# **Year-End 2007 Situation & Outlook**

At the end of 2007, it's clear that global economic growth is slowing. The housing downturn has adversely affected the United States and the ensuing credit problems (and subsequent tightening) have spread to other nations. A key issue is whether or not the weakness has done enough damage to tip the economy toward recession. The general consensus is that it is likely that the US will avoid a downturn but experience a slowdown with slowing prospects for the broader global economy. Global industrial activity will parallel these trends although an inventory correction may foster a stronger deceleration of factory activity. This will affect global chemistry demand and as a result, growth will moderate into 2008. For the business of chemistry in the United States, resilient overseas economic growth and a low dollar will aid export demand, resulting in a trade surplus and new highs for production volumes.

#### **Economic Environment**

The global economy is on track to post a year of additional strong growth (5.0% on a PPP basis) in 2007 and is expected to maintain momentum into 2008 and 2009. Much of Western Europe is posting stronger growth than in recent years and although Japan features some softness, China, India and many other emerging markets are growing at a strong pace, offsetting slower growth in the United States and elsewhere. According to the IMF, world GDP grew 5.4% in 2006, marking the best four-year period since the early-1970s. Notwithstanding a pronounced slowdown in the United States, global growth of the last few years will continue into 2008 and 2009, led by continued strong economic growth in emerging markets. With the powerful influence of globalization, world economic growth is anticipated in the consensus (or central) scenario to average 4.6% per year. Growth in world trade appears to have peaked, but will expand at a pace 1.5 times that of output during 2008 and 2009.

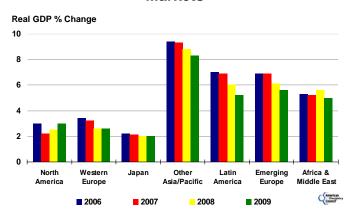
The US economy has clearly lost momentum, the result of the downturn in housing. Growth outside of housing, however, has actually been strong, driven by a surge in exports and by resiliency in consumer spending. The latter has been robust as a result of sustained job creation and strong income gains but growth should slow in wake of negative wealth effects from falling home prices and higher credit costs. Any additional significant weakening of housing along with a slow-down in job creation has the potential to create the conditions consistent with a recession scenario.

The US light vehicle industry has softened as have industries tied to housing (carpeting, furniture, appliances, etc.) and manufacturing in general. The major question remains whether the US economy has entered a mid- to late-cycle

slowdown -- a soft landing? Or are certain indicators harbingers of worse -- a recession? A number of positive factors (continuing wage increases, job gains, good corporate profits and balance sheets, strong equity markets, balanced household finances, etc.) should offset the cooling effects from housing and sub-prime mortgages. Nonetheless, the likely scenario is for the US economy to continue below-trend for several quarters.

Turning elsewhere, strong economic growth is anticipated in the Asia-Pacific region, as well as emerging Europe. In addition, strong commodity prices will aid growth in Africa and the Middle East and in Latin America. Indeed, many emerging markets appear to be unaffected by the upheavals in the credit markets of North America and Western Europe. The latter region along with Japan is now slowing.

## Fastest Economic Growth is in Emerging Markets

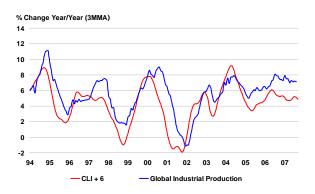


During 2007 year-over-year (Y/Y) growth in global industrial production has moderated but it remains at a high level. Capacity utilization is still relatively high in many industries, the consequence of low investment in many industries during the past 10 years. Production in China and elsewhere in Asia-Pacific remains strong.

Leading indicators of global industrial production suggest that the current growth cycle has peaked and that the global industrial cycle will shed momentum. It appears that another soft-patch in global manufacturing is underway, driven in part by an inventory correction. After a 6.2% gain in 2006, growth in manufacturing activity will moderate in 2007 and into 2008 and 2009. Major growth centers continue to be China, other East Asia, and some emerging European nations.

