Executive Summary: A NEW GLIMPSE AHEAD

Last month we made the analogy of having a map of the economic future and waiting for the road signs to appear. Our forecasts are the map and leading indicators are the road signs indicating whether our forecasts are steering you in the right direction. We use a range of leading indicators in our analysis including Housing Starts, the US Leading Indicator, the Purchasing Managers Index, and many more. Starting this month, we will be adding two additional indicators to our repertoire of “road signs”: the Chicago Fed National Activity Index (CFNAI) and the Consumer Expectations 12/12 rate-of-change. The first of these changes is highlighted below.

The CFNAI is a weighted average growth rate that encompasses numerous subsectors of the economy including production, income, employment, unemployment, personal consumption, housing, sales, orders, and inventories. The collaboration of data provides an accurate picture of the overall US economy. Since the monthly CFNAI is already in the form of a growth rate, we will not use our normal rate-of-change approach when looking at the data. The Index is volatile, so in order to smooth out some of the month-to-month volatility we will be using the three-month moving average (3MMA).

The CFNAI is unique in its compilation and representation. The monthly data represents growth above or below average, which is attributed to the zero line. A positive number indicates that economic growth is better than average and a negative reading signals growth is below average. A threshold has been established to determine at what point below average growth indicates the increased likelihood of an upcoming recession. This threshold is -0.7. Therefore, as you see circled on the graph on the next page, -0.7 corresponds to the zero growth line for US Industrial Production (USIP). When the CFNAI falls below the -0.7 threshold, it signifies a possible downturn in economic activity and that annual US Industrial Production may dip below the year-earlier level.

When examining any leading indicator, we are looking for a timing relationship to cyclical turning points in the overall economy. The CFNAI 3MMA has a nine month lead time to the USIP 12/12 rate-of-change (median experience), giving us a glimpse of what can be expected for the USIP and the overall US economy three quarters in advance. Keep in mind that we do not “put all of our eggs in one basket” as the old saying goes. We do not rely solely on a single leading indicator, but instead on a system of indicators, to ensure we are pointing you in the right direction. By adding an additional “road sign” to our collection of leading indicators, we will hopefully provide you with additional insight and confidence as to what the future holds.

The following chart displays the CFNAI 3MMA and the USIP 12/12. The CFNAI turned upward in June 2011, signaling the imminent transition of USIP back into Phase B that we are expecting. We will be watching for the CFNAI to fall below the -0.7 threshold in 2013 to indicate the recession we are anticipating in 2014.
A few additional modifications to the *ITR Trends Report* this month are the exclusion of the Money Supply page and the replacement of the Velocity of Money and New Orders Ratio of Inventories (RIO) in our leading indicators section. Although the money supply was once an accurate leading indicator, its usefulness has deteriorated over the past few years largely due to Fed intervention and manipulation through the use of monetary policy. For this reason, we are removing it from the *ITR Trends Report*.

The CFNAI 3MMA will be replacing the Velocity of Money 12/12, and we are replacing New Orders RIO with the University of Michigan’s Index of Consumer Expectations 12/12 rate-of-change. These indexes have a more easily understood relationship to US Industrial Production and will provide you and your company with a more accurate idea as to what the future holds.

We offer our readers a wide array of leading indicators so you can examine the effect that today’s economy will have on your company. Through our Trendcast™ service, we run your company’s 12/12 rate-of-change and see how it compares to the CFNAI and our other leading indicators. This can help you get the most out of your *ITR Trends Report* subscription. Use the timing to your advantage in preparing for the road ahead.
Summary

The Nonresidential Construction benchmark shifted into Phase B, Growth, and is the last of our “train cars” to make the transition. The improvement in this lagging sector supports our outlook for ongoing US economic expansion in 2012.

Further signs of imminent economic reacceleration are coming from the Housing, Financial, Retail, and Medical benchmarks. Each of these benchmarks is growing at an accelerating pace.

While Production as a whole is in Phase C, several subsectors have moved into Phase B. These sectors include: Light Vehicle Production, Iron and Steel Products Production, and Aircraft Production. These sectors will lift Production into Phase B in the near term.

