
 Source: International Monetary Fund, "International Financial Statistics," December 2006.

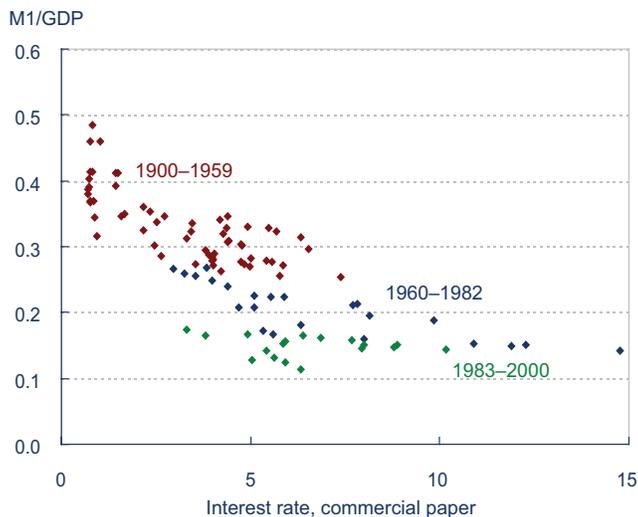
01.02.07

By Guillaume Rocheteau

According to Milton Friedman's famous aphorism, "inflation is always and everywhere a monetary phenomenon." A look at the data on inflation and the growth of the money supply across countries suggests that the two are indeed very closely related: The correlation between inflation and average M2 growth in 132 countries over the period 1960–2000 is close to one (0.86), suggesting that prices move almost proportionally with the stock of money. And yet the Federal Reserve stopped reporting the broadest monetary aggregate, M3, last year, and the time has long since past that it reported growth rate targets for money aggregates.

Irving Fisher formulated the notion of the almost-proportional relationship between money and prices as the equation of exchange. Loosely speaking, the equation states that the amount of money in the economy multiplied the number of times that money changes hands in a given period (this number is referred to as the velocity of money) must be equal to the value of the transactions con-

U.S. Money Demand

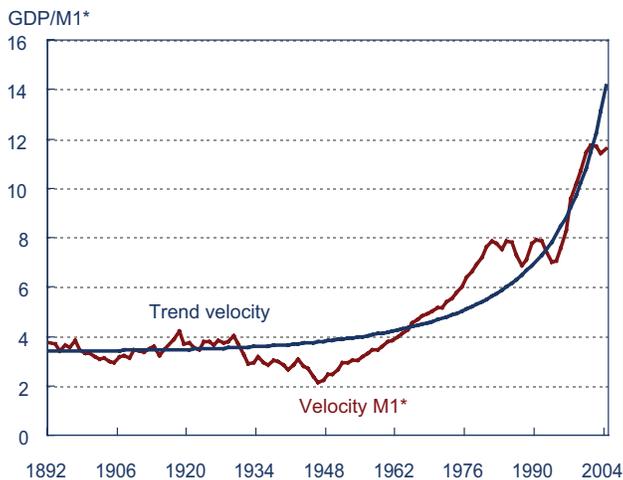


Sources: Robert Lucas. 2000. "Inflation and Welfare," *Econometrica*, vol. 68, pp. 247-74; and Ben Craig, and Guillaume Rocheteau. 2006. "Inflation and Welfare: A Search Approach," Federal Reserve Bank of Cleveland, *Policy Discussion Paper*, no. 12.

ducted in the same period. Fisher's equation is true by construction; it doesn't tell you much until you make additional assumptions. If we assume velocity and the volume of transactions are roughly constant over some period of time, for instance, the equation says the relationship between money and prices will be proportional.

Economists used to assume that velocity was, in fact, fairly constant over time, or that it varied with other factors in predictable ways. The evidence we have now suggests this used to be the case but is no longer. If we look at one measure of the money supply, $M1^*$ (which is $M1$ minus the value of currency circulating abroad and is used because a sizable fraction of U.S. currency is held abroad), we see that its velocity of circulation (nominal GDP divided by $M1^*$) has changed over the past century. Until 1960, velocity varied around a constant mean of less than 4, but thereafter it has increased significantly. If velocity is variable and unpredictable, the relationship between money and prices is difficult to characterize, and monetary aggregates can't help policymakers track inflation.

Velocity of $M1^*$ in the United States over the Last Century

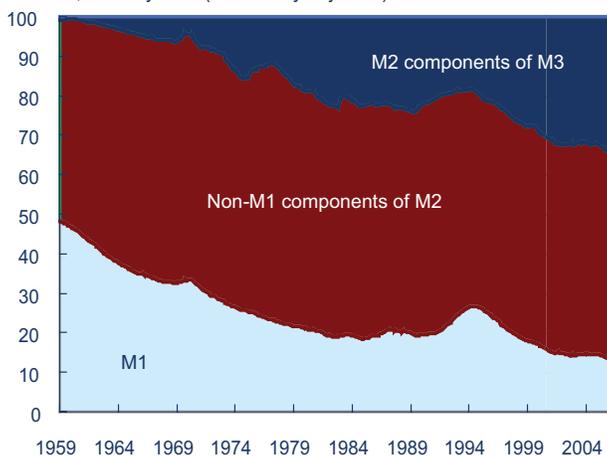


Source: Miquel Faig and Belen Jerez, "Precautionary Balances and the Velocity of Circulation of Money," *Journal of Money, Credit, and Banking* (forthcoming, 2006).

Nominal interest rates can affect velocity. To see how, think about the flip side of velocity. Flipping over the measure of velocity we looked at above, we get the supply of money over nominal GDP, which is a measure of money demand (that is, money balances held by individuals). Theories of money demand predict that demand declines with the opportunity cost of money, measured by the nominal interest rate of commercial paper, because a higher opportunity cost of holding money induces people to economize on their money balances relative to spending. Over the twentieth century, in fact, the relationship between interest rates and money demand has been negative in the United States. Unfortunately, the relationship does not appear to be stable over time. The demand for money balances was higher in the 60s and 70s than it was in the 80s and 90s, and in the first half of the twentieth century it was higher still. Furthermore, since the beginning of the 80s, money demand has become less sensitive to changes in the interest rate. (Graphically, it has flattened out.) Because interest rates don't affect money demand (or its inverse, velocity) in a predictable way over time, measures of money

Composition of the Money Supply

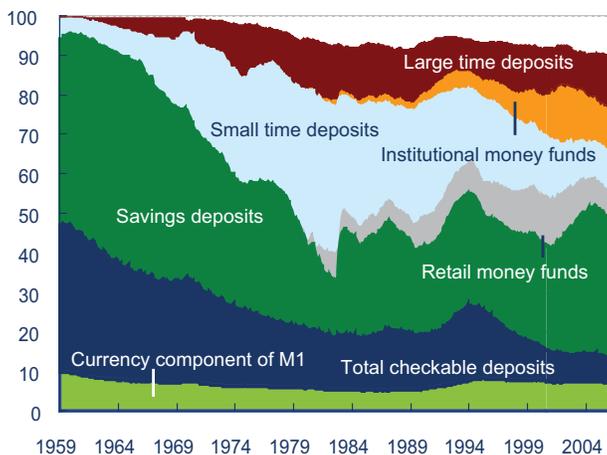
Percent, monthly data (seasonally adjusted)



Source: Federal Reserve Bank of St. Louis, "Monetary Aggregates," FRED database.

Composition of the Monetary Aggregates

Percent of M3



Source: Federal Reserve Bank of St. Louis, "Monetary Aggregates," FRED database.

can be misleading as sources of information about future prices.

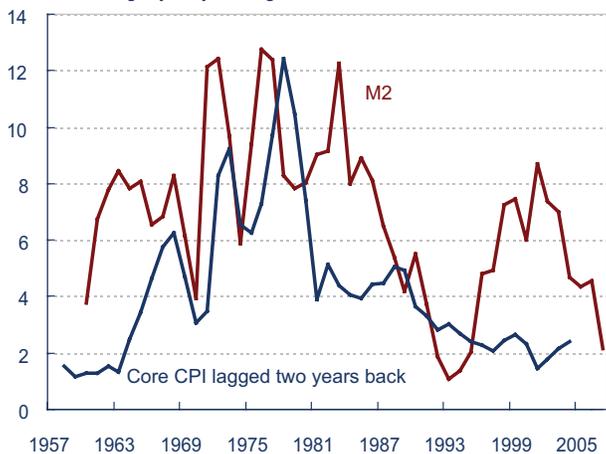
One explanation for why the relationship between money demand and interest rates might have changed is that the assets included in M1 (currency and checkable deposits) no longer capture households' transactions balances accurately. Deregulation and financial innovation have led to new financial products (such as money market deposit accounts and money market mutual funds) that are not included in M1 but can readily be transformed into means of payments. As such, they are close substitutes to the assets in M1. For instance, the fact that individuals can transfer funds from non-interest bearing checking accounts to savings accounts at a high frequency has reduced the relevance of M1. The lesser importance of M1 is reflected in its declining share in M3. The share of checkable deposits in M3 has declined steadily over time while the share of money funds has been increasing.

Is the velocity of circulation of other monetary aggregates more stable than the velocity of M1? In fact, the velocities of M2 and M3 have gone through substantial swings, too. While the velocity of M2 appeared to be fairly stable until the end of the 80s, it increased sharply from the beginning of the 90s until 1997 and fell abruptly in the subsequent five years. The velocity of M3 declined steadily until the mid 80s, increased from 1987 to 1995, and fell again from 1995 to 2003. These movements cannot be explained by changes in nominal interest rates only. Again, deregulation and financial innovation that make portfolio readjustments among monetary assets easier have played a role.

The instability of velocity notwithstanding, can the changes in the rate of growth of money supply help predict the future changes in the inflation rate? Changes in money growth rates predict fairly well changes in the inflation rate that occur two years later—until the end of the 70s. Since then, ample movements in the money supply do not appear to predict accurately either the magnitude or the direction of future changes in the inflation rate. As

Rate of Growth of M2 and Prices

Percent change, yearly averages



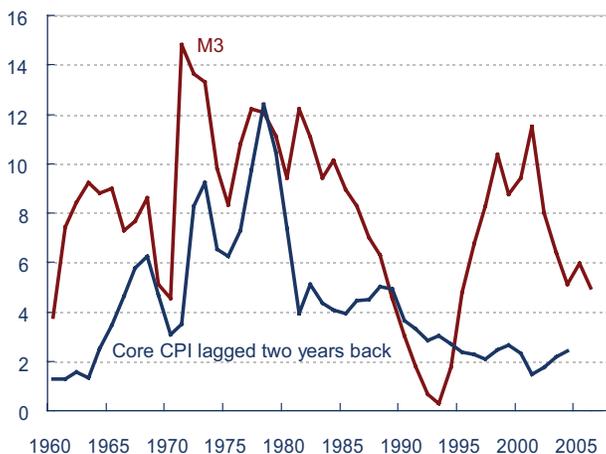
Sources: Federal Reserve Bank of St. Louis, "Monetary Aggregates," FRED database; and the Bureau of Labor Statistics.

a result, monetary aggregates cannot be used alone to predict or control inflation.

But as Chairman Ben Bernanke indicated on November 10, 2006: "although a heavy reliance on monetary aggregates as a guide to policy would seem unwise in the U.S. context, money growth may still contain important information about future economy developments. Attention to money growth is thus sensible as part of the eclectic modeling and forecasting framework used by the U.S. central bank."

Rate of Growth of M3 and Prices

Percent change, yearly averages



Source: Miquel Faig and Belen Jerez, "Precautionary Balances and the Velocity of Circulation of Money," *Journal of Money, Credit, and Banking* (forthcoming, 2006).

