



# Weekly Chemistry and Economic Trends

ACC Economics & Statistics

9 July 2010

## Macroeconomic Status

Our running tab of positive indicators remains at 12 out of 20 this week. Though technically yellow, our banner is presented in chartreuse to reflect a definite green hue. Please refer to the end of this report for an explanation of the color codes. See the *Indicators in Detail* section at the end of this report for more details on the change in the following indicators.

**Consumer Credit** ↓ 4.5%; ↓ 3.9% Y/Y

**ISM Non-Manufacturing** ↓ 1.6 percentage points to 53.8 (still expanding)

**Semiconductor Sales** ↑ 4.5%; ↑ 47.6% Y/Y

**Wholesale Trade** ↓ 0.3%; ↑ 15.1% Y/Y

**OECD CLI+6** ↑ 0.2%; ↑ 11.8% Y/Y

The economic reports were few this week and were the latest in a series of economic indicators pointing to a loss of momentum at the end of the 2<sup>nd</sup> quarter and to a slowdown in second half 2010 economic activity. Expansion of the services sector is clearly slowing and consumers continue to retrench and deleverage. Along the supply chain, a slight decline was seen in wholesale trade (the first decline in over a year). The boost from inventory rebuild may have played out and as with other businesses, wholesalers remain cautious about restocking as concerns remain about underlying strength in demand. While the economy remains in recovery territory the trend has been rapidly towards deceleration. The economic reports through March and April were generally good but reports dealing with May and June activity suggest the economy hit a soft patch.

Basic and specialty chemical producers primarily market to other manufacturing industries. The reports have been somewhat more favorable although a higher US dollar will cause exports (a driver of growth in the past year) to slow. The semiconductor industry, for example, continues to recover but the pace of recovery is expected to moderate. Leading indicators of industrial output point to slowing activity. Slumping commodity prices confirm the shift to a slower pace.

## Business of Chemistry Status

For the business of chemistry, the indicators still bring to mind a green banner for basic and specialty chemicals.

**Oil** ↑ \$75.44 (Thursday)

**Natural Gas** ↓ \$4.52 (Thursday)

**Railcar Loadings** ↑ 1,988 from a week ago; ↑ 12.3% Y/Y (13-week moving average)

**Market Capitalization** ↑ 5.0% this week; ↓ 9.5% YTD

Overseas, various national industrial production reports indicate further recovery of activity. Gains are especially pronounced in China, India, and elsewhere in Asia. The OECD composite leading indicators, however, signal moderating manufacturing and trade activity. Global growth likely peaked in the 2<sup>nd</sup> quarter.

Turning to the business of chemistry, there were no individual product reports this week but the railcar loadings data indicate continued improving activity. Wholesale trade in chemicals continues to expand and inventories remain relatively lean. The ACC analysis of downstream thermoplastics demand indicates that sales and underlying demand are fairly balanced.

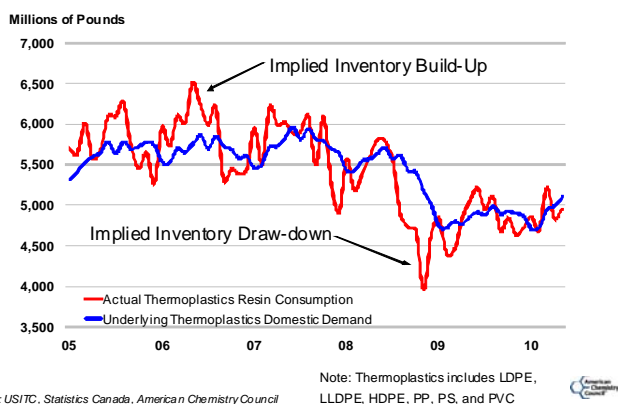
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## DOWNSTREAM THERMOPLASTICS INVENTORY ANALYSIS