Although the Consumer Price Index is rising, the Prices benchmark is in Phase C due to year-over-year declines in Natural Gas Futures, Oil Futures, and Steel Scrap Prices. Prices will move into Phase B as the global economic expansion reaccelerates later in the year.

Phase A
12/12 is rising and the data trend is either heading toward a low or is in the early stages of recovery. This is the first positive phase of the business cycle.

Phase B
12/12 is rising above 0, data trend is accelerating in its ascent, and growth is occurring above year-ago levels. This is the second positive phase of the business cycle.

Phase C
12/12 decline is in place, data trend is decelerating in its ascent or has stopped its rise, but it is still above last year. This is the first negative phase of the business cycle.

Phase D
12/12 is below 0, data trend is in recession at levels below the year-earlier level. This is the final phase and the second negative phase of the business cycle.

The ITR Trends 10 compares the current cyclical status of 10 major benchmarks of macroeconomic activity as they move through this business cycle and into the next. Think of the Trends 10 as a train with 10 cars. We are looking for the first several “cars” to go through a valley and start up the next hill for the 2012-2014 cycle. Please note that not all the cars will go down into a hard landing. Many are likely to pass through a low between Phase C and Phase B without going into Phases D and A. This is the essence of the soft landing we are projecting for this business cycle.
US Industrial Production is maintaining a rising trend, and the trajectory is consistent with our forecast. Results are running along the higher side of the forecast range; the table below shows that the March 2012 12MMA of 94.7 is within forecast parameters. Running along the high side of the forecast range may self-correct in the next few months given that the monthly Index has been essentially flat since January 2012. There is no change to our outlook through 2013.

The recent lack of rise in the monthly Index would be worrisome if it were not for the leading indicators pointing to renewed ascent after the current stall in the monthly Index rising trend. The annual average index (12MMA) is not expected to break trend.

<table>
<thead>
<tr>
<th>Forecast Period</th>
<th>Annual Moving Forecast</th>
<th>Average Result</th>
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</thead>
<tbody>
<tr>
<td>Mar 2011</td>
<td>91.0 - 91.6</td>
<td>91.3</td>
</tr>
<tr>
<td>Jun 2011</td>
<td>91.2 - 92.7</td>
<td>92.1</td>
</tr>
<tr>
<td>Sep 2011</td>
<td>91.6 - 93.3</td>
<td>92.9</td>
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<tr>
<td>Dec 2011</td>
<td>92.3 - 93.9</td>
<td>93.8</td>
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<tr>
<td>Mar 2012</td>
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<td>94.7</td>
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<tr>
<td>Jun 2012</td>
<td>94.3 - 96.0</td>
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</tr>
<tr>
<td>Sep 2012</td>
<td>95.3 - 96.7</td>
<td></td>
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<tr>
<td>Dec 2012</td>
<td>96.4 - 98.0</td>
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<tr>
<td>Dec 2013</td>
<td>99.2 - 101.0</td>
<td></td>
</tr>
<tr>
<td>Dec 2014</td>
<td>95.8 - 98.6</td>
<td></td>
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</tbody>
</table>
**HIGHLIGHTS**

- **US Exports of Machinery** at record level
- Automotive, Oil and Gas boosting Production

**SUMMARY**

Metalworking Machinery New Orders totaled $25.9 billion over the past 12 months, the highest level in nearly three years. The ascending New Orders trend will persist through 2013, although the rate of rise will begin to diminish late this year.

Annual **US Exports of General & Industrial Machinery** were a record $67.7 billion in February, 16.9% above the same time last year. Exports, which account for about 30% of the metalworking machinery market, will likely rise further as the global economy reaccelerates in 2012. Look to foreign markets to augment domestic demand.

Bolstered by increasing demand from the automotive and the oil and gas industries, **Metalworking Machinery Production** recorded the strongest February-to-March gain since 1994. The automotive and the oil and gas industries account for 25% and 15% of industry revenue, respectively. Both industries are expected to grow over the next two years, supporting the rising trend in Metalworking Machinery Production.