Velocity of Circulation of M2 and M3

Ratio, quarterly data (seasonally adjusted)



Source: Federal Reserve Bank of St. Louis, "Monetary Aggregates," FRED database; and the Bureau of Economic Analysis.

Rate of Growth of M1 and Prices

Percent change, yearly averages



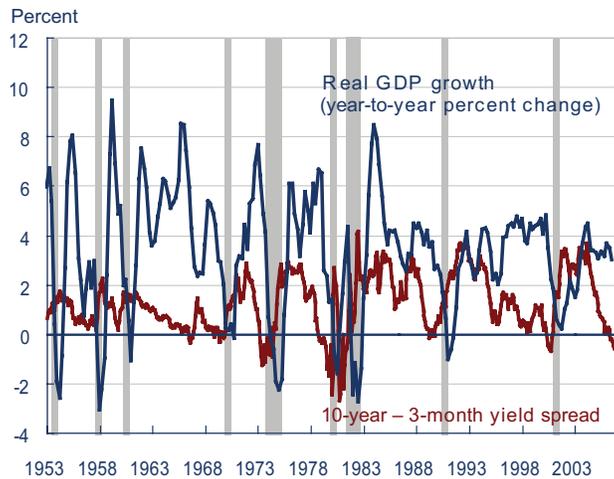
Sources: Federal Reserve Bank of St. Louis, "Monetary Aggregates," FRED database; and the Bureau of Labor Statistics.

What Is the Yield Curve Telling Us?

01.16.07

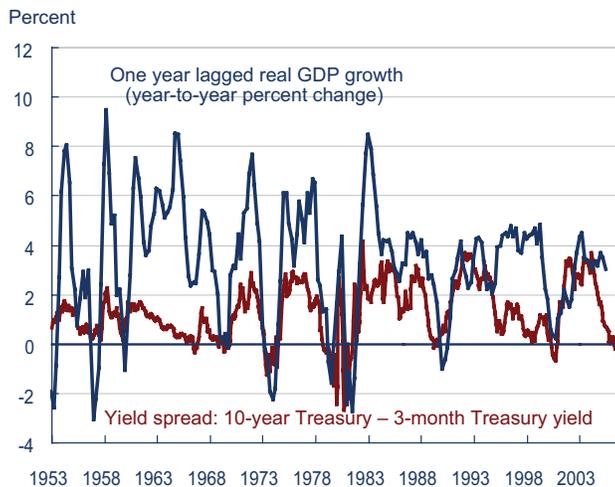
by Joseph G. Haubrich and Brent Meyer

Yield Spread and Real GDP Growth



*Shaded areas represent recessions.
Sources: Department of Commerce, Bureau of Economic Analysis; Board of Governors of the Federal Reserve System.

Yield Spread and Lagged Real GDP Growth



Sources: Department of Commerce, Bureau of Economic Analysis; and Board of Governors of the Federal Reserve System.

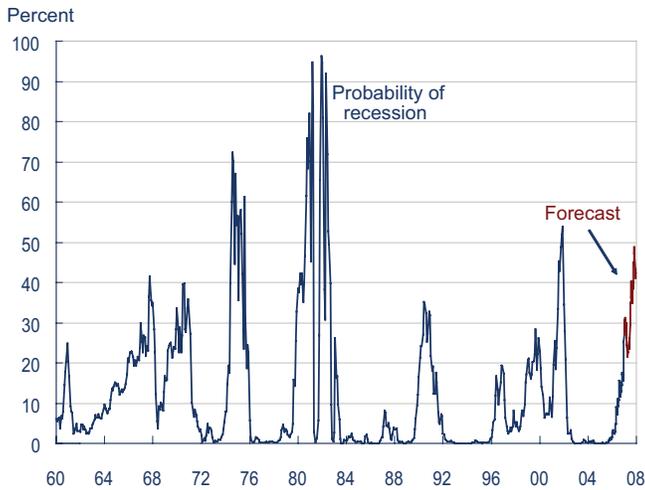
The slope of the yield curve has achieved some notoriety as a simple forecaster of economic growth. The rule of thumb is that an inverted yield curve (short rates above long rates) indicates a recession in about a year, and yield curve inversions have preceded each of the last six recessions (as defined by the NBER). Very flat yield curves preceded the previous two, and there have been two notable false positives: an inversion in late 1966 and a very flat curve in late 1998. More generally, though, a flat curve indicates weak growth, and conversely, a steep curve indicates strong growth. One measure of slope, the spread between 10-year bonds and 3-month T-bills, bears out this relation, particularly when real GDP growth is lagged a year to line up growth with the spread that predicts it.

Lately, the yield curve has some forecasters worried. One reason for concern is that the spread is currently negative: with 10-year rate at 4.66 percent and the 3-month rate at 5.05 percent (both for the week ending January 5), the spread stands at a negative 39 basis points, and indeed has been in the negative range since August. Projecting forward using past values of the spread and GDP growth suggests that real GDP will grow at about a 1.6 percent rate over the next year.

While such an approach predicts when growth is above or below average, it does not do so well in predicting the actual number, especially in the case of recessions. Thus, it is sometimes preferable to focus on using the yield curve to predict a discrete event: whether or not the economy is in recession. Looking at that relationship, the expected chance of a recession in the next year is 43 percent.

UPDATE (02.01.07): Of course, it might not be advisable to take this 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

Probability of Recession Based on Yield Spread*

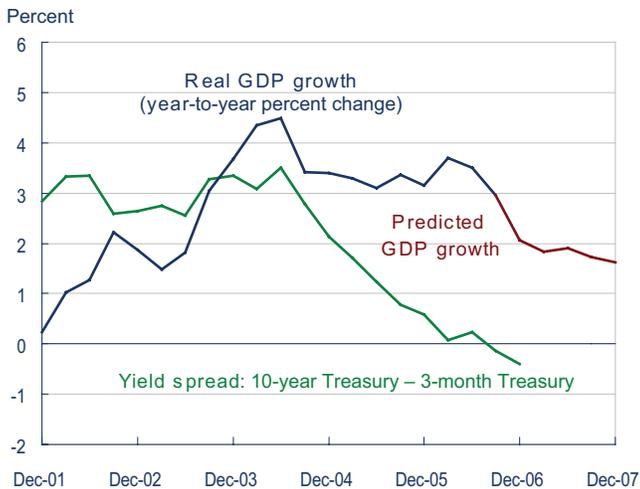


*Estimated using probit model.
Sources: Department of Commerce, Bureau of Economic Analysis;
and Board of Governors of the Federal Reserve System.

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 using the yield curve to predict recessions, see the Commentary “Does the Yield Curve Signal Recession?”

Yield Spread and Predicted GDP Growth



Sources: Department of Commerce, Bureau of Economic Analysis;
and Board of Governors of the Federal Reserve System.

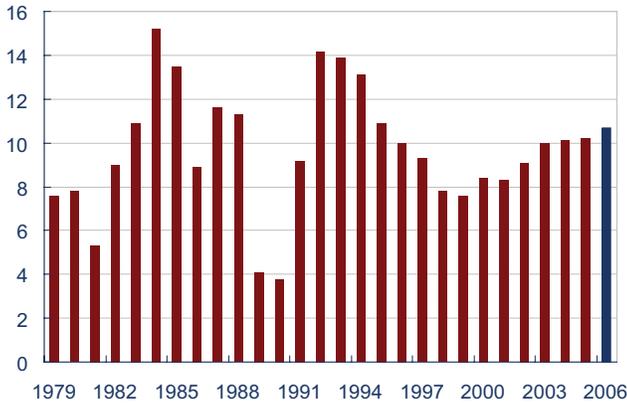
China's Economy

02.02.07

by Owen F. Humpage and Michael Shenk

Real GDP Growth*

Percent change



*2006 preliminary National Bureau of Statistics.
Source: National Bureau of Statistics of China; Haver Analytics.

Consumer Price Inflation

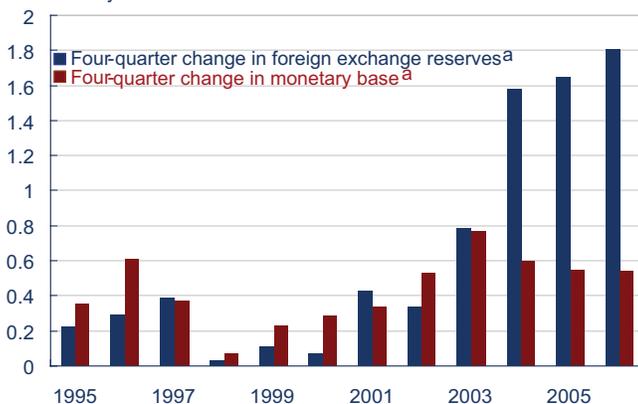
Percent change, year over year



Source: National Bureau of Statistics of China; Haver Analytics

Sterilization of Reserve Flow

Trillions of yuan



a: 2006 data is for the third quarter.
Source: International Monetary Fund, *International Financial Statistics*.

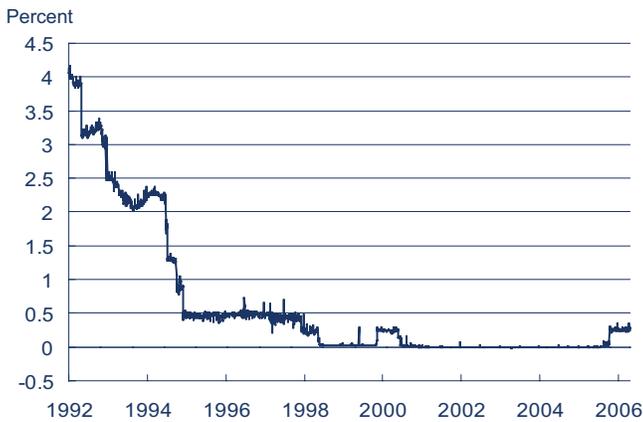
China's economy expanded 10.7 percent in 2006, its fastest rate of growth in eleven years, due to strong exports and investment spending. The pace was somewhat faster than most observers had anticipated and occurred despite Chinese attempts to cool the economy through selective credit controls. Chinese planners apparently view the current rate of economic growth as too fast and destined to run up against capacity constraints—notable in electricity generation. Economists anticipate slower growth this year, around 9-1/2 percent, but a year ago, economists issued the same prediction for 2006.

Despite the rapid economic growth and concerns about building price pressures, inflation in China has remained fairly subdued. Last year, consumer prices advanced only about 1.6 percent on average.

One thing that might help limit inflationary pressures in China is allowing the renminbi to appreciate faster against the dollar. Under its peg and subsequent limited float, China has accumulated a huge portfolio of foreign exchange, mostly dollars. All else constant, China's monetary base should keep pace with its reserve accumulation, but the Peoples Bank of China has offset (sterilized) roughly one-half of the impact since early 2001 by selling bonds to the market. This cannot continue indefinitely. Greater exchange rate flexibility would help limit China's reserve accumulation.

Japanese Monetary Policy

Japanese Overnight Call-Money Rate



Source: Bloomberg Financial Information Services.

Consumer Price Inflation, Japan



Sources: Bank of Japan, Ministry of Internal Affairs and Communications; and Haver Analytics.