Core inflation measures in many countries fell during 2006 and underlying inflationary pressures continue to recede in the United States. The world economy, however, is encountering capacity constraints. Within the developed nations these constraints are showing up in labor markets. After year-earlier inflation comparisons moderated in 2006, pressures have mounted from tight labor markets and other resource constraints as well as from rising energy, food and other commodity prices. World inflation intensified this year but will likely moderate along with global economic growth. It will remain elevated compared to the 2002-06 period.

### **OECD CLI + 6 / Global Industrial Production**

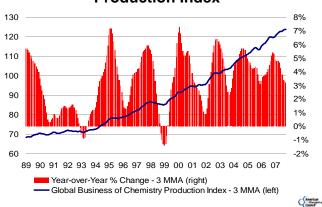


Sources: OECD, various national statistical agencies, ACC analysis

In summary, although the US economy has slowed, the consensus is that this is a soft landing, with improved economic prospects in 2009. A broad-based slowdown in economic growth is expected but with enough room to slow without slipping into recession. The global economy is rebalancing and economic growth should remain resilient, resulting in seven years of relatively robust world economic growth. This will provide an environment for the business of chemistry in which production will continue to increase, albeit at a diminished pace.

The risks, of course, are still quite high and another, less optimistic future for the economy is always possible. Eventually, economic cycles end and the risks of a sharper, more pronounced downturn are relatively high. The US housing market leading to a more serious retrenchment in the broader economy is perhaps the foremost risk as is a pronounced global credit crunch. The global credit crunch that emerged this summer transmits forces of contraction and has clearly increased downside risks for the world economy. Uncertainty still remains about the scale and distribution of exposure. The issue is on-going and the effects on economic growth have yet to fully emerge. The problems are likely to get worse before they get better. Tighter credit conditions are already expected to dampen global economic growth during 2008. The latest surge in oil prices adds to the uncertain outlook. A rise in oil prices due to a supply shock could engender a global economic slump. China's economy is showing signs of an asset bubble in both equity and land prices. A hard landing in China (a major economic locomotive) is another threat as are ever-present financial market risks amid global imbalances. High and rising commodity prices are threatening levels of inflation and combined with stronger growth could lead to more aggressive tightening of monetary policies, setting the stage for weaker performance beyond 2008. Finally, the Avian Flu, another major terrorist attack, or other as yet unforeseen events could dampen the global economy. There is no evidence that a recession has begun but current conditions are amenable for a recession scenario.

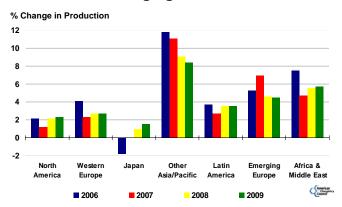
## Global Business of Chemistry Production Index



### **Global Business of Chemistry**

During 2007, the global business of chemistry has paralleled trends in broader industry. Overall activity in the \$2.85 trillion global business of chemistry has moderated as well. Year-earlier comparisons have moderated since October 2006 although in some nations (Singapore, Taiwan, etc.) they have accelerated. Gains during the past year have been broad-based but largest in China, elsewhere in Asia-Pacific, Africa and the Middle East, and Central and Eastern Europe.

## Fastest Growth in Chemistry is in Emerging Markets

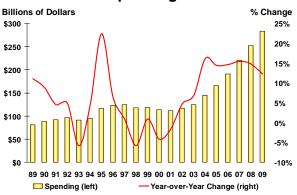


The global chemical industry still appears to be expansionary but with patterns consistent with a more mature phase of the cycle. Leading indicators of global industrial production, however, continue to suggest that the growth cycle peaked. Moreover, recent softness reflects some downstream inventory de-stocking in many nations. In addition, capacity additions (and production) in the Middle East have moderated as many projects have been delayed.