**FORECAST**

<table>
<thead>
<tr>
<th>Year</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate-of-Change</td>
<td>12.1%</td>
<td>7.5%</td>
</tr>
</tbody>
</table>

**MANAGEMENT NOTE**

Watch your debt-to-equity ratio. The prospect of growth through 2013 is tempting, but be wary of overleveraging.
US Total Industrial Production

Index, 2007 = 100 S.A.

HIGHLIGHTS
- Monthly Index unchanged in March
- Leading indicators point to renewed ascent ahead

SUMMARY

The Actual monthly data has been in a flat trend for each of the last two months, although results remain comfortably above year-earlier levels. The annual average Index (12MMA) continues to climb because the March monthly Index came in 3.8% above last year. We expect that the monthly Index will show some improved signs of ascent in the second half of 2012 and that the 12MMA will rise throughout this year and next.

The tentative February 2012 12/12 low for Consumer Expectations is expected to hold and be a prelude to a mid-to-late 2012 12/12 low for US Industrial Production. We expect this will eventually lead to additional growth in 2013.

Commensurate with the relative weakness we are seeing in Computers and Electronic Equipment New Orders, it is not surprising to see that High-Tech Industrial Production is underperforming the whole. High-Tech for the first quarter of 2012 came in 1.3% below the year-ago level. Industrial Production Excluding High-Tech fared much better with a 4.5% favorable year-over-year comparison.

FORECAST
2012: 4.3%  2013: 3.0%

MANAGEMENT NOTE

Do not be concerned about the flatness of the monthly Index for the last two months. Leading indicators are suggesting the trend will improve in the second half of this year.

Data Link
Have a question for an analyst? questions@itreconomics.com
Consumer Price Index – All Items
Index, 1982-84 = 100 N.S.A.

HIGHLIGHTS
- Overall inflation at 3.3%
- Average Hourly Earnings up 2.0% from last year
- No change to monetary policy

SUMMARY
The Consumer Price Index rose in March. Food, energy, apparel, and housing prices were all higher. Inflation, at 3.3%, is on track with our forecast set in place one year ago, but the falling 1/12 is indicating milder inflation ahead. Our outlook has been adjusted; prices are still set to increase through 2013, but the pace of rise will ease over the next three quarters.

Consumers are feeling the effects of rising prices as few workers are receiving pay raises that are keeping up with inflation. Average Hourly Earnings (Total Private Workforce) are only 2.0% above where they were last year.

The Federal Reserve Open Market Committee announced no changes to monetary policy at the April meeting. The federal funds rate target remains at 0.0% - 0.25% with a verbal commitment to remain there through 2014. There were no changes made to Operation Twist which is set to end in June. The current monetary stance has the potential to exacerbate the rising prices trend anticipated over the next two years. Keep in mind the FOMC has not taken another round of quantitative easing off the table either.

FORECAST
2012: 2.8% 2013: 3.8%

MANAGEMENT NOTE
Do no overwhelm your customers. Pass on gradual price increases over the next four to six quarters.
ITR – Four Phases of a Business Cycle

12/12 Rate-of-Change Rising

Phase A:
* Data trend is slowing in its rate of decline.
* Data trend usually reaches a low and begins to rise before the end of this phase.

Phase B:
* Data trend is experiencing the strongest part of the business cycle rise.

12/12 Rate-of-Change Declining

Phase C:
* Data trend becomes progressively milder in the business cycle rise.
* Data trend usually reaches a peak and begins to decline before the end of this phase.

Phase D:
* Data trend is experiencing the steepest part of the business cycle decline.

Phase Management Objectives™

Phase Late A - Recovery:
1. Positive leadership modeling (culture turns to behavior)
2. Establish goals: tactical goals which lead to strategic achievement
3. Develop a system for measurement and accountability re:#2
4. Align compensation plans with #2 and #3
5. Be keenly aware of the BE (Break Even) point and check it regularly
6. Judiciously expand credit
7. Check distributions systems for readiness to accommodate increased activity
8. Review and uncover competitive advantages
9. Invest in customer market research (know what they value)
10. Improve efficiencies with investment in technology and software
11. Start to phase out marginal opportunities
12. Add sales staff
13. Build inventories (consider lead time and turn rate)
14. Introduce new product lines
15. Determine capital equipment needs and place orders
16. Begin advertising and sales promotions
17. Hire "top" people
18. Implement plans for facilities expansion
19. Implement training programs