01.31.07

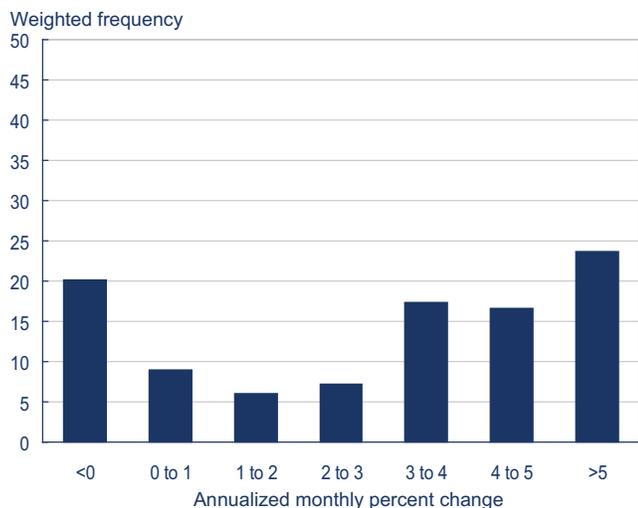
By Owen F. Humpage

The Bank of Japan left its operating target, the uncollateralized overnight call rate, unchanged at 0.25 percent in January. Observers expect that the bank's next move will be upward. The timing of any move remains uncertain and depends on the outlook for economic activity and prices.

The Japanese economy, which grew at a modest pace over the last couple of years, slowed in 2007: IIIQ as consumer spending dropped precipitously. Most economists expect its growth to continue at approximately 2 percent this year. That rate seems slightly faster than Japan's potential for economic growth, implying persistent, yet very moderate, upward price pressure. The inflation rate probably will not exceed 0.5 percent on a year-over-year basis in 2007. The Bank of Japan maintains an informal inflation target of 0 percent to 2 percent for core inflation. An inflation rate of 0.5 percent, however, would leave the real overnight call rate negative.

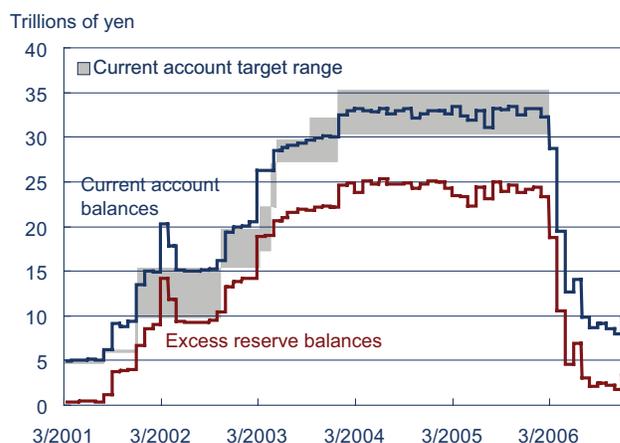
On March 9, 2006, the Bank of Japan announced an end to its quantitative easing policy. Under that operating procedure, the Bank of Japan set a target for current account balances—essentially, non-interest-bearing reserve deposits that financial institutions maintain at the Bank of Japan. Between 2004 and 2006, the procedure left substantial amounts of excess reserves in the Japanese financial system. These reserves have since dissipated, allowing Japanese short rates room to rise somewhat.

Average of the CPI Component Monthly Price-Change Distributions, 2006



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

Reserve Balances

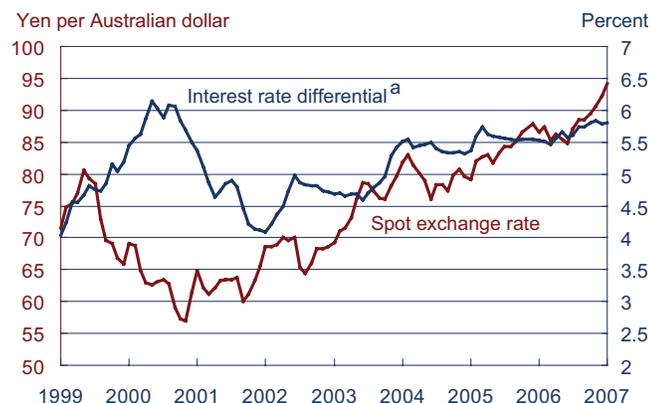


Source: Bank of Japan, Ministry of Internal Affairs and Communication.

International Markets

The Yen Carry Trade

Japanese Yen vs. Australian Dollar



a: Australian 3-month interbank rate minus Japanese 3-month interbank rate.

Source: Bloomberg Financial Information Services

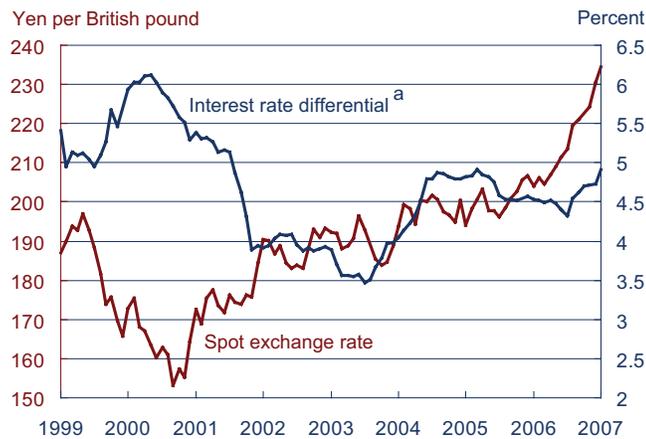
01.31.07

By Owen F. Humpage

The yen carry trade carries on. International investors borrow yen at extremely low Japanese interest rates and invest (carry) the funds in higher yielding, foreign-currency assets for a profit. The Australian dollar, the New Zealand dollar, and the U.K. pound are frequent target currencies for the yen carry trade. Carry-trade investors typically remain exposed to foreign-exchange risk. Consequently, many observers fear that if the Bank of Japan raises interest rates, the carry trade might unwind rapidly with repercussions in global currency markets.

Persistent carry-trade profits seem an economic anomaly. Suppose, for example, that an investor borrows Japanese yen at a low interest rate for three months and places it in a higher-yielding Australian three-month instrument. All else constant, this arbitrage should bid up Japanese interest rates and bid down Australian interest rates until the profit opportunity disappears. The process, however, is even more complicated. Arbitrage also alters two exchange rates—the spot Japanese yen-Australian dollar rate and the rate three months hence. The spot yen will depreciate as investors convert their borrowed yen to dollars, and yen will appreciate

Japanese Yen vs. British Pound



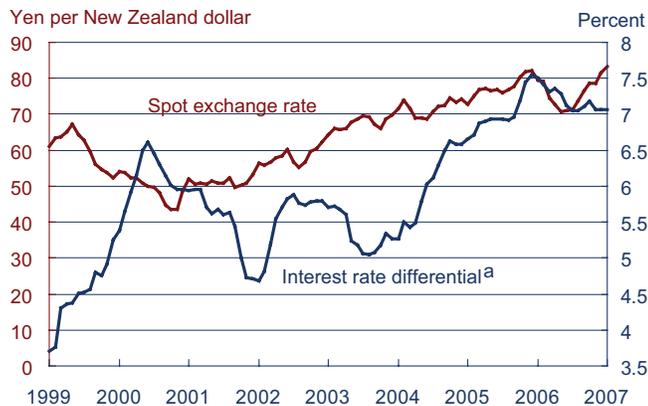
a. British pound 3-month interbank rate minus Japan's 3-month interbank rate.

Source: Bloomberg Financial Information Services

three months hence as investors go back into yen to repay their loans. Arbitrage will wipe out any profit, and any persistent interest-rate differential will be lost in currency conversions. Or so theory suggests.

But other things are not necessarily constant. Empirically, this pattern has not happened, as Federal Reserve Bank of San Francisco economist Michele Cavallo points out. The currencies of countries with low interest rates have tended to depreciate, or to not appreciate sufficiently to offset arbitrage opportunities. This fuels the carry trade and also the fear that a Japanese interest-rate hike might rapidly reverse the yen carry trade.

Japanese Yen vs. New Zealand Dollar



a. New Zealand 3-month interbank rate minus Japanese 3-month interbank rate.

Source: Bloomberg Financial Information Services.

Economic Activity and Labor Markets

Employment during the Recovery

02.07.07

By Peter Rupert and Cara Stepanczuk

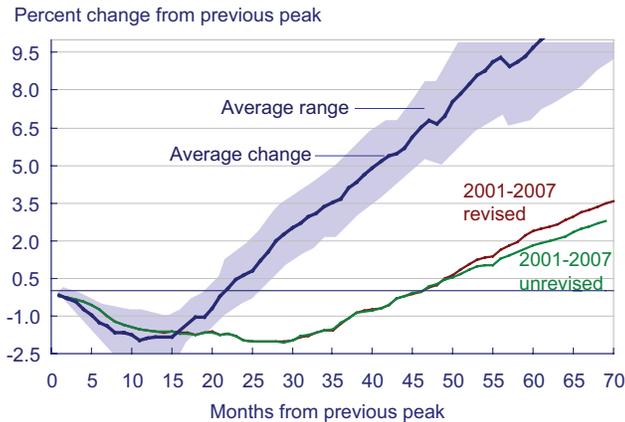
As business cycles go from expansions to recessions, employment and production mirror their trends, increasing during expansions and decreasing during recessions at roughly the same rates.

In terms of production growth, the current expansion (2001–07) has been fairly typical. Measured by GDP, the trough of the business cycle was not as deep as normal; in fact, it barely scraped the upper bound of the average range. The recovery phase for 2001–07 is within the average range, but falls below average growth after eight months.

In contrast, employment during the recovery has been far from normal. It got off to a good start at the peak of the expansion, and was still ahead of the curve at the trough in 2001. After 15 months, though, employment failed to pick up as fast as it should have. Because it stayed relatively flat for an extended period of time, employment took 45 months to regain its pre-recession level.

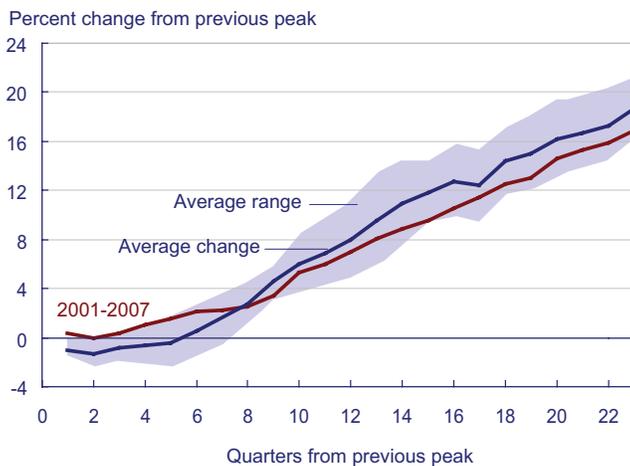
The glaring difference between nonfarm employment for 2001–07 and the average employment growth after a recession cannot be explained by an atypical recession or recovery; real GDP stayed within normal bounds throughout the cycle. Nor can it be explained by the unusually large benchmark revisions in nonfarm employment for April 2005 through March 2006 (seasonally adjusted from 2002 onward) from the BLS; even the upwardly revised data show employment far below ordinary levels. Thus, the current expansion remains a “jobless recovery.”

Business Cycle Pattern: Nonfarm Employment



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

Business Cycle Pattern: Real GDP



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

The Employment Situation

02.05.07

By Peter Rupert and Cara Stepanczuk

Average Monthly Nonfarm Employment Change

Change, thousands of workers



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

Nonfarm payrolls increased by 110,000 net jobs in January, down from December and about 40,000 lower than expected—a muted start to the year. However, 2006 ended with a bang: November and December payrolls were revised upward a net 103,000 jobs, raising the fourth quarter’s average monthly increase to 170,000.

Service-providing industries continue to contribute the most jobs (104,000 in January), but have lost a lot of steam since the 2006:IVQ average contribution of 205,000 jobs. Education and health services grew the most over the month, adding 31,000 net jobs. Professional and business services grew by 25,000, and leisure and hospitality grew by 23,000. Construction’s 22,000 payroll increase helped goods-producing industries post their first net monthly gain since August 2006. However, weakness in motor vehicles and parts; computers and electronics; furniture; and textiles caused a net loss of 16,000 manufacturing jobs.