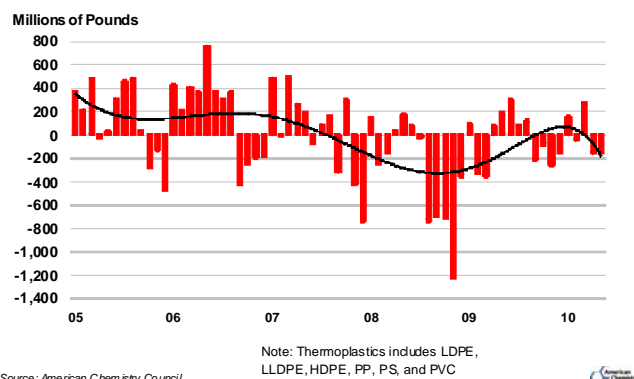
To assess the plastic resins inventory along the value system it is useful to track increases and declines in demand against a trend line that takes into account the dynamics of the aggregated economic activity downstream. Several approaches have been used to assess underlying demand but the approach used here is based on a method developed for the steel industry. Various data sources were used to develop technical coefficients similar to those used in input-output (I-O) analysis. These technical coefficients represent a ratio of physical inputs consumed relative to output and are developed for disaggregate markets and product applications. The method was used to provide an estimate of the level of demand for each plastic resin relative to each month's level of economic activity. This fitted level implies what resin demand would most likely be, given the economic environment of that month and on-going technical relationships. It measures consumption through the end-use product or applications. That is, to use a food packaging example, the equivalent-resin consumption downstream through convertor and to the food product manufacturer. The results of the analysis are robust.

### Underlying Thermoplastics Demand vs. Actual Thermoplastics Resin Consumption



The first chart illustrates the level of actual resin consumption (defined as domestics sales plus imports) for the six major thermoplastics (HDPE, LLDPE, LDPE, PP, PS, and PVC) combined versus underlying demand where demand reflects given technological relationships, the level and composition of North American economic activity, and more specifically end-use market conditions. Some segments of the economy are more 'polymer-intensive' than others. In general, when actual plastic resin consumption exceeds underlying demand, inventory accumulation is likely occurring. Conversely, when actual plastic resin consumption falls short of underlying demand, it's likely that downstream inventory is being drawn-down. The second chart shows the difference between actual resin consumption and underlying demand.

### Underlying Demand less Actual Thermoplastics Resin Consumption



The data for May indicate that customers were drawing down their inventories during the month. But overall, the recent trend (using a 3MMA) suggests that inventories are fairly balanced. Downstream end-use customers' consumption averaged 5.00 billion pounds of thermoplastic resins for the past 3 months. Over the same period, underlying demand averaged 5.01 billion pounds (3MMA). As a result, customers along the downstream supply chain drew down inventories by about 12 million pounds. The latest version of our model incorporates recalibrations to account for the behavior of one more years' worth of resin data.

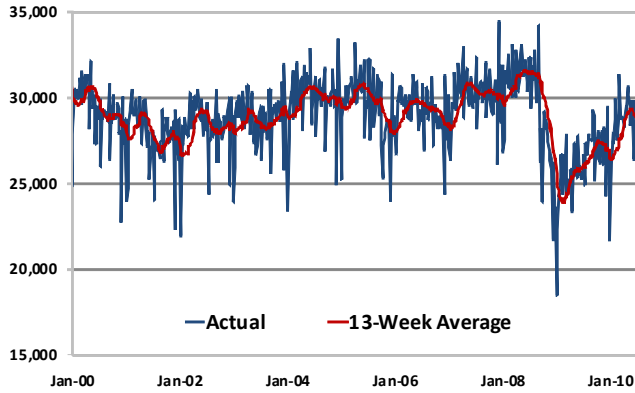
A similar set of charts are available separately for all polyethylene combined, polypropylene, polystyrene, and polyvinyl chloride as well as epoxy, and styrene-based latexes. These charts along with a spreadsheet are available for ACC members on MemberExchange. (See details under For More Information.)