Global business of chemistry output will increase 4.1% in 2007, down from the peak 5.3% in 2004. Growth will improve to 4.3% in 2008 before moderating to a 4.2% gain in 2009. During the next two years, the most rapid growth will occur in the emerging nations of Asia-Pacific, Africa and the Middle East, Central and Eastern Europe, and Latin America. Most notable are China, India, and Russia but Korea, Singapore, and Taiwan will also present good growth prospects through 2009.

Among the developed nations, Ireland and Germany will experience the strongest growth. Elsewhere, the prospects will be more muted. Only nominal growth is expected in the United States and Japan. Italy and Sweden will see declines this year with recovery in 2008 and 2009.

# Global Business of Chemistry Capital Spending



The global business of chemistry invested \$190.6 billion in new plant and equipment (P&E) investment (or capital spending) during 2006. As the current investment cycle further matures, capital spending will increase 15.5% to \$220 billion in 2007. The prospects for capital spending during the next few years are good given announced projects and industry dynamics. As a result, the global investment cycle will continue, with additional strong but maturing growth prospects. Global capital spending by the business of chemistry is expected to increase in 2008 14.8% to \$253 billion and decelerate in 2009, increasing 12.3% to \$284 billion. The bulk of the incremental investment will arise in the Asia-Pacific region, which will account for 58% of the incremental gain during the 2006 to 2009 period. Africa and the Middle East will account for nearly 15% of the incremental gain. Prospects beyond 2009 are less certain.

#### **US Business of Chemistry**

For the \$637 billion business of chemistry in the United States, a slowdown in manufacturing emanating from light vehicles and housing-related industries (construction goods, appliances, furniture, carpeting, etc.) engendered a modest downstream inventory correction during 2007. Table 2 presents details on the US economic environment. By the 3<sup>rd</sup> quarter, demand and supply were again in balance and the industry posted strengthening year-earlier comparisons. Inventories at the producer and distributor levels remain low, setting the stage for increased orders translating into production

The US business of chemistry faces some economic headwinds. A major risk at this point in the cycle is volatile natural gas costs. Although costs are off from their post-hurricane highs and down relative to oil, long-term supply-demand imbalances remain. A comprehensive US energy policy ensuring adequate and diverse supply -- including that from Outer Continental Shelf (OCS) and other new areas -- would go far in moderating volatility and supporting the competitive position of US industry and maintaining the value-added that chemistry provides to our economy.

**Trade:** The big news of 2007 is the strong gains in exports and improvement in the trade balance for chemistry. In 2007, US exports of chemistry products will likely rise nearly 15% to \$154.8 billion and imports will increase 8.2% to \$154.3 billion. As a result, the trade balance in chemistry will improve from a \$7.8 billion deficit to a \$0.5 billion surplus, the first surplus since 2001. Trade surpluses and deficits by major segment and by major nation and region are shown below in Table 1.

TABLE I
US TRADE BALANCES IN CHEMISTRY

(billions of dollars)	2005	2006	2007	2008	2009
Total Chemistry Trade Balances	-\$8.4	-\$7.3	\$0.5	\$2.1	-\$1.8
By Segment: Pharmaceuticals Total, excluding	-14.0	-17.8	-19.3	-20.5	-22.0
Pharmaceuticals Consumer Products Agricultural Chemicals Specialties Basic Chemicals	5.6 -0.9 0.0 -6.7 13.2	10.5 -0.4 0.6 -6.2 16.5	19.8 -0.4 -0.4 -4.4 25.0	22.6 0.4 0.2 -3.6 25.6	20.2 0.2 0.0 -4.0 24.0
By Region: Canada Mexico Latin America Western Europe Emerging Europe Africa & Middle East Japan China Other Asia-Pacific	1.4 10.5 5.6 -31.8 -2.3 -1.2 -0.6 0.1 9.4	0.8 12.2 6.8 -32.6 -2.1 -1.0 0.4 -0.1 7.9	0.1 9.5 7.8 -22.8 -1.5 -0.2 0.4 0.8 6.4	0.4 9.1 8.0 -20.5 -1.3 0.0 0.5 0.6 5.3	0.4 10.0 8.2 -22.8 -1.8 0.0 0.4 -1.0 4.8