The employment situation was dramatically altered by the BLS’s annual benchmark revision from April 2005 to March 2006 (seasonally adjusted data were revised from 2002 onward). Whereas the average revision over the prior 10-year period was +/-0.2 percent, this year’s was 0.6 percent, which translated into an increase of 752,000 jobs.

Although no sector changed significantly more than others, there were a few notable industries. Professional and business services posted the largest upward revision, up 230,000 jobs (1.3 percent growth). Construction also changed for the better, reporting a net gain of 189,000 jobs (2.6 percent growth). Trade, transportation, and utilities pitched in another 158,000 jobs (0.6 percent growth). However, the revisions showed that the manufacturing sector did worse than previously thought, losing an additional 21,000 jobs (-0.1 percent

Labor Market Conditions

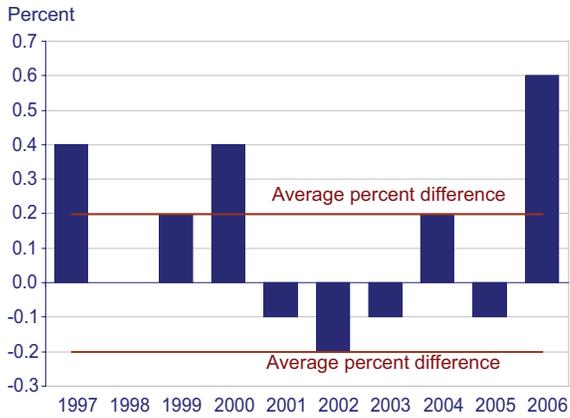
	Average monthly change (thousands of employees, NAICS)				
	2003	2004	2005	Jan.-Dec. 2006	Jan. 2007
Payroll employment	9	172	212	187	111
Goods-producing	-42	28	32	9	7
Construction	10	26	35	12	22
Manufacturing	-51	0	-7	-7	-16
Durable goods	-32	8	2	-1	-28
Nondurable goods	-19	-9	-9	-6	12
Service-providing	51	144	180	178	104
Retail trade	-4	16	19	-4	4
Financial activities*	7	8	14	15	4
PBS**	23	38	57	42	25
Temporary help svcs.	12	11	18	-1	5.7
Education and health svcs.	30	33	36	41	31
Leisure and hospitality	19	25	23	37	23
Government	-4	14	14	20	14
	Average for period (percent)				
Civilian unemployment rate	6.0	5.5	5.1	4.6	4.6

*Financial activities include the finance, insurance, and real estate sector and the rental and leasing sector.

** PBS is Professional Business Services (professional, scientific, and technical services, management of companies and enterprises, administrative and support, and waste management and remediation services).

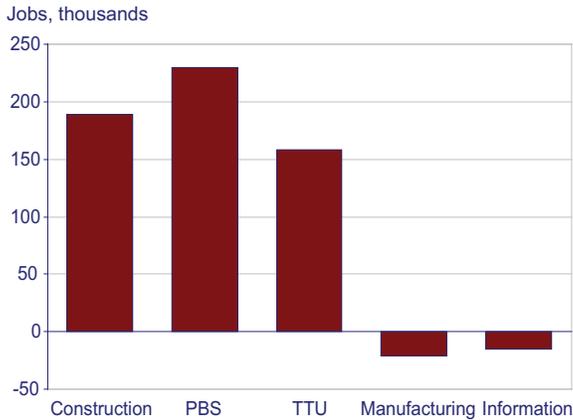
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Percent Differences between Nonfarm Benchmarks



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

Highest and Lowest March 2006 Revisions



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

growth). The information industry did not weather the storm of revisions, either; it lost 15,000 (–0.5 percent growth).

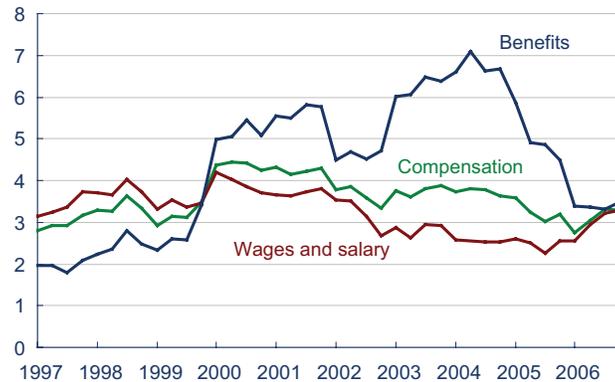
The BLS has offered several reasons for the extreme revisions. Employment estimates for September–October 2006 (post–Hurricane Katrina) allowed more error than usual. Only part of the error was associated with the model-based estimation process for employment in new establishments, the typical source of annual revisions. Most of the employment revisions resulted from an “accumulation” of smaller sources of error, according to the BLS.

The household survey was also adjusted for population controls, but the update applies only to 2007 data. Even with the adjustment, the unemployment rate, labor force participation rate, and employment-to-population ratio were essentially unchanged in January.

Employment Cost Index

ECI: Civilian Workers

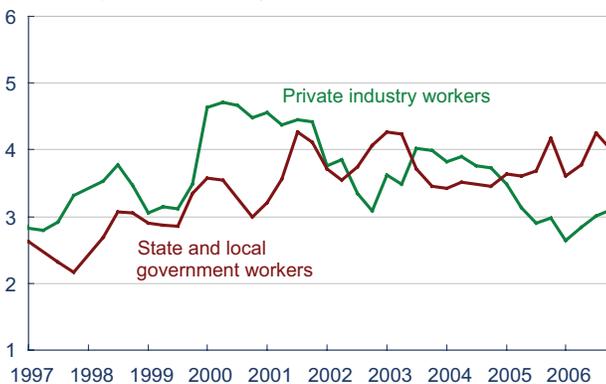
Year-over-year percent change



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

ECI: Compensation

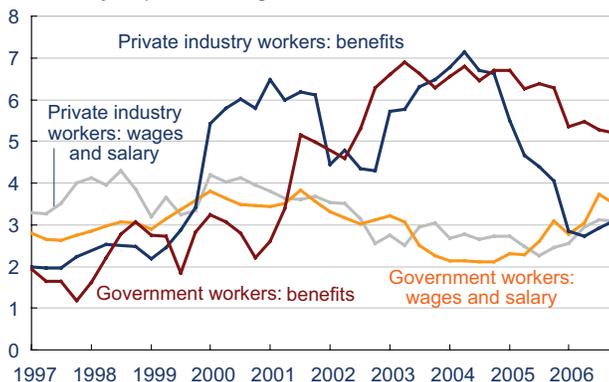
Year-over-year percent change



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

ECI: Private vs. Government

Year-over-year percent change



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

02.02.07

by Tim Dunne and Brent Meyer

The Employment Cost Index (ECI), which measures the changes in employers' wage, salary, and benefit costs, closed out 2006 showing moderate growth. For the entire year, total compensation rose 3.3 percent, wages and salaries rose 3.2 percent, and benefits rose 3.6 percent. Wages and salaries increased slightly more than they did in 2005, while benefits increased less. Indeed, benefits rose less in 2006 than in any year since 1999.

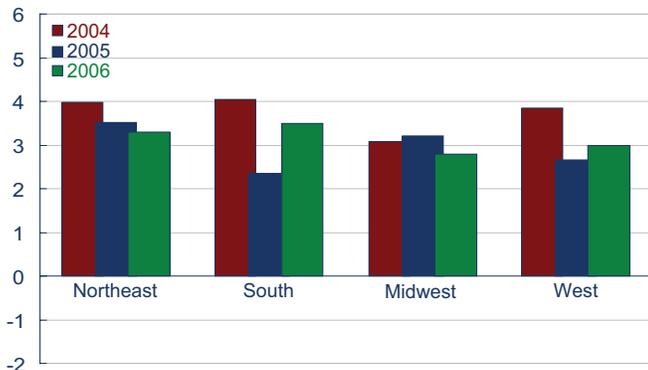
The past two years have witnessed some divergence in employment costs for workers in the private and public sectors. Compensation costs for state and local government workers grew at an average rate of 4.1 percent in the past two years, whereas private sector employment costs increased only 3.0 percent.

Employment cost patterns are different in the private and public sectors mainly because benefit costs are increasing less in the private sector. Unlike salary and wage growth, benefits growth across the two sectors has not tracked closely over time. In the last three years, the growth in benefit costs for private sector workers has fallen substantially; however, the fall in public sector benefit costs since 2004 has been considerably more muted, and currently, the growth of public sector benefit costs exceeds private sector growth by two percentage points.

ECI growth also varies across U.S. regions. From 2004 to 2006, the Midwest experienced, on average, the lowest growth in employment costs in the nation while the Northeast had the highest.

Employment Cost Index*: Compensation by Census Region

Annualized percent change



*Private workers

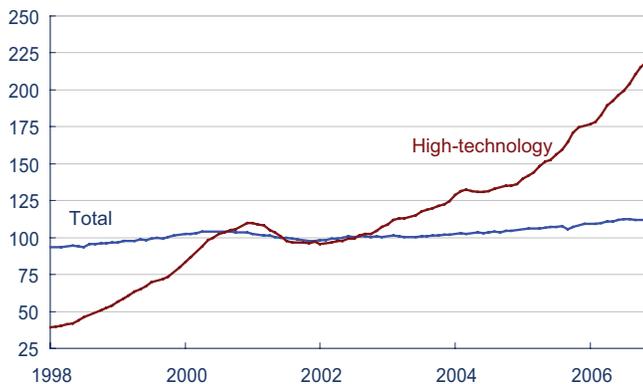
Source: U.S. Department of Commerce, Bureau of Labor Statistics.

Economic Activity and Labor Markets

High-Technology Manufacturing

Industrial Production: High-Technology Manufacturing

Index (SA, 2002=100)



Source: Federal Reserve Board.

01.24.07

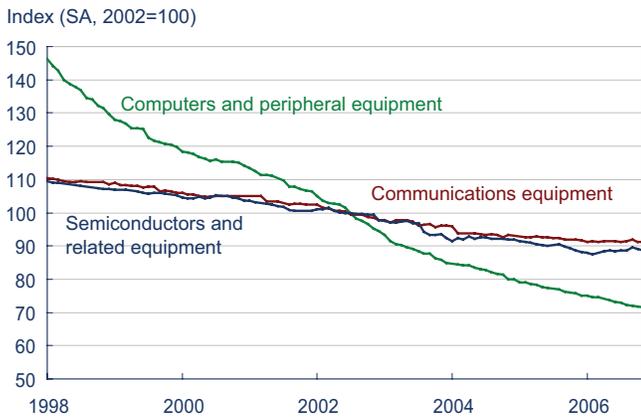
By Tim Dunne and Brent Meyer

Industrial production of high-technology goods grew rapidly in 2006. High-tech manufacturing industries expanded at a 27.3 percent rate during the year, compared to manufacturing's overall rate of 3.0 percent for the industrial sector.

The High-technology Index measures production in three information-technology manufacturing industries and computers, communications equipment, and semiconductors. Recent growth in semiconductor production easily outpaced that of computers and communication equipment. Semiconductors grew at an average annual rate of 35.3 percent in 2005–2006, while computers and communications equipment expanded at roughly half that rate.