## CHEMICAL RAILCAR LOADINGS

According to the Association of American Railroads (AAR), for the week ending 3 July (week 26), railcar loadings of polymers and basic chemicals (blue line) rose by 1,988 to 30,536 railcars. Compared to the same week last year, loadings were up 22.5% Y/Y and were up 12.8% YTD. Loadings have been on the rise for six of the last 13 weeks.

The railcar loadings data are the best 'real time' indicator of industry activity. This is especially the case for polymers and other basic chemicals. But the data are fairly erratic. This is one reason why we employ a 13-week moving average to smooth out many of the seasonal irregularities. The 13-week moving average of railcar loadings (red line) indicates continued improving activity and is now up 12.3% Y/Y.

## Chemical Railcar Loadings

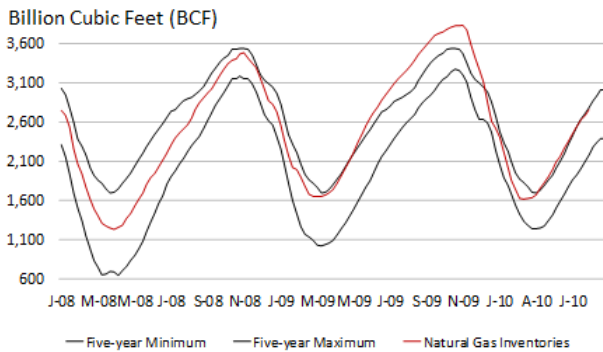


Source: Association of American Railroads

## ENERGY

The Energy Information Administration (EIA) reported a 78 BCF build in **natural gas inventories** for the week ending 2 July. A typical build for this week is 74 BCF. Natural gas inventories now stand at 2,762 BCF and are 0.8% (23 BCF) below last year's levels for the week, but 11.5% (285 BCF) above the five-year average. Inventories of natural gas remain well near the five-year maximum. With the heat wave in the East, a large draw is expected next week.

## Natural Gas Inventories



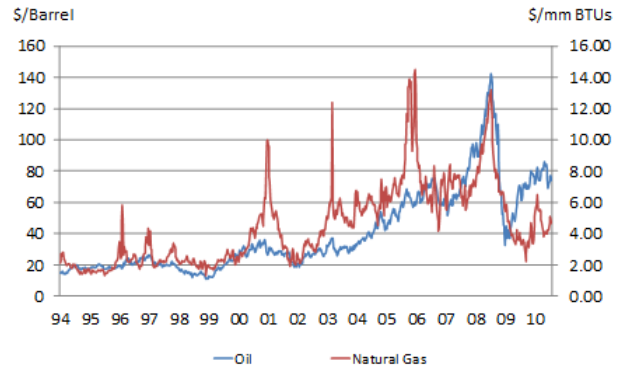
Source: Energy Information Administration

With still relatively high inventories and signs that the heat wave will ease, **natural gas prices** (the benchmark Henry Hub), closed at \$4.52 per million BTUs on Thursday, down from \$4.55 last Thursday. A year ago, the price was \$3.33 per million BTUs. As a result, recent prices represent a 35.7% Y/Y gain. With falling crude inventories, **oil prices** rose to \$75.44 per barrel yesterday (Thursday). A year ago, oil was \$60.41 per barrel, thus, recent prices represent 24.9% Y/Y gain.

At 16.7:1, the ratio of oil prices to natural gas prices improved from 16.1:1 a week ago. One year ago, the ratio 18.1:1. As a

rough rule of thumb, when the ratio is above a band between 6 and 7, the competitiveness of Gulf Coast-based petrochemicals and derivatives vis-à-vis other major producing regions is enhanced. In the US, 70% of ethylene, for example, is derived from natural gas liquids while in Western Europe, 70% is derived from naphtha, gas oil and other light distillate oil-based products. Historically, other factors (co-product prices, exchange rates, capacity utilization, etc.) have played a role as well.