American Council Continued strong growth is expected overseas and the value of the dollar will continue to be depressed through 2008. As a result, the demand for US exports is expected to rise. During 2008, however, as US growth moderates and the value of the dollar will make imports more expensive, import growth will remain relatively flat, allowing the trade surplus in chemicals to grow to \$2.1 billion. As the dollar strengthens in 2009, a stronger dollar will erode export growth. As a result, imports will grow at a faster rate, and the trade balance for the chemical industry will likely return to a deficit.

**Production Volumes by Segment:** With the slowdown in manufacturing, growth in the US business of chemistry stalled in late-2006, which carried into 2007. A build-up of downstream customer inventories and subsequent drawdown occurred with adverse effects on chemical industry production. Downstream inventory de-stocking, however, appears to be running its course and since the spring, overall growth in output has improved.

Due to a weak start to the year, the US business of chemistry will experience a total gain for the year of 1.3% during 2007, a figure that lies below the average for the last five years. Pharmaceuticals took over as the growth leader and will gain 2.0% this year. Excluding pharmaceuticals, only nominal growth occurred for the year as a whole. Strong export volumes offset soft domestic demand as the housing correction and soft patch in manufacturing clearly affected performance. Strong growth was experienced during 2007 in synthetic rubber as well as in bulk petrochemicals and organic intermediates. Plastic resins and some specialty chemical segments will experience more nominal growth with weakness centered elsewhere. Segments tied to housing, light vehicles, furniture and appliances face challenges. The data presented in Table 3 are based on the Federal Reserve Board (FRB) production indices, which are subject to revision.

Leading indicators of manufacturing activity, however, point to modest gains in demand. Assuming the consensus economic environment, overall US chemical industry growth will improve to 2.1% in 2008 and then 2.3% in 2009. A more mature stage of the chemicals cycle -- one consistent with growth closer to long-term averages -- will characterize these years. In 2008, basic chemicals and specialties will strengthen. Specialty chemicals will strengthen even further in 2009. Strong export volumes will characterize the near-term.

The industry, however, is sensitive to a number of risks. High and volatile energy costs are paramount in this regard. A weaker US economy and industrial activity would dampen domestic demand and lastly, a slowing world economy could affect exports.

**Production Volumes by Region:** From a regional perspective, the situation of the US business of chemistry has been mixed. Many regions faced challenges during 2007 as chemical activity cooled during the 4<sup>th</sup> quarter. Overall growth in 2007, led by the Gulf Coast region, will grow by 2.0% with the upswing in bulk petrochemicals and organics. Chemical industry growth across all regions is expected pick

up during 2008 and 2009 with the Mid-Atlantic and West regions (where pharmaceuticals are important components) leading. In the Gulf Coast region, chemical production will grow by 2.0% in 2008 and 1.4% in 2009.

**Shipments:** During 2006, high feedstock and other energy costs and improving operating rates resulted in higher chemistry product prices and contributed to higher shipment levels. As a result, shipments of the business of chemistry in 2006 rose 5.4% to \$637 billion. With mixed volumes in many areas, prices were soft, and this should result in only a slight improvement in 2007 shipments to \$639 billion. Continued expansion of production through the next couple years will push shipments to \$654 billion in 2008 and \$676 billion in 2009.

**Capacity Utilization:** As volumes expanded, overall operating rates tightened slightly to an average of 78.6% in 2007. The soft patch in the chemical industry appears to be ending and in combination with only modest capacity additions and strengthening production volumes, it will edge capacity utilization to 80% by 2009.

**R&D Spending:** As a science and technology, knowledge-based endeavor, the business of chemistry invested \$26.1 billion in research and development (R&D) in 2006. This is based on National Science Foundation (NSF) data, which we believe undercount actual spending, which was likely over \$33 billion.

