Jobs Report: Looking Forward

A close look at past trends suggests where the work might be once recovery starts.

by Polina Vlasenko, Research Fellow

There is some truth to the often-repeated claim that the current recession is the worst in a generation. Many adults in the labor force today may not remember another significant downturn.

The prior recession, in 2001, was so mild that the real gross domestic product, a measure of the quantity of goods and services produced within the United States, did not decrease on a year-over-year basis. At that time, many people became confident that business cycles were a thing of the past.

The previous full-fledged recession was in 1990-91. From start to end, GDP fell by 1.4 percent, and the unemployment rate rose from 5.5 to 6.8 percent. Compared to earlier recessions, the downturn of 1990-91 was still relatively mild.

Between that downturn’s end in April 1991 and the onset of the current recession in December 2007, the economy enjoyed 200 months of virtually uninterrupted growth. By 2007, a large proportion of adults in the labor force had little or no experience with recessions; almost half of them would have been 23 or younger in 1991. Among the rest, time and prosperity dimmed memories of the impact a recession can have on both the larger economy and on individual lives.

People whose experience included only the extremely mild recession of 2001 were unlikely to grasp the depth to which the economy can sink for an extended length of time. Against this background, the current recession can seem particularly severe.

For most people, the greatest dread of recessions derives from the fear of losing their jobs. And a recovery is often measured by how fast jobs are created. But, when it comes to employment, the experience of different sectors during business cycles varies greatly.

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The table on page 2 shows the annual rates of change in employment in the major sectors of the economy during expansions and contractions since 1949. The table shows the average annual rate of change for the past 10 complete business cycles and the change during the current recession, which is not yet complete. For comparison, it also includes the annual employment changes in each of the three most recent contractions and expansions.

The table’s last column presents the cyclical change net of trend, which captures the sensitivity of each sector to business-cycle fluctuations. A positive number signifies that employment is procyclical: It falls in recessions and rises in expansions.
The larger the number, the more cyclically sensitive employment is in a sector. Negative numbers indicate that employment in a sector is countercyclical: It grows faster during recessions and falls (or grows more slowly) during expansions.

The current recession is unusual in several respects, but those are not necessarily the aspects people typically consider. Nearly all sectors of the economy have experienced a fall in employment. But some of the larger drops are well within the historical limits, while many of the milder ones are not. For example, an 11 percent fall in employment in durable goods manufacturing in the current recession is almost identical to the average decline this sector suffered in past recessions.

On the other hand, the seemingly mild 3.9 percent reduction in employment in the financial activities sector (which includes finance, insurance, and real estate and leasing) is highly unusual. Employment in this sector has tended to increase during past recessions, on average by 1.8 percent. Given that the current recession was marked by the housing and financial crises, this significant deviation from historical patterns is not surprising.

Past employment patterns suggest some implications for the upcoming recovery. Employment in more cyclically sensitive sectors, such as construction and manufacturing, tends to fall more dramatically during recessions. At the same time, employment in these sectors does not necessarily grow faster during expansions because long-term trends in employment growth also matter and vary significantly across industries.