The prices of high-technology goods continue to decline. The particularly steep fall in computer prices is partly a reflection of the fact that this price series controls for quality changes in a wide range of computer products, whereas the semiconductor and communications equipment indices contain fewer quality adjustments. Recent studies (here and here) suggest that the published price indices for semiconductor and communications equipment

Industrial Production: High-Technology Producer Price Indexes

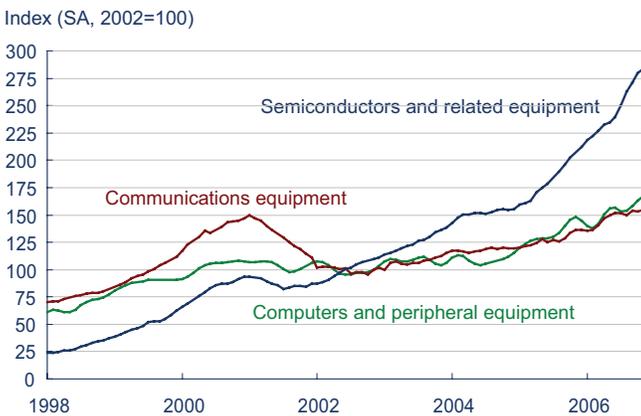


Source: Department of Labor, Bureau of Labor Statistics.

shown in the graph understate real price declines. Nonetheless, it is clear that consumers continue to benefit from falling prices in all these industries.

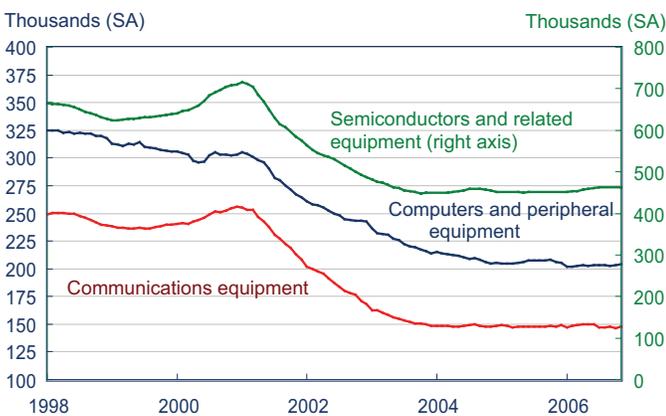
Although high-technology production advanced markedly in these industries over the last several years, employment did not. Between 2001 and 2004, these industries shed more than 460,000 workers, a 36.6 percent decline. In the last two years, employment has stabilized but at a significantly lower level than in 2000. Employment growth in 2005 and 2006 amounted to a net gain of only 10,000 workers, with the increase occurring entirely in semiconductors

Industrial Production: High-Technology Manufacturing Industries



Source: Federal Reserve Board.

Industrial Production: High-Technology Employment



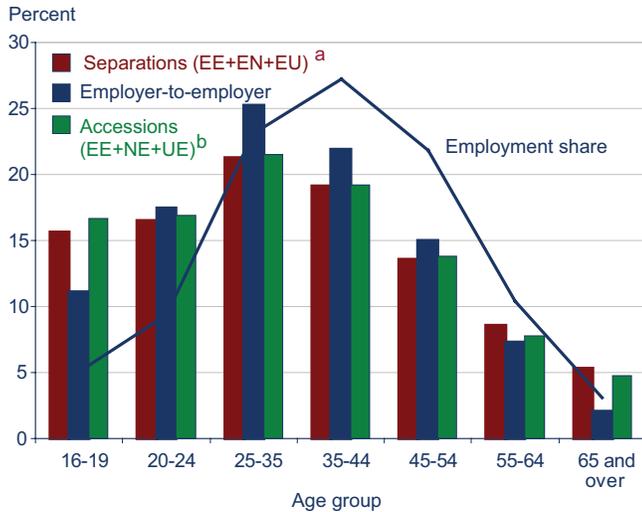
Source: Department of Labor, Bureau of Labor Statistics.

Job-to-Job Movers

01.24.07

By Murat Tasci and Laura Kleinhenz

Contributions to Monthly Employment Transitions by Age (percent)



- a. Total separations consist of three flows: EE Employer-to-employer; EN Employment-to-not in the labor force; EU Employment-to-unemployment.
 b. Total accessions consist of three flows: EE Employer-to-employer; NE not in the labor force-to-employment; UE Unemployment-to-employment.

Source: Bruce Fallick and Charles Fleischman. "Employer-to-Employer Flows in the U.S. Labor Market: The Complete Picture of Gross Worker Flows." Finance and Economics Discussion Series 2004-34. Washington, D.C.: Board of Governors of the Federal Reserve System, 2004.

In a given month, a person's status relative to the labor market can fall in one of three categories: employed (E), unemployed (U) or not in the labor force (N). The extent of the movement among these categories provides valuable information about how well labor markets are functioning. For instance, though a higher flow from U to E or N to E implies a larger increase in employment, it may be the case that not all employed workers have the jobs that would suit them best. They, and the national economy overall, might benefit from a reallocation of workers across existing jobs. Such reallocations might be achieved efficiently through employer-to-employer (EE) transitions, which would not force the worker to go through a spell of unemployment.

A recent study by Bruce Fallick and Charles Fleischman of the Federal Reserve Board documents in detail the number and characteristics of people flowing between and within different categories of labor market status. The researchers estimate that in a given month, 2.6 percent of workers change their employers without a spell of unemployment. This employer-to-employer flow of workers, which constitutes 40 percent of all employer separations, accounts for more than 3 million job movers each month.

Labor market flows also vary by age group. Workers aged 16 to 19 experience 15.6 percent of all separations and 16.7 percent of all flows into employment (which are sometimes called "accessions"). These contributions increase with workers' ages until their mid-30s. Employer-to-employer flows follow a similar pattern. Because inexperienced young workers tend to look for better job matches early in their careers, the combined contribution of the two youngest groups to EE flows is almost double these groups' employment share.

Employment Transitions by Demographic Characteristics

Characteristic	Separations (EE+EU+EN)	EE	Accessions (EE+UE+NE)
Gender			
Female	7.0	2.5	7.1
Male	6.3	2.7	6.2
Race			
Nonwhite	7.7	2.6	7.8
White	6.4	2.6	6.5
Education			
<High school	12.0	3.4	12.5
High school diploma	6.6	2.6	6.5
Some college	6.4	2.7	6.5
College degree	4.6	2.3	4.6
>College	3.9	2.0	3.9

Gross Flows among Labor Market States

State in first month	State in second month (as a percent of state in first month, monthly)			
	Same employer	New employer	Unemployed	Not in the labor force
Employed	93.4	2.6	1.3	2.7
Unemployed	--	28.3	48.4	23.3
Not in the labor force	--	4.8	2.4	92.8

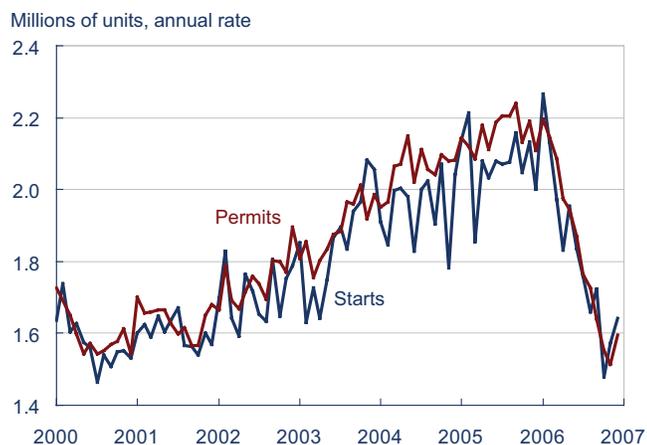
Source: Bruce Fallick and Charles Fleischman. "Employer-to-Employer Flows in the U.S. Labor Market: The Complete Picture of Gross Worker Flows." Finance and Economics Discussion Series 2004-34. Washington: Board of Governors of the Federal Reserve System, 2004.

Employer-to-employer flows also change with demographic characteristics. EE transitions are responsible for 35 percent of the separations experienced by women and 35 percent of their accessions. But a greater share of men's separations and accessions come from EE transitions--44 percent and 42 percent, respectively. Although total flows into and out of employment are significantly higher for nonwhites, the share of EE flows does not vary with race. Even though EE flows decrease with education level, the share of EE flows within total separations and accessions rises with education.

Economic Activity and Labor Markets

Some Say Housing Numbers Encouraging

Housing Starts and Permits



Source: U.S. Department of Commerce, Bureau of the Census.

Single-Family Housing Starts and Permits



Source: U.S. Department of Commerce, Bureau of the Census.

01.23.07

By Ed Nosal and Michael Shenk

The housing permits series, which is less volatile than the housing starts series, tracks housing starts fairly closely. Both of these series—for single-family units as well as total units—reported sustained growth from late 2000 until the summer of 2005. After that, and continuing until recently, all of these series declined substantially. In 2006, permits for both single- and multi-unit structures showed no increase until December, and recent housing starts have not declined from their October numbers.

Most of the post-war recessions have been characterized by substantial declines in starts and permits. The most recent recession (2001) is a notable exception, in which starts and permits did not differ substantially from those observed the previous year. The recent numbers do not necessarily imply that the housing-market slide is over; however, many analysts believe that recent numbers are encouraging and that the housing market may cease to be a drag on economic activity by the end of 2007:IIQ.

Single-Family Housing Starts and Permits*

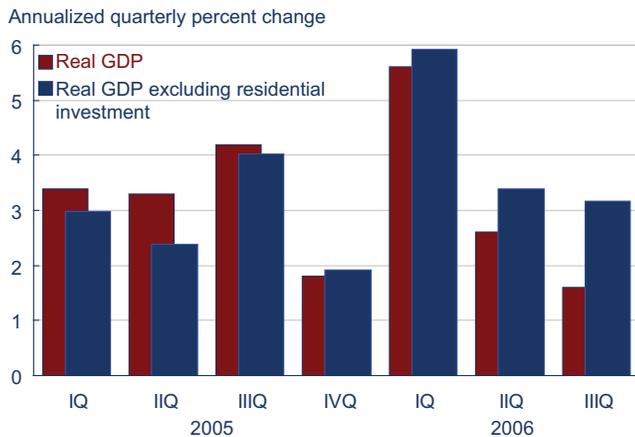


*Gray bars indicate recessions.

Source: U.S. Department of Commerce, Bureau of the Census.

Although residential investment has recently been rather weak, the other components of GDP have been relatively robust. To see this, we compare GDP growth with the same growth rate excluding residential investment. Note that for 2005:IQ, the growth rate for residential construction exceeded that of economic activity overall, whereas for 2006:IQ, it lagged the overall growth rate. General economic activity excluding residential construction registered a solid growth rate of 3.2 percent in 2006:IIIQ

Real GDP Growth Excluding Residential Investment

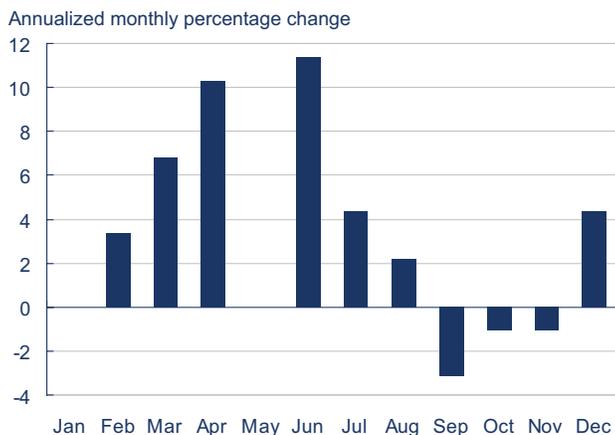


Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Economic Activity and Labor Markets

Industrial Production Closes 2006 in Fine Form

Industrial Production, 2006



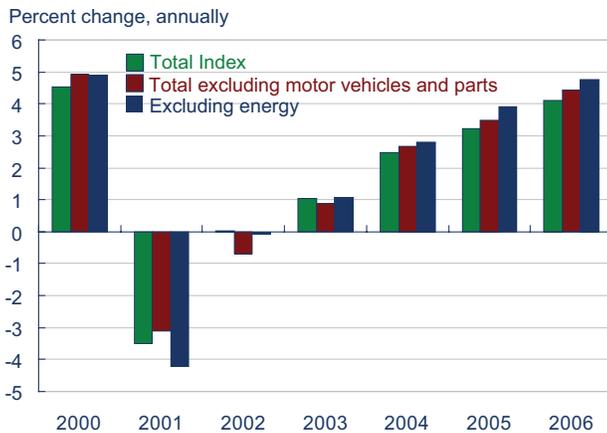
Source: Board of Governors of the Federal Reserve System.