Phase Early B - Growth:
1. Accelerate training
2. Check the process flow for possible future bottlenecks
3. Continue to build inventory
4. Increase prices
5. Consider outside manufacturing sources if internal pressures becoming tight
6. Find the answer to “What next?”
7. Open distribution centers
8. Use improved cash flow to improve corporate governance
9. Use cash to create new competitive advantages
10. Watch your debt-to-equity ratio and ROI
11. Maintain and pursue quality; don’t let complacency set in

**Phase Late B  Early C - Prosperity:**

1. Stay in stock on A items, be careful with C items
2. Consider selling the business in a climate of maximum “goodwill”
3. Penetrate new selected accounts
4. Develop plan for lower activity in traditional, mature markets
5. Freeze all expansion plans (unless related to “what is next”)
6. Spin off undesirable operations
7. Consider taking on subcontract work if the backside of the cycle looks recessionary
8. Stay realistic – beware of linear budgets
9. Begin missionary efforts into new markets
10. Communicate competitive advantages to maintain margins

**Phase Late C - Warning:**

1. Begin work force reductions
2. Set budget reduction goals by department
3. Avoid long-term purchase commitments late in the price cycle
4. Concentrate on cash and balance sheet
5. Reduce advertising and inventories
6. De-emphasize commodity/services in anticipation of diminishing margins
7. Weed out inferior products (lose the losers)
8. Encourage distributors to decrease inventory
9. Identify and overcome any competitive disadvantages
10. Make sure you and the management team are not in denial
11. Cross train key people
12. Watch Accounts Receivable aging
13. Increase the requirements for justification of capital expenditures
14. Evaluate vendors for strength (don’t get caught honoring their warranties with no one to accept returned goods)
15. Manage the backlog through pricing and delivery, try to fill the funnel

**Phase Early D - Recession:**

1. Continue force reduction
2. Reduce advertising – be very selective
3. Continue to avoid long-term purchase commitments
4. Review all lease agreements
5. Increase the requirements for justification of capital equipment
6. Eliminate all overtime
7. Reduce overhead labor
8. Combine departments with like capabilities and reduce management
9. Select targets of opportunity where price will get the business
10. Tighten credit policies – increase scrutiny
11. Look for opportunistic purchases  
12. Grab market share as your competitor dies

**Phase Late D - Recession / Early A - Early Recovery**

1. Prepare training programs  
2. Negotiate union contracts if possible  
3. Develop advertising and marketing programs  
4. Enter or renegotiate long-term leases  
5. Look for additional vendors  
6. Capital expenditures & acquisitions considered in light of market-by-market potential  
7. Make acquisitions – use pessimism to your advantage  
8. People will be scared – lead with optimism and “can do” attitude

**Checking Points of Cyclical Progress:**

As the rate-of-change cycle moves from the beginning low point through the peak and down to the final low, it passes through several ITR Checking Points™. The progress of the rate-of-change through each point during the cycle helps to establish whether a cyclical trend is just beginning, is about to reverse, or is in the steepest part. A 1/12 may be substituted for a 3/12.

**Positive ITR Checking Points™**

1. 3/12 low  
   The rate-of-change is making the transition from the previous cycle’s decline to rise in the current business cycle. Checking points #1 and #2 reflect this activity.

2. 3/12 passes above the 12/12  
   The onset of business cycle rise is observed.

3. 12/12 reaches a low  
   The entry of the cycle into its steepest part of the rising trend is observed

4. 3/12 crosses above 0%  
5. 12/12 crosses above 0%

**Negative Checking Points**

6. 3/12 reaches a high  
   Checking points #6 and #7 indicate that the business cycle is making the transition from rise to decline.

7. 3/12 downward passes the 12/12  
   Business cycle decline begins with checking point #8.

8. 12/12 reaches a high  
   The entry of the cycle into its steepest part of the decline is with checking points #9 and #10.