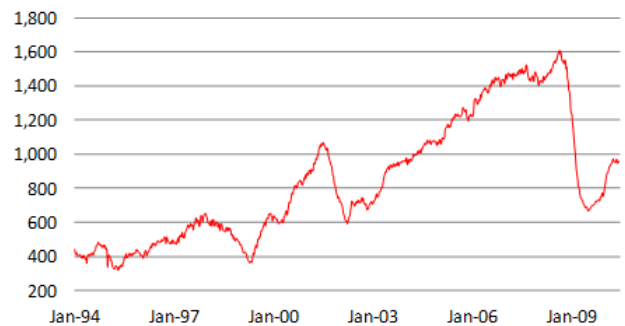
## Oil and Natural Gas Prices



Source: Energy Information Administration

According to Baker-Hughes, for the week ending 2 July the North American **natural gas rig count** rose by two to 960 rigs. One year ago the rig count was 688 rigs.

## Natural Gas Rig Count

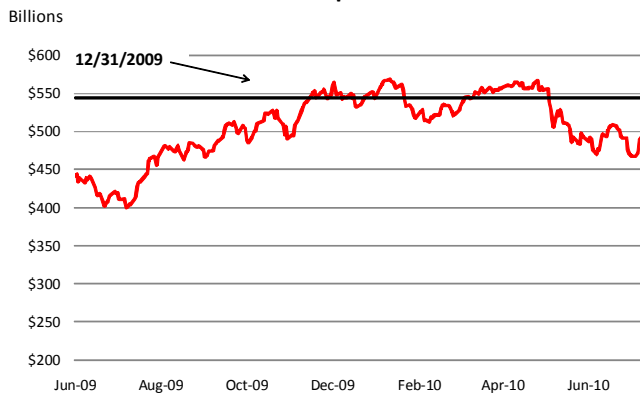


Source: Baker-Hughes

## CHEMICALS MARKET CAPITALIZATION

The S&P 500 index rose 4.2% during the week ending Thursday, 8 July. The ACC market capitalization of US basic chemical and specialty chemical companies also rose, by 5.0% from what it was last week to close at \$492.4 billion on Thursday.

## Basic & Specialties Market Capitalization

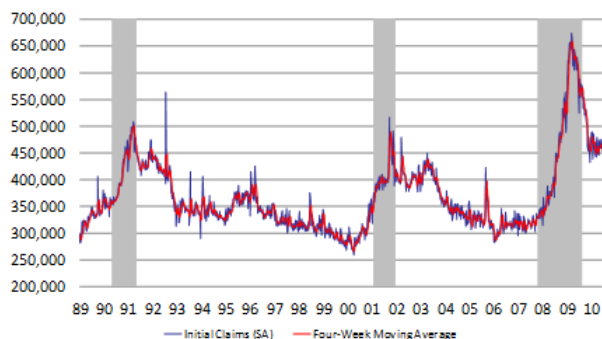


Equity prices are often a good indicator of future activity and represent one component of the leading economic indicators. The ACC market cap is down 9.5% from the beginning of the year. By comparison, the S&P 500 index is down by 4.0% since the beginning of the year.

### INDICATORS IN DETAIL

Note that economic statistics tend to be somewhat erratic in nature. As seen with the disruptions from the 2005 hurricanes, seasonality plays a role and one must be careful in placing too much emphasis on a single month's figures. Analysts often use a three-month moving average or employ Y/Y comparisons to deal with the volatility. *Also note that chemistry-related items and commentary are reported in italics.*