01.23.07

By Ed Nosal and Michael Shenk

During the first eight months of 2006, annualized growth rates for industrial production were, on average, quite strong. During that period, growth rates were never negative and reached annualized highs in excess of 11 percent. The general view was that in the latter part of the third quarter and the first part of the fourth, economic activity was beginning to soften; industrial production posted three consecutive months of negative growth. Many economic indicators subsequently have suggested

Industrial Production



Source: Board of Governors of the Federal Reserve System.

that economic activity is firming; consistent with this view, industrial production ended the year on a strong note.

From the perspective of its recent history, industrial production showed strong growth in 2006, approaching its rates for 2000. Over the last three years, production of motor vehicles, as well as parts and energy-related goods, pulled down the overall index.

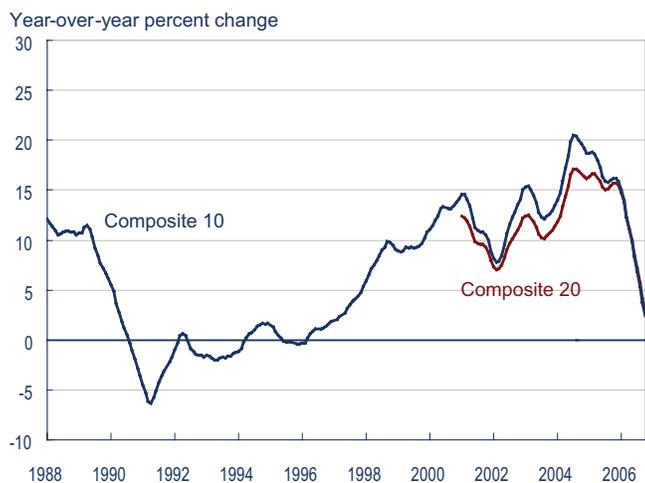
Economic Activity and Labor Markets

New Cities Added to Case-Shiller Home Price Indices

01.22.07

By David E. Altig and Brent Meyer

Case Shiller Home Price Indices



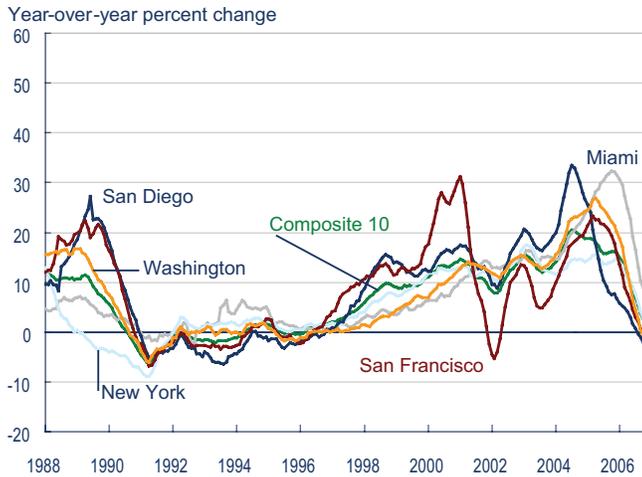
Source: Standard&Poor's S&P Case-Shiller Home Price Indices, Fiserv, MacroMarkets.

One of the more closely watched indicators of residential housing activity is the Standard & Poor's S&P Case-Shiller index, which tracks housing prices in select markets across the country. Until recently, individual-market and composite indices (measuring the average across markets) were restricted to the areas represented by 10 cities -- Boston, Chicago, Denver, Las Vegas, Los Angeles, Miami, New York, San Diego, San Francisco, and Washington, D.C. Last month an expanded index was introduced that includes 10 more metropolitan areas -- Atlanta, Charlotte, Cleveland, Dallas, Detroit, Minneapolis, Phoenix, Portland, Seattle, and Tampa.

Although the broader 20-market price index did not quite reach the heights of the 10-market index over the 2002-2004 "boom" period, the fall-off in the growth rate in prices has been just as dramatic:

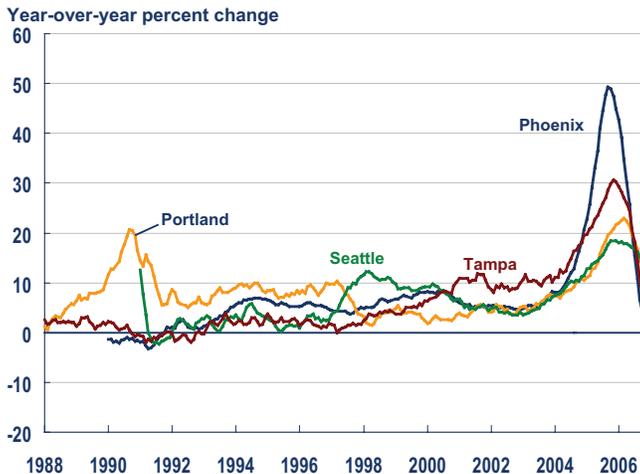
The experiences of the markets in the original set of 10 cities have been relatively similar over the past five years -- very robust housing-price growth early on followed by a sharp decline, commencing sometime during the past year to year-and-a-half:

Case Shiller Home Price Indices



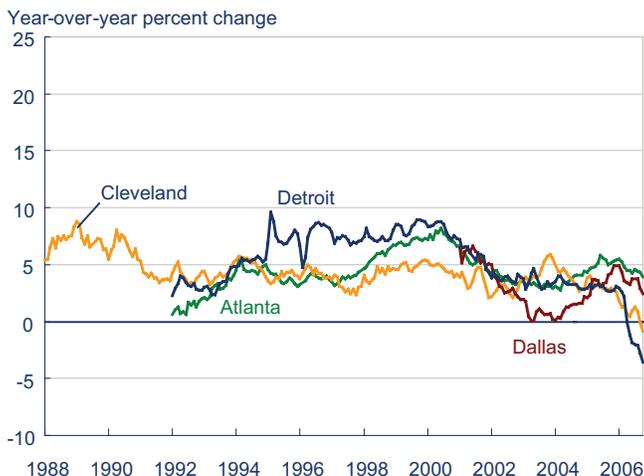
Source: Standard&Poor's S&P Case-Shiller Home Price Indices, Fiserv, MacroMarkets.

Case Shiller Home Price Indices



Source: Standard&Poor's S&P Case-Shiller Home Price Indices, Fiserv, MacroMarkets.

Case Shiller Home Price Indices



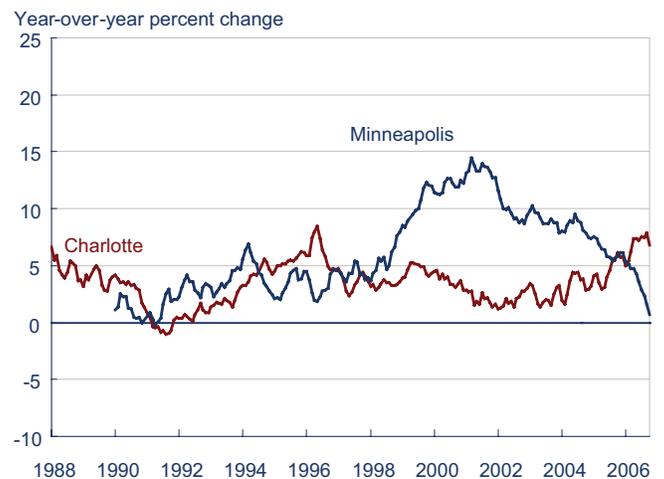
Source: Standard&Poor's S&P Case-Shiller Home Price Indices, Fiserv, MacroMarkets.

The experience in the markets added to the make the composite 20 index has been more diverse. Several of the cities chosen had experiences similar to those in the composite 10 -- and, given the regions represented by the "hot 10," their locations are probably not surprising:

Another set, which includes the Cleveland metropolitan area, did not experience the really rapid (better than 5 percent per year) acceleration in property values seen elsewhere -- though that has not made these areas immune from the recent slow-down in the pace of price appreciation:

Then there is the "none of the above" category: Among the markets recently added to the Case-Shiller calculations, the behavior of house prices in the Minneapolis and Charlotte metro areas have been somewhat unique, with the pace of price appreciation over the past five years falling steadily in the former and rising steadily in the latter.

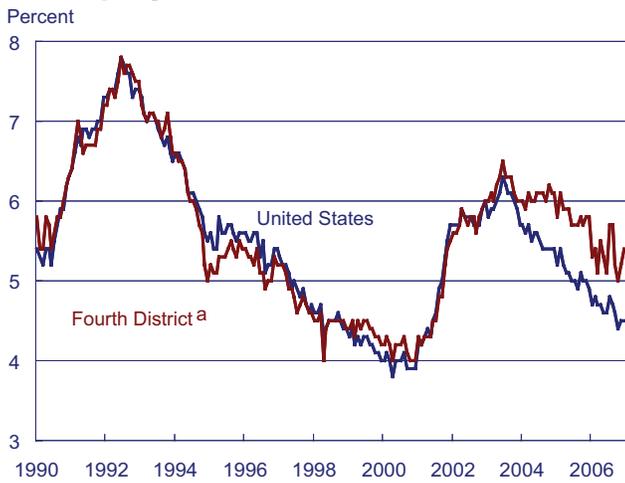
Case Shiller Home Price Indices



Source: Standard&Poor's S&P Case-Shiller Home Price Indices, Fiserv, MacroMarkets.

Fourth District Employment Conditions

Unemployment Rates*



a. Seasonally adjusted using the Census Bureau's X-11 procedure.
* Shaded bars represent recessions.

Sources: U.S. Department of Labor, Bureau of Labor Statistics; Kentucky Office of Employment and Training, Workforce Kentucky; Ohio Department of Job and Family Services, Bureau of Labor Market Information; Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis; and West Virginia Bureau of Employment Programs, Workforce West Virginia.

02.05.07

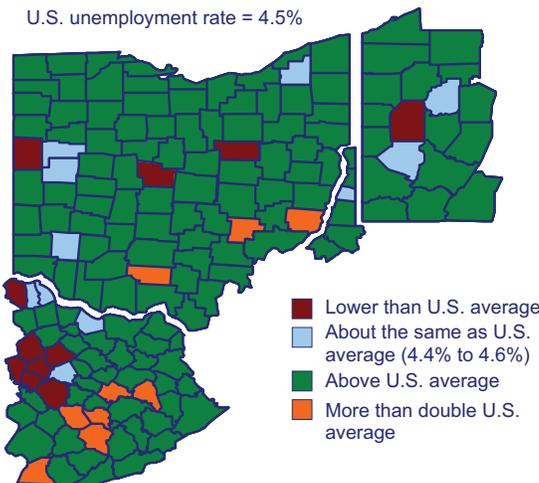
by Christian Miller and Paul Bauer

The Fourth District unemployment rate was up in December, rising to 5.4 percent from 5.2 percent in November. Though the number of employed persons was up slightly over the month (0.15 percent), larger increases in the labor force (0.3 percent) and the number of unemployed persons (4.2 percent) led to the higher unemployment rate. Nonetheless, over the last year the District's employment outlook has improved. Since December 2005, the unemployment rate has fallen from 5.7 percent, the number of unemployed persons is 3.9 percent lower, and employment is up 1.3 percent. Nationally, the unemployment rate was 4.5 percent in December 2006, and the January 2007 rate inched up to 4.6 percent.