Many of the more cyclically

### Change in Employment During Business-Cycle Expansions and Contractions (annual percentage rates)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Recent Business-Cycle Contractions</th>
<th>Recent Business-Cycle Expansions</th>
<th>Expansion Average for 10 Cycles Since 1949</th>
<th>Cycllical Change of Net of Trend</th>
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<tbody>
<tr>
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<tr>
<td><strong>Total nonfarm employment</strong></td>
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<tr>
<td>Private nonfarm employment</td>
<td>-2.5</td>
<td>-1.9</td>
<td>-2.5</td>
<td>3.3</td>
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<tr>
<td><strong>Goods sector</strong></td>
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<tr>
<td>Mining and logging</td>
<td>-9.0</td>
<td>-2.1</td>
<td>-5.2</td>
<td>-3.7</td>
</tr>
<tr>
<td>Construction</td>
<td>-6.1</td>
<td>-1.0</td>
<td>-5.2</td>
<td>4.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-8.1</td>
<td>-4.7</td>
<td>-8.5</td>
<td>0.7</td>
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<tr>
<td>Durable goods</td>
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<td>-6.3</td>
<td>-11.2</td>
<td>0.9</td>
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<tr>
<td>Nondurable goods</td>
<td>-4.2</td>
<td>-2.3</td>
<td>-4.4</td>
<td>0.6</td>
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<tr>
<td><strong>Services sector</strong></td>
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<tr>
<td>Private service-providing</td>
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<tr>
<td>industries</td>
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<tr>
<td>Trade, transportation,</td>
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<tr>
<td>and utilities</td>
<td>-1.3</td>
<td>-2.1</td>
<td>-1.9</td>
<td>3.1</td>
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<tr>
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<td>-2.1</td>
<td>-1.1</td>
<td>2.2</td>
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<tr>
<td>Retail trade</td>
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<td>-2.6</td>
<td>-1.1</td>
<td>3.5</td>
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<tr>
<td>Transportation and warehousing</td>
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<td>-0.3</td>
<td>-3.8</td>
<td>3.3</td>
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<tr>
<td>Utilities</td>
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<td>-0.1</td>
<td>1.2</td>
<td>0.8</td>
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<tr>
<td>Information</td>
<td>-3.5</td>
<td>-0.3</td>
<td>-6.8</td>
<td>2.4</td>
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<tr>
<td>Financial activities</td>
<td>0.7</td>
<td>-0.7</td>
<td>1.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Professional and business</td>
<td>0.4</td>
<td>-2.6</td>
<td>-5.3</td>
<td>5.1</td>
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<tr>
<td>services</td>
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<tr>
<td>Education and health services</td>
<td>1.9</td>
<td>5.0</td>
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<td>6.0</td>
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<tr>
<td>Leisure and hospitality</td>
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<td>-0.3</td>
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<tr>
<td>Government</td>
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<td>-0.3</td>
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<tr>
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<td>-0.7</td>
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<tr>
<td>State</td>
<td>0.1</td>
<td>1.1</td>
<td>3.7</td>
<td>2.4</td>
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<tr>
<td>Local</td>
<td>-1.3</td>
<td>1.3</td>
<td>2.4</td>
<td>2.1</td>
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Note: The last column shows how much faster an industry adds jobs in an expansion than in a contraction. Thus, durable goods lost 11.2 percent on average in contractions (column 4) but gained 3.2 percent in expansions (column 9), for a net cyclical change of 14.4 percent. By contrast, local government added jobs almost as fast in contractions (2.4) as in expansions (2.3), for a difference of only 0.1 percent.
Although our leading indicators show legitimate cause for optimism, improvements have not resulted in more jobs or higher income.

by Shafayat Chowdhury, Research Associate

Federal Reserve Chairman Ben Bernanke recently announced that the recession is over and the American economy is on a path of slow recovery. The Conference Board has said that growth and economic recovery will begin this autumn. And the Obama administration claims that the government’s stimulus measures are bearing fruit. AIER’s leading indicators give reasons for cautious optimism, but neither the cyclical score of the leaders nor the coincident indicators signal a recovery.

Nine of AIER’s 12 primary leading indicators increased in the latest batch of data, causing us to reappraise the cyclical status of seven. As a result, 67 percent of the leaders, six out of nine with a discernible trend, are now appraised as expanding, up from 40 last month. For all our measures, a value above 50 indicates that an expansion is more likely than a contraction.

However, the cyclical score of the leaders only increased this month to 46, up from 43. Each of the leading indicators must be assigned a status as either expanding, contracting, or indeterminate. The corresponding cyclical score can capture shades of gray. It is based on a separate, purely mathematical analysis of the duration and magnitudes of changes, and is independent of judg-

Statistical Indicators of Business-Cycle Changes

<table>
<thead>
<tr>
<th>Change in Base Data</th>
<th>Cyclical Status</th>
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<tbody>
<tr>
<td>May</td>
<td>Jun</td>
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</tbody>
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Primary Leading Indicators

- M1 money supply
- Yield curve index
- Manufacturers’ supply prices
- New orders, consumer goods
- New orders, core capital goods
- New housing permits
- Ratio of sales to inventories
- Vendor performance
- Index of common stock prices
- Change in consumer debt