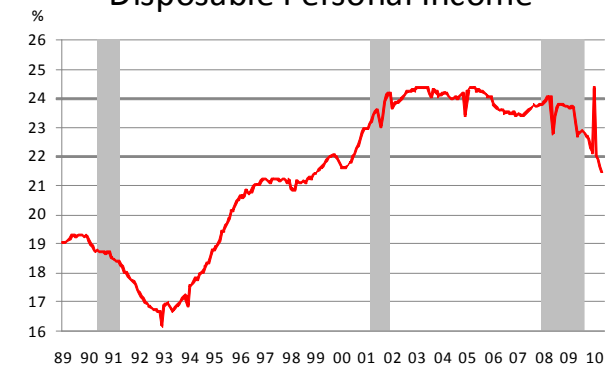
## Initial Claims for Unemployment Insurance



Source: Department of Labor

The Department of Labor reported that in the week ending 3 July, **initial claims** for unemployment insurance decreased by 21,000 to 454,000. The four-week moving average was 466,000, a decrease of 1,250 from the previous week.

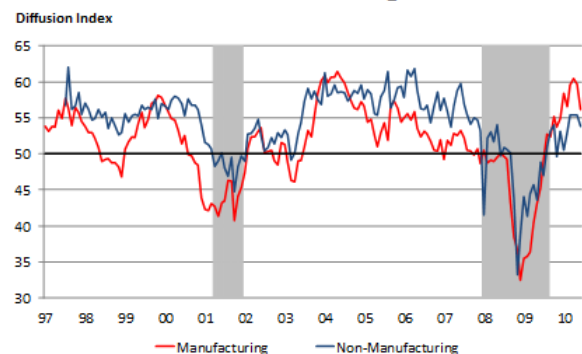
## Consumer Debt as a Percentage of Disposable Personal Income



Sources: Bureau of Economic Analysis, Federal Reserve

The Federal Reserve reported that **consumer credit** fell at an annual rate of 4.5% in May. Consumer credit outstanding now stands at \$2.42 trillion. Revolving debt (i.e., credit cards) continued to contract, falling at an annual rate of 10.5% as consumers continued to pay down debt and hold off on new spending. Non-revolving debt (i.e., car loans) fell 1.5% reflecting a decline in purchases of consumer durable goods that are often financed. Consumer credit was off 3.9% Y/Y. This compares with a 4.6% Y/Y gain in consumer spending and a 1.7% Y/Y gain in disposable personal income. Consumers continue to deleverage, a process that will continue until debt-to-income ratios ebb down toward historic levels.

## ISM Manufacturing and Non-Manufacturing Indices



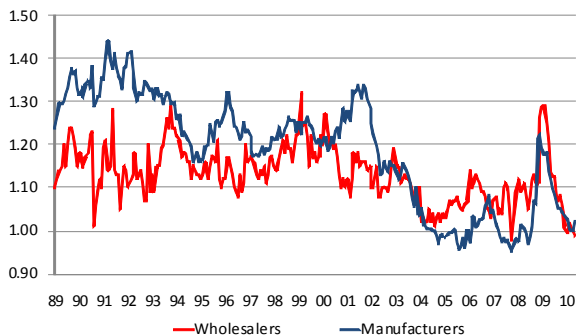
Source: Institute for Supply Management

The Institute for Supply Management (ISM) reported that its **nonmanufacturing PMI** declined a larger-than-expected 1.6 percentage points to 53.8 in June. (As with the manufacturing PMI, with this type of diffusion index, a reading above 50 indicates expanding business activity, while a reading below 50 signals contraction.) Thus, service-related businesses grew for the sixth month in a row, but at a decelerating pace. This is

consistent with a second half slowdown. With the exception of supplier deliveries, weakness among sub-indices was across-the-board. The employment sub-index, which had previously moved into slight expansionary territory, fell back below 50 and the export and import sub-indices also fell below 50. The prices paid sub-index fell 6.8 percentage points to 53.8, signaling an absence of inflation. (See [www.ism.ws](http://www.ism.ws) for more details.)