As a result of lower profit margins earlier in the decade, companies moderated their R&D activity during the 2001 to 2003 period, with some improvement in spending by the business of chemistry since then. But the engine of innovation is still humming. Data suggest that over 14% of basic and specialty chemical company revenues are from new products and services, those developed within the last five years.

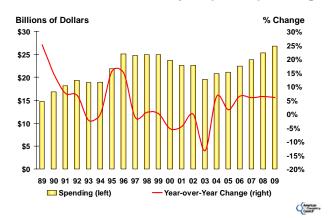
Spending gains will be modest, with R&D spending increasing 3.9% to \$27.1 billion in 2007. Continued gains are expected. During 2008, R&D spending will increase 4.4% to 28.3 billion and during 2009 it will increase 4.9% to \$29.7 billion.

Capital Spending: Expansion of capacity and the worst business conditions in a generation combined with lower profits created a difficult environment for capital spending during the period from 2000 through 2003. Lingering uncertainty concerning future demand combined with volatile feedstock and other energy costs, hindered capital investment. Thus, sustaining capital played a large role this decade.

Capital spending cycles generally lag cycles of industry activity. Improved profit margins set the stage for moderate increases in new plant and equipment (P&E) investment. Improving capacity utilization rates could trigger renewed capital spending by the industry. Spending increased 6.5% to \$22.5 billion in 2006. As the current investment cycle further enfolds, capital spending will increase 6.0% to \$23.8 billion in 2007, 6.3% to \$25.3 billion in 2008, and 6.0% to \$26.8 billion in 2009.

The largest proportion of capital spending is allocated towards expansion of production capacity and replacement of worn out plant/equipment. Furthermore, the majority of the expansion of production capacity is for the existing product range. Increased spending for expanding production capacity for existing products is a driver, particularly for the specialty chemical companies.

### **US Business of Chemistry Capital Spending**



Of great interest is the on-going geographical shift in spending by American chemical companies. With a mature market and the movement of customer industries overseas, companies are shifting investments toward regions offering lower feedstock costs (and cost of production) as well as in markets experiencing a higher degree of dynamism. The absence of a comprehensive US energy policy ensuring adequate and diverse supplies will retard investment (and subsequent job creation). This is equivalent to "capital flight". The geographic allocation of the capital budgets of responding companies is evidence of this shift. American chemical companies expect to

reduce their US share of their total capital spending budgets from 62% in 2006 to 48% in 2011. They anticipate significantly boosting their share to Africa and the Middle East, from 2% in 2006 to nearly 15% in 2011.

Employment/Wages: Since 1999, chemical industry employment has lost more than 110,000 jobs, the combined result of several years of challenging business conditions, high and volatile energy prices, and productivity improvements. Total employment in the business of chemistry will stand at 872,500 in 2007, up 0.4% from 868,700 in 2006. This is the first gain in chemical industry employment in nine years. Looking forward, however, chemical industry employment will fall as productivity gains outpace production growth. The pharmaceutical segment, which accounts for a third of industry employment, operates in a different environment than the rest of the industry and is not subject to the same raw material price pressures as other segments of the industry. Gains in pharmaceutical employment will be more than offset by declining employment in the rest of the industry. As a result, Employment will fall 2.2% in 2008 and 1.8% in 2009.

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TABLE 2 US MACROECONOMIC OUTLOOK