In December, 146 counties in the Fourth District reported unemployment rates above the national rate of 4.5 percent, with the remaining 23 counties around or below that level. The median unemployment rate for the 169 counties in the District was 5.75 percent (that is, half of the counties had rates above 5.75 percent and half had rates below). While rates remained high in comparison with the U.S. average, unemployment rates fell in 71 counties from November to December. About three-fourths of counties had lower unemployment rates in December 2005 compared to a year earlier. Delaware County, Ohio, registered the District's lowest unemployment rate at 3.5 percent; the District's highest rate was 12.6 percent in Jackson County, Kentucky.

Though payroll employment fell in Cleveland and Dayton over the past 12 months, it increased in Columbus, Cincinnati, Toledo, Pittsburgh, and Lexington. Goods-producing industries weighed down employment gains in the service-providing sector in the major metro areas of the Fourth District. This pattern was mirrored in the national data, where manufacturing continued to trend downward, but several service-providing sectors made strong gains. Employment growth was

Unemployment Rates, December 2006*



* Data are seasonally adjusted using the Census Bureau's X-11 procedure.

Sources: U.S. Department of Labor, Bureau of Labor Statistics; Kentucky Office of Employment and Training, Workforce Kentucky; Ohio Department of Job and Family Services, Bureau of Labor Market Information; Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis; and West Virginia Bureau of Employment Programs, Workforce West Virginia.

strongest in Cincinnati, growing by 1.2 percent year-over-year. The largest percentage gain in employment for Cincinnati came from the professional and business services sector, which grew at 4 percent and also generated the largest gain in the number of employed persons (in Cincinnati and the District), with 6,200 jobs added.

Payroll Employment by Metropolitan Statistical Area

	12-month percent change, December 2006							
	Cleveland	Columbus	Cincinnati	Dayton	Toledo	Pittsburgh	Lexington	U.S.
Total nonfarm	-0.2	0.7	1.2	-0.5	0.6	0.5	1.1	1.4
Goods-producing	-1.5	0.0	-0.8	-1.6	0.0	-2.3	0.4	0.2
Manufacturing	-1.5	-0.9	-1.8	-2.1	0.2	-3.6	-1.1	-0.6
Natural resources, mining, and construction	-1.7	1.7	1.5	0.0	-0.7	0.2	4.7	1.5
Service-providing	0.1	0.8	1.6	-0.2	0.7	0.9	1.3	1.6
Trade, transportation, and utilities	0.1	-0.1	1.2	-2.6	0.6	-0.3	1.2	0.6
Information	-1.0	-0.5	-2.6	-0.9	0.0	-2.7	-2.2	0.2
Financial activities	-0.4	-0.5	0.2	-1.1	3.7	0.9	-2.8	1.9
Professional and business services	0.7	1.0	4.0	0.9	-2.0	1.0	1.9	2.3
Education and health services	1.3	3.4	2.6	0.2	1.6	2.1	0.3	2.7
Leisure and hospitality	0.6	1.3	1.7	0.8	2.8	2.6	3.2	2.9
Other services	0.0	1.0	1.2	2.4	0.0	-1.0	0.0	0.6
Government	-1.8	0.4	-0.6	0.3	0.0	1.4	2.3	1.3
December unemployment rate (percent)	5.5	4.8	5.1	6.0	6.2	4.5	4.0	4.5

SOURCES: U.S. Department of Labor, Bureau of Labor Statistics; Kentucky Office of Employment and Training, Workforce Kentucky; Ohio Department of Job and Family Services, Bureau of Labor Market Information; Pennsylvania Department of Labor and Industry, Center for Workforce Information and Analysis; and West Virginia Bureau of Employment Programs, Workforce West Virginia

Ohio's Automobile Industry

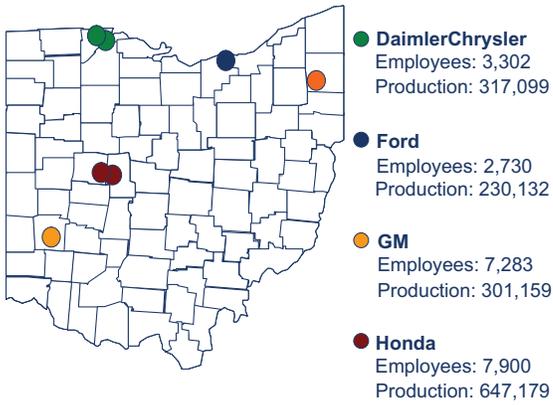
Motor Vehicle Parts Manufacturing Employment*

Index, Jan 1990 = 100



*Note: Seasonally adjusted by the Federal Reserve Bank of Cleveland.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Ohio Automotive Assembly Plants



Source: Ward's Auto; and manufacturers' Web sites.

02.01.07

By Yoonsoo Lee and Brian Rudick

Ford Motor Company's \$12.6 billion loss in 2006, coming on the heels of General Motor's \$10.6 billion loss in 2005, leaves little doubt that the domestic automobile industry is indeed going through hard times. Part of the problem is their vehicle mix, but foreign manufacturers' advantages in labor costs and currency values are also factors.

With seven final assembly plants and nearly 400 tier 1 suppliers, Ohio is at the heart of the industry, ranking second only to Michigan in terms of employment in the motor vehicle industry. Ohio employs more than 150,000 in transportation equipment manufacturing (NAICS 336); the industry's share of total employment is more than double that of the U.S.

What do domestic auto producers' struggles mean for Ohio? To examine this, we'll look at parts and final assembly manufacturers.

Parts Manufacturers

About two-thirds of all employment in transportation equipment manufacturing is in parts. Ohio's 400 tier-1 suppliers specialize in metal stamping (22 percent of U.S. employment in the industry), air conditioning (20 percent of U.S. employment), and brakes systems (18 percent of U.S. employment).

During the 1990s, parts suppliers experienced unprecedented growth, as original equipment manufacturers (such as GM, Ford, Toyota, etc.) looked to streamline activities and buy parts from stand-alone suppliers rather than build them in-house. Recently, however, lower production from the Big Three, increased commodity prices, and heightened foreign competition have put pressure on parts suppliers. Locally, suppliers such as Delphi (12,441 jobs in Ohio) and Dana (1,801 jobs in the state) have felt the impact and are currently in Chapter 11 bankruptcy. Delphi plans to close six out of eight Ohio plants.

Employment in Transportation Equipment Manufacturing, 2005*

Title	NAICS	Ohio		U.S.		Location quotient (OH/U.S.)
		Level	% of 336	Level	% of 336	
Transportation equipment manufacturing	336	150,895	100.0	1,769,833	100.0	2.1
Motor vehicle manufacturing	3361	29,702	19.7	249,055	14.1	2.9
Motor vehicle body and trailer manufacturing	3362	8,373	5.5	169,845	9.6	1.2
Motor vehicle parts manufacturing	3363	94,671	62.7	679,143	38.4	3.4
Aerospace product and parts manufacturing	3364	14,889	9.9	453,136	25.6	0.8
Railroad rolling stock manufacturing	3365	389	0.3	27,254	1.5	0.3
Ship and boat building	3366	816	0.5	151,907	8.6	0.1
Other transportation equipment manufacturing	3369	2,054	1.4	39,495	2.2	1.3

*Note: The location quotient is the simple ratio of an industry's share of employment between two locations.
Source: U.S. Department of Labor, Bureau of Labor Statistics.

Ohio Automotive Assembly Plants

Plant	Currently producing	Recently produced	Employees
Avon Lake	Ford Econoline	Ford Escape, Mercury Mariner, Mercury Villager, Nissan Quest	2,730
East Liberty	Honda Civic Sedan/GX, Honda Element, Honda CR-V	Honda Accord	2,500
Lorain*	None	Ford Econoline	0
Lordstown	Chevrolet Cobalt, Pontiac Pursuit, Pontiac G4	Chevrolet Cavalier, Pontiac Sunfire	4,233
Marysville	Honda Accord, Acura RDX, Acura TL	Acura CL	5,300
Moraine	Buick Rainier, Chevrolet TrailBlazer, GMC Envoy, Isuzu Ascender, Saab 9-7X	Oldsmobile Bravada	3,050
Toledo (Parkway)**	None	Jeep Wrangler/Unlimited, Jeep Cherokee	0
Toledo North	Dodge Nitro, Jeep Liberty		2,969
Toledo South***	(Supplier Park) Jeep Wrangler/Unlimited		333

*Plant closed in December 2005 and production moved to Avon Lake.

**Plant closed in June 2006 and production moved to Toledo South.

***Plant opened and production started in August 2006.

Sources: Ward's Auto, manufacturers' Web sites.

Nevertheless, the future of parts suppliers in Ohio may be less bleak than it seems. Many parts suppliers are tied to the fate of nearby assembly plants, and Ohio's assembly plants look to be well positioned (more on that later). In addition, Ohio's proximity to plants near its borders, such as Toyota's Georgetown, Ky, plant, enables parts suppliers to open up in Ohio and deliver their products just outside its borders. Indeed, Ohio's proximity to the I-65/I-75 automotive corridor makes it a prime location for auto parts suppliers, as documented in a Chicago Fed Study.

Final Assembly Plants

Ohio is home to seven final assembly plants. Like parts manufacturing, employment in motor vehicle manufacturing has fallen significantly over the past several years—28 percent in Ohio since 2000. However, some of this decline has resulted from productivity increases. In fact, total motor vehicle production in Ohio has declined only modestly over this time.

The state has certainly felt the effects of domestic manufacturers' restructurings. In 2005, Ford consolidated its Lorain and Avon Lake plants; it also plans to close its Maumee stamping plant and its Batavia transmission plant. In addition, some shifts at area assemblers, such as Moraine's third shift, have recently been eliminated.

Ohio Motor Vehicle Production

Plant	2001	2002	2003	2004	2005	2006
Avon Lake	46,240	26,891	19,581	42,949	27,061	179,293
East Liberty	236,029	222,742	231,844	190,731	205,300	237,926
Lorain	149,210	189,530	178,308	201,319	203,071	--
Lordstown	323,841	348,400	334,817	230,042	301,159	278,101
Marysville	456,348	421,975	445,544	432,972	441,879	446,946
Moraine	258,072	325,436	352,585	320,850	299,020	229,126
Toledo (Parkway)	122,862	76,608	84,486	97,701	96,381	45,737
Toledo North	146,485	225,714	237,712	224,067	220,718	209,594
Toledo South (Supplier Park)	--	--	--	--	--	40,050
Ohio total	1,739,087	1,837,296	1,884,877	1,740,631	1,794,589	1,666,773

Source: Ward's Auto.

Nonetheless, Ohio's final assembly plants seem well positioned because of recent investments and their portfolio of models produced. In December 2006, Ford announced that it will invest \$60 million in its Avon Lake plant so it can continue producing Econolines. In addition, GM invested more than \$500 million several years ago in its Lordstown plant to get ready for the Cobalt, which will be produced through 2009. And although it closed its Toledo Parkway plant, DaimlerChrysler opened the new Toledo Supplier Park nearby. Moreover, Ohio plants produce some of the most popular cars in America, including the Accord, Cobalt, Econoline, Liberty, and Trailblazer.