Percentage expanding cyclically 30 40 67

Primary Roughly Coincident Indicators

- Nonag. employment
- Index of industrial production
- Pers. income less transfer payments
- Manufacturing and trade sales
- Civilian emplmt. to population ratio
- Gross domestic product

Percentage expanding cyclically 0 0 0

Primary Lagging Indicators

- Avg. duration of unemployment*
- Manufacturing & trade inventories
- Commercial & industrial loans
- Ratio of cons. debt to income
- Chg. in labor cost/output, mfg.
- Short-term interest rates

Percentage expanding cyclically 17 17 17

nc No change. * Revised. Under “Change in Base Data,” plus and minus signs indicate increases and decreases from the previous month or quarter and blank spaces indicate data not yet available. Under “Cyclical Status,” plus and minus signs indicate expansions or contractions of each series as currently appraised; question marks indicate doubtful status when shown with another sign and indeterminate status when standing alone.

The percentage of leaders expanding is based on the analysis of 12 statistical series that move reliably in advance of general business activity. The cyclical score is based on a separate, purely mathematical analysis. For each measure, a score below 50 indicates a contraction is likely.

Cyclical Score of AIER Leaders

Percentage of AIER Leaders Expanding

The Recession Drags On

Although our leading indicators show legitimate cause for optimism, improvements have not resulted in more jobs or higher income.

by Shafayat Chowdhury, Research Associate

Federal Reserve Chairman Ben Bernanke recently announced that the recession is over and the American economy is on a path of slow recovery. The Conference Board has said that growth and economic recovery will begin this autumn. And the Obama administration claims that the government’s stimulus measures are bearing fruit. AIER’s leading indicators give reasons for cautious optimism, but neither the cyclical score of the leaders nor the coincident indicators signal a recovery.

Nine of AIER’s 12 primary leading indicators increased in the latest batch of data, causing us to reappraise the cyclical status of seven. As a result, 67 percent of the leaders, six out of nine with a discernible trend, are now appraised as expanding, up from 40 last month. For all our measures, a value above 50 indicates that an expansion is more likely than a contraction.

However, the cyclical score of the leaders only increased this month to 46, up from 43. Each of the leading indicators must be assigned a status as either expanding, contracting, or indeterminate. The corresponding cyclical score can capture shades of gray. It is based on a separate, purely mathematical analysis of the duration and magnitudes of changes, and is independent of judg-
ments by the AIER staff. Until the cyclical score also rises above 50, we are hesitant to say that a recovery is imminent.

AIER’s indicators reflect hard data that describe the actual state of the economy. (There is usually a lag in data collection of at least a month.) The analysis is not influenced by special interests, either commercial or political. Politicians and government bureaucrats want to believe—and have us believe—that their policies are currently yielding results. Industry research groups may have an unwitting bias born of the continuous need to obtain corporate financing. AIER conducts independent, scientific research and receives no government or corporate money.

In August, among our leading indicators, the index of common stock prices climbed 7.6 percent. This series,
which tracks the S&P 500 Index adjusted for price inflation, has increased for five straight months. These continued gains in stock prices prompted us to reappraise this series from probably to clearly expanding.

New housing permits, another leader, increased in August by 2.7 percent. We upgraded its cyclical status from probably contracting to indeterminate.

In addition, sales of new homes rose in August for the fifth straight month, while inventories declined. This paved the way for new housing construction, and, according to the Department of Commerce, housing starts rose by 1.5 percent. These signs only tentatively point toward a rebound in the housing market. Government tax credits for first-time home buyers have stimulated demand for housing. It is not clear if the upturn will be sustained after these credits expire in November. It is also possible that the government will extend the program.

The indicators also show encouraging trends in the industrial sector. The average workweek in manufacturing remained unchanged from last month; the decline that began with the recession’s onset in December 2007 appears to have halted. New orders for core capital goods fell slightly in July, but are up by more than 7 percent for the year. We upgraded both series from probably contracting to indeterminate.

Vendor performance measures the percentage of purchasing agents reporting slower deliveries, which imply a higher volume of business activity. In August, 57 percent of purchasing agents reported slower deliveries. This is the third consecutive monthly increase. We upgraded this series from indeterminate to probably expanding.