9. 3/12 crosses below 0%  
10. 12/12 value crosses below 0%
Definitions of the Series Included in ITR Trends Report

All data is not seasonally adjusted (NSA) unless otherwise noted (SA)

**Corporate Bond Prices**: Corporate AAA Rated Bond Yields, inverted to reflect prices. Corporate Bond Prices act as a leading indicator to general economic change.

**Stock Prices**: Standard and Poor 500 Industrials, 1941-43 = 10.

**US Government Long-Term Bond Yields**: 10-year maturity, percent yield.

**Housing Starts**: Total number of housing units started, including farms, private and public, NSA.

**Office Buildings Construction Spending**: Private construction of all sizes of office buildings. Spending measured in billions of dollars, NSA.

**Commercial Buildings Construction Spending**: Private construction of commercial buildings, shopping centers, and warehouses. Spending measured in billions of dollars, NSA.

**Water & Sewer Facilities Construction**: Public construction spending measured in billions of dollars, NSA.

**Educational Buildings Construction Spending**: Public construction of buildings for educational purposes. Spending measured in billions of dollars, NSA.

**Power Facilities Construction Spending**: Total construction of power facilities including distribution systems. Spending measured in billions of dollars, NSA.

**Retail Sales**: Excluding automobiles and parts, trillions of 1982-84 (constant) dollars, NSA.

**US Light Vehicle Retail Sales**: Retail sales of new passenger cars and light duty trucks, includes transplants, in millions of units.

**Wholesale Trade Durable Goods**: Merchant wholesalers to retailers, contractors, or other types of businesses of goods with an estimated useful life of three years and greater, measured in trillions of dollars, NSA.

**Wholesale Trade Nondurable Goods**: Merchant wholesalers to retailers, contractors, or other types of businesses of goods with an estimated useful life of less than three years, measured in trillions of dollars, NSA.

**Employment**: Civilian labor force, measured in millions, NSA.

**Nondefense Capital Goods New Orders w/o Aircraft**: Capital Goods New Orders exclusive of defense orders and aircraft and parts, measured in billions of dollars, NSA.

**Metalworking Machinery New Orders**: NAICS Code 3335. Metal forming and metal cutting tools; patterns; dies, tools, jigs, fixtures; rolling mill machinery; welding apparatus, measured in billions of dollars, NSA.

**Industrial Machinery New Orders**: NAICS Code 3332. Machinery used for saw mills and woodworking, plastics and rubber, paper, textiles, printing, food, and semiconductor industries, measured in billions of dollars. NSA.

**Construction Machinery New Orders**: NAICS Code 33312. Construction machinery and equipment; elevators; conveyors; moving stairways; hoists; cranes; industrial trucks. Billions of dollars, NSA.

**Electrical Equipment New Orders**: NAICS Code 33531. Power, distribution, and specialty transformers; electric motors, generators; switchgear; relays, and controls, in billions of dollars, NSA.
Computers & Electronics New Orders: NAICS 334. Mainframes, personal computers, workstations, laptops, computer servers, and computer peripheral equipment and components. Measured in billions of dollars, NSA.

Defense Capital Goods New Orders: Goods New Orders contracted by the Department of Defense or by foreign governments through the DOD Foreign Military Assistance Program, billions of dollars, NSA.

US Total Industrial Production: Manufacturing, mining, and utility output, measured in physical units and/or inferred from data on input to the production. Index, 2007 = 100, SA.

NA Light Vehicle Production: Passenger car and light duty truck production (classes 1-4), including transplants. US, Canada and Mexico. Measured in millions of units.

Mining Production (w/o Oil & Gas): NAICS 212. Includes metal mining, coal mining, and nonmetallic minerals mining. Index, 2007 = 100, NSA.

Chemicals & Products Production: NAICS 325. Basic chemicals, resins. Synthetic rubber and fibers, pharmaceuticals and paint. Index, 2007 = 100, NSA.

Commercial Aircraft: NAICS 336412,3. Civilian Aircraft Equipment Production. Index, 2007=100, NSA.

Medical Equipment and Supplies Production: NAICS 3391. Manufacturing laboratory apparatus and furniture, surgical and medical instruments, appliances and supplies, dental equipment and supplies, eyeglasses and protective wear. Index, 2007 = 100, NSA.