The Census Bureau reported that **wholesale trade** declined (by 0.3%) in May to \$350.6 billion, following a 0.9% gain in April and marking the first monthly decline since March 2009. Compared to a year ago, wholesale sales were up 15.1%. Wholesale sales posted small gains or declines in many categories with the largest declines in lumber, farm products, and miscellaneous nondurables. The largest gains were seen in sales of metals and minerals (except petroleum) and furniture. Wholesale inventories rose by 0.5% to \$398.8 billion, following a 0.2% gain in April. Inventories were off 2.1% Y/Y. Up from 1.13 in April, the inventories-to-sales ratio was 1.14 in May. A year ago, the ratio was 1.34. The boost from inventory rebuild may have played out and as with other businesses, wholesalers remain cautious about restocking as concerns remain about underlying strength in demand. *Wholesale sales of chemicals grew by 1.6% in May to \$9.1 billion, following a 2.0% gain in April. Compared to a year ago, wholesale sales were up 20.5% Y/Y. Wholesale inventories of chemical products rose by 0.7% to \$9.0 billion, following a 1.4% gain in April. Inventories were up 5.2% Y/Y from their year ago levels. As a result, the inventories-to-sales ratio fell slightly from 1.00 in April to 0.99 in May. A year ago, the ratio was 1.13. The relationship between sales and inventories reflects that inventories are still relatively lean.*

Chemical (excluding Pharmaceuticals)  
Wholesaler and Manufacturer  
Inventory-to-Shipment Ratio

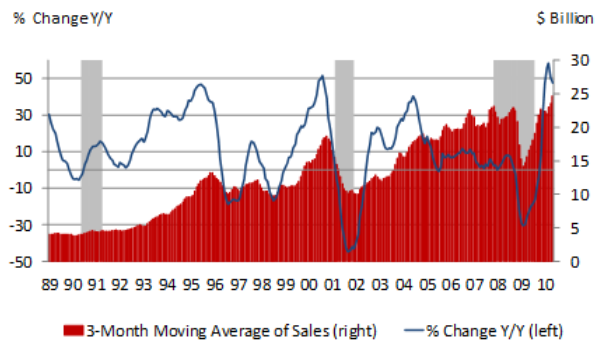


Source: Bureau of the Census

The Semiconductor Industry Association (SIA) reported that **worldwide semiconductor sales** climbed 4.5% to \$24.65 billion (on a three-month moving-average basis) in May a level up 47.6% Y/Y. As expected, this year-on-year growth rate

declined slightly from the 50.4% Y/Y pace in April and going forward these year-earlier comparisons will further moderate given the industry's recovery that gained momentum in the second half of last year. Regionally, growth in the Americas and Asia-Pacific regions is leading the rebound in global sales. From an end-use product view, sales have been driven by strength in sales of personal computers, cell phones, corporate information technology, industrial applications, and light vehicles. (See [www.sia-online.org](http://www.sia-online.org) for more details.) *In the United States, electronic chemicals represents a \$8.4 billion market for cleaners, developers, dopants, encapsulants, etchants, photoresists, specialty polymers, strippers, and other products. These chemicals are essential materials and enablers used in the manufacture of semiconductor. Globally, this is a \$43 billion market for chemistry.*