We should note that model changeovers can have a significant effect on production at the plant level. However, the state's overall motor vehicle production has been surprisingly steady over the last six years, during which Honda was Ohio's biggest producer, followed by GM, DaimlerChrysler, and Ford.

For greater detail on Ohio's motor vehicle industry, see the Ohio Department of Development's full report.

Banks and Financial Institutions

Banking Structure

01.24.07

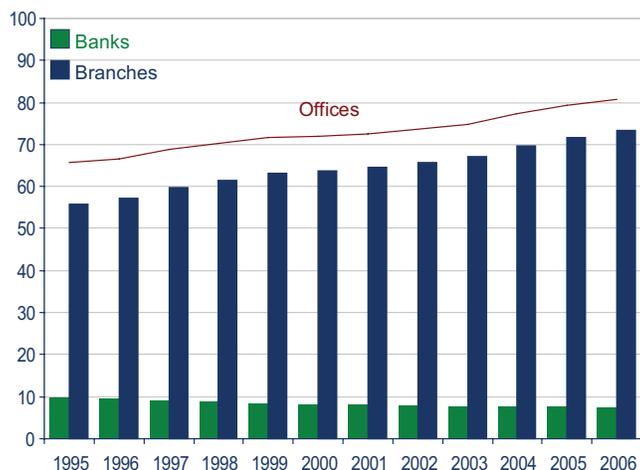
By James Thomson and Cara Stepanczuk

Passage of the 1994 Reigle–Neal Act, which regulates interstate banking, has spurred the consolidation of depository institutions. The number of FDIC-insured commercial banks fell from 9,972 at the end of 1995 to 7,451 at the end of the third quarter of 2006, a decline of more than 25 percent. The total number of banking offices, however, increased nearly 23 percent over that period, from 65,711 to 80,809.

From 1995 through the end of September 2006 the number of FDIC-insured savings associations fell by more than 36 percent, from 2,030 in 1995 to 1,293. The number of savings associations' offices also declined, but less sharply than the number of institutions (less than 15 percent, from 15,461 in 1995 to 13,220 at the end of the 3rd quarter of

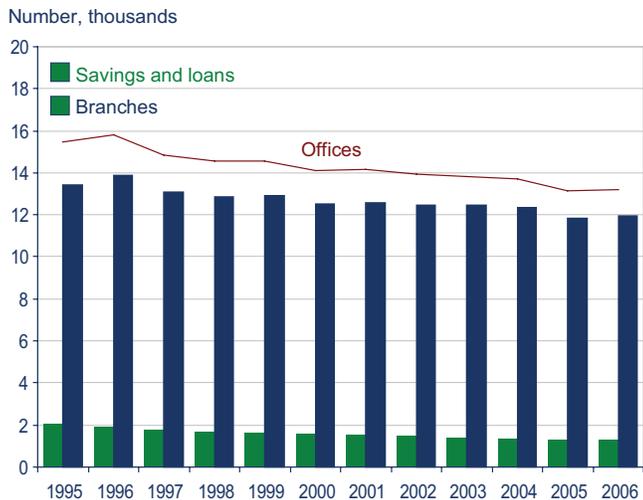
Commercial Bank Offices

Number, thousands



Source: Federal Deposit Insurance Corporation, *Quarterly Banking Profile*, Third Quarter 2006.

Savings Association Offices

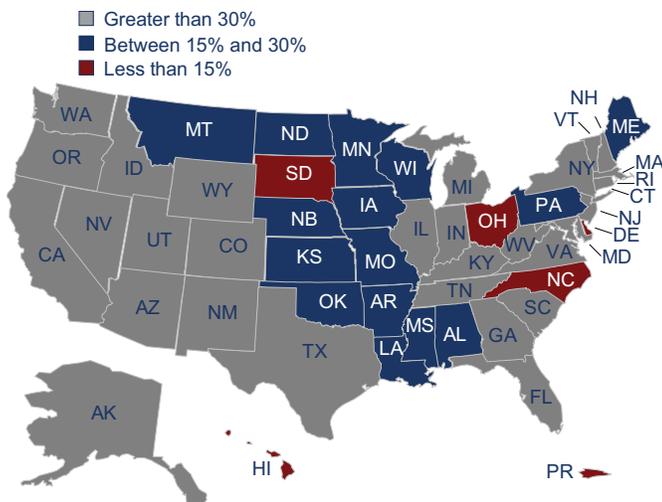


Source: Federal Deposit Insurance Corporation, *Quarterly Banking Profile*, Third Quarter 2006.

2006). Over the same period, the total number of FDIC-insured depository institutions' offices increased almost 16 percent from 81,172 at the end to 1995 to 94,029 through the 3rd quarter of 2006. This count does not include other channels for delivering banking services, such as automated teller machines, telephone banking, and online banking. Hence, the reduction in the number of insured depository institutions has not decreased the availability of bank services for most consumers.

The effects of the banking industry's interstate consolidation are evident: All but five states now report that more than 15 percent of depository institutions' branches are part of an out-of-state bank or savings association. And in over half the states, 30 percent or more of all branches are offices of out-of-state depository institutions.

Interstate Branches as a Percent of Total Offices*

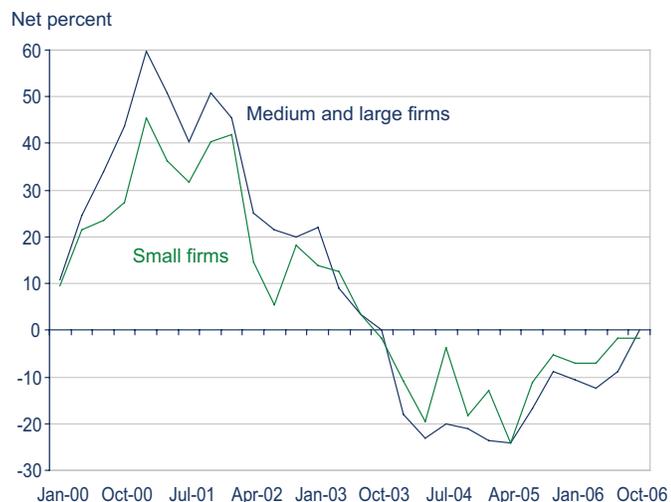


*Figures reflect percent of branches owned by out-of-state commercial banks and savings institutions.

Source: Federal Deposit Insurance Corporation, *Quarterly Banking Profile*, Third Quarter 2006.

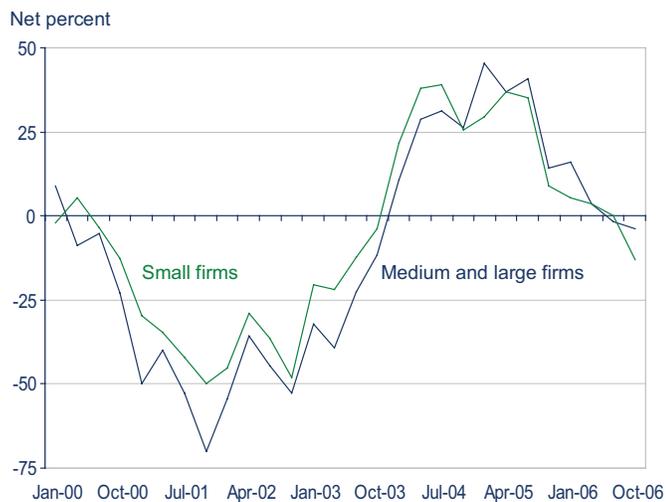
Business Loan Markets

Respondent Banks Reporting Tighter Credit Standards



Sources: Senior Loan Officer Opinion Survey on Bank Lending Practices, Board of Governors of the Federal Reserve System, October 2006.

Respondent Banks Reporting Stronger Demand



Sources: Senior Loan Officer Opinion Survey on Bank Lending Practices, Board of Governors of the Federal Reserve System, October 2006.

01.17.07

By James Thomson and Cara Stepanczuk

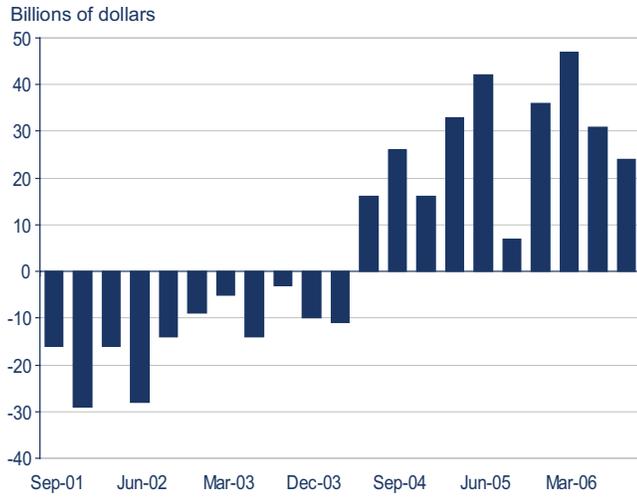
For most of the past year the survey of senior loan officers showed that credit availability for businesses continued to improve. For the October 2006 survey (covering the months of August, September and October), banks reported that their lending standards were unchanged for commercial and industrial loans for borrowers of all sizes. Survey respondents indicate that they've have been narrowing their lending spreads and reducing the cost of credit lines. They attribute their decisions to increased competition (from other banks and as well as other sources of business credit), greater liquidity of business loans resulting from a deeper secondary market, and a reduction in loan defaults.

The maintenance of lending standards reported in the October survey coupled with some narrowing of credit spreads has come in the face of somewhat weaker loan demand, which resulted largely from businesses' decreased need for external financing of inventories and accounts receivable.

The continued relaxation of bank lending standards and marginally weaker loan demand reported in the most recent survey has yet to be reflected on bank balance sheets. The \$24 billion rise in bank and thrift holdings of business loans in 2006:III marked it as the tenth consecutive quarter of increased bank and thrift holdings of commercial and industrial loans. This recent string of increases represents a strong reversal in the trend of quarterly declines in commercial and industrial loan balances on the books of FDIC-insured institutions before 2005:II.

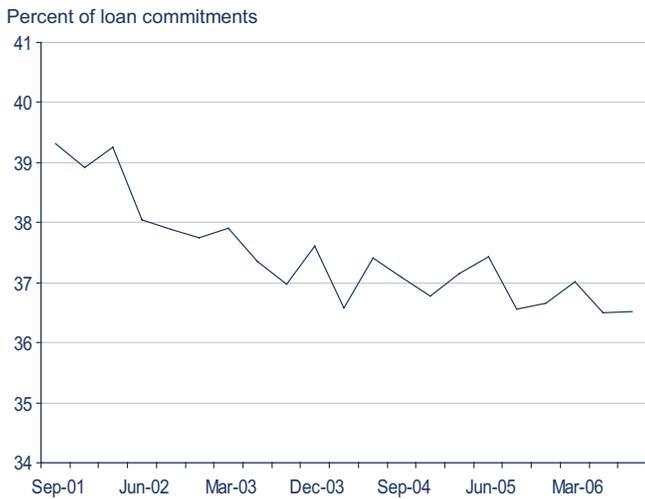
It is interesting that the rise increase in booked credits coincides with a steady rate of utilization rate for business loan commitments (credit lines extended by banks to commercial and industrial borrowers). This is another piece of evidence suggesting that business credit is readily available.

Quarterly Change in Commercial and Industrial Loans



Sources: Federal Deposit Insurance Corporation, *Quarterly Banking Profile*, Third Quarter, 2006.

Utilization Rate of Commercial and Industrial Loan Commitments



Sources: Federal Deposit Insurance Corporation, *Quarterly Banking Profile*, Third Quarter, 2006.