% Change Y/Y unless noted otherwise	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Macroeconomic Indicators										
GDP	3.7	0.8	1.6	2.5	3.6	3.1	2.9	2.1	2.4	3.0
Consumer Spending	4.7	2.5	2.7	2.8	3.6	3.2	3.1	2.9	2.1	2.8
Industrial Production	4.5	-3.5	0.0	1.1	2.5	3.2	4.1	2.0	2.6	3.2
Light Vehicle Sales (mm)	17.6	17.0	16.8	16.6	16.8	17.0	16.5	16.1	16.0	16.3
Housing Starts (mm)	1.57	1.60	1.71	1.85	1.95	2.07	1.80	1.36	1.16	1.41
Consumer Prices	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.8	2.5	2.3
10-Year Treasury Notes (%)	6.03	5.02	4.61	4.02	4.27	4.29	4.79	4.69	4.77	5.03
Unemployment Rate (%)	4.0	4.7	5.8	6.0	5.5	5.1	4.6	4.6	5.0	4.9
End-Use Market Output										
Mining	2.3	0.9	-4.3	-0.1	-0.6	-1.6	2.6	-0.6	1.2	0.9
Construction	2.2	-4.4	-0.5	-0.2	2.0	4.8	3.6	-0.9	0.3	2.5
Food, Beverages & Tobacco	1.4	-0.3	-0.9	2.0	0.5	3.6	3.3	3.8	1.9	1.7
Textile Mill Products	1.6	-7.7	-4.0	-1.6	5.4	5.4	-2.0	-7.5	-4.2	-2.9
Apparel	-4.9	-14.3	-21.4	-7.7	-13.9	-3.4	1.5	-0.3	-2.0	-3.6
Wood Products	-1.5	-6.4	2.5	0.9	3.6	6.3	-3.2	-8.8	-3.0	0.2
Paper	-2.1	-5.7	1.0	-2.7	0.8	0.5	-0.1	-0.8	0.7	1.1
Printing	0.6	-6.1	-5.9	-3.7	0.7	1.9	4.4	0.9	1.2	1.2
Petroleum	0.3	0.3	1.9	-2.5	9.4	2.9	0.9	0.4	1.9	1.6
Rubber & Plastic Products	1.1	-5.8	2.6	0.1	1.2	1.0	3.5	2.2	3.1	2.8
Non-Metallic Mineral Products	0.0	-3.8	-0.3	0.9	3.1	3.9	4.0	-1.1	1.0	0.9
Iron & Steel	-1.0	-9.6	-0.3	0.8	15.5	-5.7	6.4	-2.4	2.9	2.1
Non-Ferrous Metals	-7.8	-9.7	3.8	-1.3	2.5	1.9	0.5	0.7	1.5	1.1
Fabricated Metal Products	4.0	-7.3	-3.0	-1.1	0.2	4.2	5.4	1.9	2.8	2.3
Computers	16.5	0.8	-3.7	8.2	1.0	21.7	15.3	18.5	8.1	7.7
Semiconductors & Electronic Components	62.9	6.9	14.0	24.4	20.5	20.7	36. I	17.5	10.7	12.4
Appliances	5.9	-3.6	-1.3	3.9	4.9	-1.1	-0.2	-2.5	0.1	1.7
Motor Vehicles & Parts	-0.6	-8.9	10.3	3.5	0.2	-0. I	-1.4	-2.5	0.6	2.0
Furniture	1.5	-6.4	4.4	-1.8	2.9	3.5	0.2	-4.2	-0.2	0.3
Utilities	2.9	-0.5	3.1	1.9	1.4	2.0	-0.3	3.4	2.5	2.3

Sources: Bureau of the Census, Bureau of Economic Analysis, Bureau of Labor Statistics, Federal Reserve Board (FRB), and ACC analysis.