Worldwide Semiconductor Sales

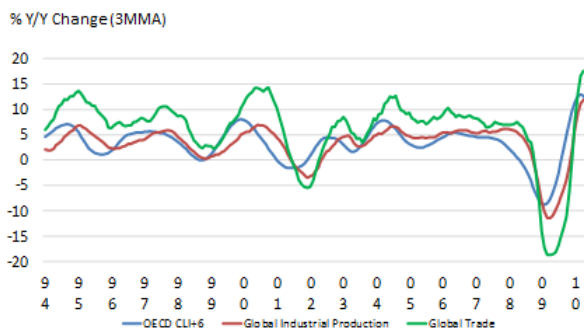


Source: Semiconductor Industries Association

The Organization for Economic Co-operation and Development (OECD) released its **composite leading indicator** (CLI) for May 2010 and it continues to point to an expansion but with stronger signals of a slowing pace of growth than in last month's assessment. Peaks in the growth cycle have emerged in France, Italy, China and India and tentative signs of a peak are emerging in Canada, the United Kingdom and Brazil. The CLIs for Germany, Japan, the United States and Russia continue to indicate that the ongoing expansion in activity is likely to be maintained, but possibly at a slower pace. The OECD CLI is designed to provide early signals of turning points (peaks and troughs) between expansions and slowdowns of economic activity. In addition to the developed nations, the OECD has also developed CLIs for the major six OECD non-member economies (Brazil, China, India, Indonesia, Russian Federation and South Africa). As a result, the CLI for the OECD+6 is a good leading indicator for global industrial activity. It rose 0.2% in May, the 16<sup>th</sup> consecutive gain since it bottomed in January 2009 but it marks one of the slowest gains. The CLI+6 was up 11.8% Y/Y on a 3MMA basis but there are signs of slowing manufacturing and trade flow activity ahead. *Because the OECD CLIs are centered on industrial production for the reference cycle, these leading indicators are good indicators*

for basic and specialty chemicals, 85% of which are sold to the industrial sector.

## The OECD CLI + 6, Global Industrial Production, and Global Trade



Source: OECD, various national statistical agencies, ACC analysis

### NEXT WEEK

Economic reports released next week include international trade, retail sales, business inventories and sales, import prices, producer prices, consumer prices, industrial production and capacity utilization, Empire State Survey, and the Philly Fed Survey.

### UPCOMING EVENTS OF INTEREST

“Econometrics for the Business Analyst”

17-20 August

National Association for Business Economics (NABE)

Federal Reserve Bank of Atlanta

Atlanta, Georgia

Contact: [www.nabe.com](http://www.nabe.com)

“The 3<sup>rd</sup> Chemical Purchasing Summit”

16-17 September 2010

ICIS Chemical Business

Hyatt Harborside

Boston, Massachusetts

Contact: [www.icis.com](http://www.icis.com)

“2010 Plastics Processors Conference & Plastics Industry Workshop”

20-21 September 2010

Chemical Market Associates, Inc.

The Westin Michigan Avenue Chicago

Chicago, Illinois

Contact: [www.cmaiglobal.com](http://www.cmaiglobal.com)

### FOR MORE INFORMATION

For ACC members, our section of the members-only extranet, MemberExchange, contains a plethora of data, economic

analyses, presentations, outlooks, weekly economic updates, and much more. You can access frequently updated data files (which provide the most recent and historical data for the business of chemistry - including trade data) as well as the economic data that enable you to track worldwide industry trends, follow developments as they unfold and gain insight into the long-term outlook. These include the indicators covered in this weekly report. To request access to the site, go to: <https://memberexchange.americanchemistry.com>, and select “Economics and Statistics,” and complete the registration process.

In addition to this weekly newsletter, ACC offers monthly, semi-annual and annual economic data publications that enable users to track worldwide industry trends, follow developments as they unfold and gain insight into the long-term outlook. These products contain comprehensive statistics and analyses that cover worldwide production, trade, shipments, inventories, price indices, energy, employment, investment, R&D, EH&S, financial performance measures, macroeconomic data, plus MUCH more. To order, call 301-617-7824 or visit ACC online at <http://americanchemistry.com/thestore> and select Software.

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*Note on the color codes: The banner colors represent observations about the current conditions in the overall economy and the business of chemistry. For the overall economy we keep a running tab of 20 indicators. The banner color for the macroeconomic section is determined as follows:*

*Green – 13 or more positives*

*Yellow – between 8 and 12 positives*

*Red – 7 or fewer positives*

*For the chemical industry, there are fewer indicators available. As a result we rely upon judgment whether production in the industry (defined as chemicals excluding pharmaceuticals) has increased or decreased three consecutive months).*