The ratio of manufacturing and trade sales to inventories also climbed, and we upgraded its status from clearly to probably contracting. Although manufacturing and trade sales fell, businesses cut inventories at a faster pace. The balance between sales and inventories was distorted by the significant fall in demand during the recession. It is now being restored.

This sets the stage for manufacturers to ramp up production. The index of industrial production, a coin-

![Primary Roughly Coincident Indicators](image-url)

Notes: 1) Shaded areas indicate recessions as dated by the National Bureau of Economic Research. 2) The number in parentheses next to the name of a series is an estimate of the minimum number of months over which cyclical movements of a series are greater than irregular fluctuations. That number is the span of each series’ moving average, or MCD (months for cyclical dominance), used to smooth out irregular fluctuations. The data plotted in the charts are those MCDs and not the base data.
cider, indicates that this is happening. The series, which measures the volume of production in manufacturing, mining, and utilities, rose 0.7 percent in August. We upgraded the appraisal from probably contracting to indeterminate. The rate of capacity utilization, a related measure that tracks current output as a percent of the maximum that industries can produce, also increased over this period.

The upturn in industrial activity is not limited to a select few industries. According to the Federal Reserve, in July, 38.6 percent of goods-producing sectors reported higher production when compared to six months earlier. In June, only 30.8 percent of these industries reported higher production.

However, other primary roughly coincident indicators do not show even preliminary signs of recovery. Personal income less transfer payments posted a slight increase for the first time this year. In the past, similar increases in the series occasionally marked the beginning of an upward trend. Consequently, we upgraded our appraisal from clearly to probably contracting.

Until there is a significant improvement in personal income, we cannot assert that the economy is in recovery. Consumer spending, which is a large part of the economy, can only rebound when incomes rise.

The employment scenario remains gloomy. Initial claims for unemployment insurance, a leading indicator, has declined for four months. We upgraded this series, which is inverted for analysis, from indeterminate to probably expanding. Although there are fewer initial claims, employment is still falling. According to the Bureau of Labor Statistics, in July, more than 90 percent of manufacturing industries reported reducing payrolls from six months ago.

Nearly 80 percent of non-agricultural industries also reported lower payrolls. Non-agricultural employment, a coincider, continues to decline and remains appraised as clearly contracting.

Our appraisals for the rest of the coincident indicators are unchanged. The percentage of coinciders expanding is zero. The cyclical score increased from 8 last month to 18. According to these scores, the recovery has not arrived.

The percentage of primary lagging indicators expanding also remained at 17, unchanged from last month. Only one out of six laggers is appraised as expanding. The cyclical score fell to 28 from 33.

Two of the laggers suggest that consumers are still facing a tightened credit market. The composite of short-term interest rates fell further. At its September 23 meeting, the Federal Open Market Committee kept the target for the federal funds rate unchanged at historic lows. Typically, low interest rates encourage consumers to take on debt and increase spending. However, this isn’t happening.

The ratio of consumer debt to personal income continued to fall. In the second quarter, households cut debt at an unprecedented rate of 1.7 percent. The reduction was led by declines in mortgage debt and credit card balances. Consumers are retrenching and won’t be ready to start spending again until the job picture improves and incomes rise.
sensitive sectors have seen adverse long-term trends over the past several decades. For example, since the 1980s, employment in mining and logging, and in manufacturing has been shrinking, and employment in construction has grown slowly.

High sensitivity to business-cycle fluctuations, combined with slow or negative long-term growth, paints a gloomy picture for employment in all goods-producing industries. Employment in them falls sharply in recessions and does not grow much during expansions. We can expect this pattern to hold in the upcoming recovery. The United States is transforming from manufacturing into a service economy, and this trend is unstoppable.

In the past 10 recoveries dating back to 1949, the six fastest-growing sectors were education and health services, professional and business services, leisure and hospitality, construction, durable goods manufacturing, and financial activity. The same pattern may not be repeated this time around. The severe nature of the current recession is likely to trigger a serious reallocation among the sectors of the economy.