Heavy Duty Truck Production: Class 8 trucks, US, Canada and Mexico. Measured in thousands of units.

Consumer Price Index – All items: Urban population sample. Index 1982-84 = 100, NSA.

Natural Gas Futures Prices: Dollars per MMBtu. NYMEX, following month delivery.

Crude Oil Futures Prices: Light, sweet. Dollars per barrel. NYMEX, following month delivery.

Steel Scrap Prices: #1 Heavy Melting Mill, Pittsburgh, dollars per gross ton, FOB delivered, monthly average.

Foreign Economies: Measures of industrial production, indexes with varying years equaling 100. Some are NSA.
Definition of Terms

Moving Totals

Moving totals are used to smooth out the volatility inherent to monthly data, particularly at the product or company level. An annual moving total goes one step further in that it also removes seasonal change from the data series under consideration. This is desirable when the objective is to discern and forecast the underlying cyclical trend for the subject data series.

A moving total is simply the total of the monthly data for the stated number of months. For example, the 3 month moving total (3MMT) for November 2011 would be the total of the September 2011, October 2011, and November 2011 monthly data. When December 2011 data becomes available, you simply drop September from the calculation and add December. The December 2011 3MMT is thus comprised of the activity recorded in October, November, and December 2011. 3MMTs are used to illustrate the seasonal changes inherent to the data series. They are also used when forecasting specific product activity on a quarterly basis.

Example: Housing Starts 3MMT

<table>
<thead>
<tr>
<th>Month</th>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>September</td>
<td>2011</td>
<td>.133</td>
</tr>
<tr>
<td>October</td>
<td>2011</td>
<td>.140</td>
</tr>
<tr>
<td>November</td>
<td>2011</td>
<td>.121</td>
</tr>
</tbody>
</table>

3MMT = .394

A 12 month moving total (12MMT) is derived by adding 12 consecutive months of activity together. The 12MMT for November 2011 is the total derived when adding the Housing Starts (or bookings or sales) figures for December 2010 through November 2011. To ease the calculation process, as each new month of data becomes available, add the newest figure and drop the previous oldest figure. In our example, the November 2011 12MMT can be quickly derived by adding the November 2011 monthly figure to the October 2011 12MMT, and then subtracting the November 2010 number from the subtotal. 12MMTs are used to define the business cycle trend inherent to the subject time series. When ITR refers to a data trend, it is referring to the 12MMT trend.

Example: Housing Starts 12MMT

<table>
<thead>
<tr>
<th>Month</th>
<th>Year</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>November</td>
<td>2010</td>
<td>.117</td>
</tr>
<tr>
<td>December</td>
<td>2010</td>
<td>.101</td>
</tr>
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3MMT = .394 12MMT = 1.598
There are times when it is desirable to calculate a 12-month moving average (12MMA). A 12MMA is calculated in the same way as the 12MMT, with the additional step of the sum of the 12 months of activity will be divided by 12 to reflect the monthly average level of activity over the preceding year. A 12MMA will look exactly like a 12MMT when plotted on a chart. 12MMAs are used instead of 12MMTs when one of the following is being observed: an index, percentages (for interest rates or inflation), or inventories.

**Rate-of-Change**

Rate-of-change comparisons are utilized for various purposes, all of which relate to the data trend. A 12/12 rate-of-change (discussed below) is more sensitive to changes in cyclical trends and can be used to anticipate trend reversals, often before the data trend even begins to show signs of weakening. An understanding of the timing relationship between a 12/12 rate-of-change and the particular data trend allows for the development of dependable timing estimates for data trend highs and lows. The rate of rise or decline in the rate-of-change is often indicative of the recovery or recession expected in the data series. In general, the rate-of-change provides a reflection of change in a data trend before the change becomes apparent in either the 3MMT or 12MMT.

**Calculating Rate-of-Change:**

A rate-of-change figure is simply the ratio of a number in a data series to a preceding number in that data series. The time interval between the numbers is fixed. One rate-of-change figure can tell you instantly whether activity is running below or above this time last year, and by how much. Consecutive rates-of-change will reveal whether activity levels are getting progressively better or worse compared to last year. It is the rate-of-change of a data series which is used to illustrate and measure cyclical change and identify trends.

The most common rate-of-change is the 12/12. As is the case for all rates-of-change, the numerator denotes the data aggregation involved; the denominator indicates the time intervals. The 12 in the numerator of the 12/12 designation specifies that a 12MMT comparison is being made. The 12 in the denominator signifies that the time interval is 12 months (for all of our work represented by this text, the time interval will be fixed at 12 months). The 12/12 rate-of-change for July 2011, expressed as a percent, would be calculated as follows:

\[
\left( \frac{July \ 2011 \ 12MMT}{July \ 2010 \ 12MMT} \times 100 \right) - 100 = -1.7\% \quad July \ 2011 \ 12/12
\]

The July 2011 12MMT was 1.7% below the July 2010 12MMT. What we would next want to see is if this figure were trending upward or downward. By doing so, we could begin to give definition to change specifically relating to the business cycle.

Of course it is possible that when a 12/12 calculation is made the result will be positive.

\[
\left( \frac{November \ 2011 \ 12MMT}{November \ 2010 \ 12MMT} \times 100 \right) - 100 = +1.1\% \quad November \ 2011 \ 12/12
\]
The 1.1% rate-of-change figure reflects the fact that activity for the 12 months ending November 2011 was 1.1% above the level of activity posted for the 12 months ending November 2010. The 12/12 is providing a snapshot of a given month. It shows where business stands today in relation to the annual total of one year ago. What becomes paramount to anticipating future change is whether this figure is moving upward (i.e. 3.0%) or downward (i.e. -1.7%).

The 12/12 is used to define business cycle change for the subject data series. ITR research has shown that business cycle change for any given data series is going to be most measurable and forecastable when using the rate-of-change for the series as opposed to the actual data. Repetitive trend characteristics (timing and dynamics) can more easily be observed, measured, and utilized for anticipating change when using the 12/12 rate-of-change.

Another rate-of-change frequently used in measuring cyclical change is the 3/12. As the numerator indicates, the figures being compared are 3MMTs. The time interval is fixed at 12 months. The 3MMT is not used to define the business cycle of the data series per se, but rather is utilized as a tool to better enable us to anticipate shifts in the business cycle trend (changes in the cyclical momentum). The 3MMT is calculated as follows:

\[
\left( \frac{\text{January } 2011 \text{ 3MMT } .324}{\text{January } 2010 \text{ 3MMT } .345} \right) \times 100 = -6.1\% \quad \text{January } 2011 \quad 3/12
\]

Sales for the three months ending January 2011 were down 6.1% from the year before. Monitor to see if this figure is improving (approaching 0.0%) or decreasing (falling further below -6.1%) to gauge what the business cycle momentum is for the subject data series. The 3/12 and the 12/12 are the two most frequently used rates-of-change when analyzing company or market data.

There are times when a 1/12 rate-of-change will be employed. Dividing the most recent monthly figure by the monthly figure of one year ago derives the 1/12. The 1/12 is frequently too volatile for use at the company level. It is used primarily for aggregate, macroeconomic data series, which are not prone to significant swings from one month to the next. The 1/12 is calculated as follows:

\[
\left( \frac{\text{February } 2011 \text{ monthly data } .108}{\text{February } 2010 \text{ monthly data } .120} \right) \times 100 = -10.0\% \quad \text{February } 2011 \quad 1/12
\]

Business is down 10.0% from this same time one year ago. What we need to know next is whether this figure is part of an upward trend or downward trend. We can also observe if the February 2011 1/12 rate-of-change is higher or lower than the February 2011 3/12. If it were higher and part of a sustainable trend, then we would have empirical evidence that the 3/12 trend is approaching a cyclical low. If the 3/12 is approaching a low, the 12/12 trend is also moving closer and closer to the low. In other words, we would have our first empirical indication of impending business cycle rise. All this refers to a system of Checking Points™ developed by ITR, which provides for the orderly observation and anticipation of relatively near-term reversals in predominant business cycle trends.