It is unlikely that employment in construction would grow significantly until the housing and commercial real estate markets recover to normal levels, which is unlikely to be soon. Similarly, the financial activities sector may remain depressed for some time.

While it is impossible to predict the future, historical data suggest that some developments are fairly certain. Employment in education and health services has grown steadily over the past several decades. This trend is likely to continue, if only for demographic reasons. An increase in the elderly population and the tendency towards more people acquiring post-secondary education ensure strong demand for these services.

Another fairly certain trend is the virtually uninterrupted growth in government employment. (This trend is explored in more detail in the article on page 4.)

The data that suggest a likely pattern of recovery also have implications for career choices. In expansions, employment in service-providing industries tends to grow faster than that in goods-producing industries, possibly making these industries a better career choice. But specific service industries may be affected differently by future recessions.

Not many people predicted the recent dramatic fall in employment in the financial activities sector, for example. Such random and essentially unpredictable events will continue to happen. Consequently, it is important for people to continue to acquire marketable skills throughout a career and to keep them up to date. This fosters the flexibility to transition between industries, should the need arise.

Individuals who seek stability, with no dramatic fluctuations in employment during the business cycle, might prefer jobs in sectors with low cyclical sensitivity. The five least cyclically sensitive sectors are state government, local government, utilities, the federal government (including the U.S. Postal Service), and education and health services.

Tellingly, three out of five of the least cyclically sensitive industries represent government. This should not be taken as a strong endorsement of working for the government. Projecting future development based on past data is always tricky, and it is especially so for projections of government employment.

If the present policy bias towards bigger government endures, government employment is likely to grow, regardless of the state of the business cycle. But this stability is illusory because policy can change abruptly. Government employment is drastically affected by political shifts, instead of being determined by underlying economic developments, which tend to be gradual.
No Downturn for Government Work

When it comes to employment, the private sector and government live in two different worlds.

While private industry is subject to the vicissitudes of the business cycle, government employment grows virtually uninterrupted. In the past 10 complete business cycles, private nonfarm employment decreased at the average annual rate of 3.3 percent during contractions and increased at the average annual rate of 3 percent in expansions.

But government employment grew during contractions and during expansions. During contractions, it increased at the average annual rate of 1.8 percent; during expansions at 2.4 percent.

The chart above shows the consequence of these two different patterns of growth: The share of government employment increases during the business cycle downturns.

This does not mean that governments hire many additional employees during recessions. Rather, in recessions private employment falls substantially, but public employment does not. Since the recession’s start in December 2007, the private sector shed 6.9 million workers, while the public sector added 0.2 million.

Among the different branches of government—federal, state, and local—local governments employ the most people, currently around 14.6 million. The federal government employs only around 2.8 million people, and state governments employ 5.2 million.

State government is growing faster than the other two branches. Since 1955, the earliest year when the data on different branches of government is available, state government employment grew, on average, 6.4 percent per year. Over the same period, employment in local government grew by 5.8 percent a year, and federal government employment grew by only 0.5 percent per year.

Since the number of government employees does not vary much in response to business cycle forces, long-term trends are more relevant for the analysis than are business-cycle fluctuations. Two distinct periods with different long-term trends emerge. The share of government employees in total employment increased steadily from the end of World War II until the mid-1970s (see chart). It reached its peak in 1975, when nearly one in five U.S. employees worked for the government.

During the Reagan and Clinton years, from the late 1970s to the end of the 1990s, the share of government employment shrunk to 15.7 percent, which is still considerably higher than the 12.5 percent seen in the late 1940s. Since the turn of the century, this decline has stopped.

Even before the current recession, the share of government employment increased from its low of 15.7 percent in 2000 to 16.2 percent in 2007. It increased a lot further once the recession started and now stands at 17.1 percent, a level not seen since 1993. (The measure of government employment does not include military personnel, so the Iraq and Afghanistan wars cannot be blamed for this increase.)

The share of government employment always rises during recessions, so the current increase may be temporary. However, given the current policy bias towards bigger government, this may be a start of a new upward trend.

No Downturn for Government Work

Unaffected by business-cycle forces but sensitive to politics, public sector employment seems poised for further growth.

by Polina Vlasenko, Research Fellow

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