TABLE 3
US CHEMISTRY OUTLOOK

% Change Y/Y unless noted otherwise	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Business of Chemistry Output										
Total by Segment:	1.5	-1.8	7.2	1.4	4.3	2.2	2.1	1.3	2.1	2.3
Pharmaceuticals	3.9	7.6	7.9	3.4	0.6	1.9	-0.3	2.0	2.6	3.7
Chemicals, excluding Pharmaceuticals	0.3	-6.7	6.7	0.1	6.6	2.4	3.5	0.9	1.9	1.4
Consumer Products	3.2	1.7	13.9	-3.8	12.0	8.3	8.8	-0.4	2.6	1.3
Agricultural Chemicals	-5.6	-8.0	3.5	4.5	5.0	5.4	0.9	-5.7	1.8	1.4
Specialties	6.3	-9.5	1.1	-0.2	0.2	-0.5	3.5	-1.3	0.9	1.4
Coatings	-0.3	-2.2	0.3	-1.3	6.0	0.5	3.1	-1.9	0.4	1.1
Other Specialties	9.7	-13.0	1.6	0.3	-2.8	-1.1	3.7	-1.0	1.2	1.5
Basic Chemicals	-3.0	-9.9	6.2	1.6	8.1	0.6	1.7	3.0	1.8	1.3
Inorganic Chemicals	-7.1	-4.2	9.7	-0.2	-0.2	-1.0	4.2	2.2	0.6	0.9
Bulk Petrochemicals & Organics	-1.2	-13.7	6.1	5.1	15.1	-0.4	1.5	4.3	2.0	1.4
Plastic Resins	-0.8	-9.2	5.3	-3.7	7.5	4.5	1.8	1.9	2.5	1.7
Synthetic Rubber	0.3	-18.7	13.4	3.9	-2.9	-3.3	2.8	7.6	1.6	0.4
Man-Made Fibers	-6.7	-7.1	-11.3	4.7	-3.8	2.5	-10.2	-4.3	0.7	-0.5
Total by Region:	1.5	-1.8	7.2	1.4	4.3	2.2	2.1	1.3	2.1	2.3
Gulf Coast	-1.9	-9.2	6.9	1.1	7.7	1.3	1.7	2.0	2.0	1.4
Midwest	1.4	-1.7	6.5	1.7	3.8	2.5	1.2	0.6	2.1	2.3
Ohio Valley	0.2	-5.9	6.7	-0.3	7.1	2.9	2.7	0.8	2.0	1.5
Mid-Atlantic	2.4	1.5	7.6	1.9	3.5	2.3	1.4	1.5	2.3	2.7
Southeast	1.0	-3.1	6.8	1.3	4.5	2.3	1.4	1.0	2.2	2.2
Northeast	4.7	-0.7	7.0	1.2	2.3	2.3	1.6	0.8	2.2	2.5
West Coast	2.6	0.7	6.8	1.6	3.3	2.4	1.4	0.9	2.2	2.6
Other Chemistry Indicators										
Capacity	4.3	4.0	2.9	1.1	1.1	1.4	1.0	1.0	1.3	1.5
Capacity Utilization (%)	75.7%	71.4%	74.4%	74.6%	76.9%	77.5%	78.4%	78.6%	79.3%	80.0%
Capacity Camzadon (70)	73.770	7 11 170	7 11 170	7 1.070	7 0.770	77.570	7 0. 170	7 0.070	77.570	00.070
Exports (\$ billions)	\$79.9	\$80.2	\$81.2	\$91.5	\$109.4	\$119.5	\$135.0	\$154.8	\$168.7	\$180.5
Imports (\$ billions)	\$73.6	\$78.9	\$86.1	\$101.1	\$112.9	\$128.3	\$142.8	\$154.3	\$166.6	\$182.3
Trade Balance (\$ billions)	\$6.3	\$1.3	-\$4.9	-\$9.5	-\$3.5	-\$8.8	-\$7.8	\$0.5	\$2.1	-\$1.8
Shipments (\$ billions)	\$449.I	\$438.4	\$462.5	\$487.7	\$540.9	\$604.5	\$637.3	\$639.3	\$654.0	\$675.5
% Change	6.8	-2.4	5.5	5.5	10.9	11.8	5.4	0.3	2.3	3.3
% Change	0.0	-2.7	3.3	ر.ر	10.7	11.0	Э.Т	0.5	2.3	3.3
R&D Spending (\$ billions)	\$20.77	\$17.71	\$20.40	\$21.47	\$23.38	\$24.02	\$26.07	\$27.09	\$28.28	\$29.66
% Change	3.6	-14.7	15.1	5.3	8.9	2.7	8.6	3.9	4.4	4.9
Capital Spending (\$ billions)	\$23.70	\$22.59	\$22.57	\$19.55	\$20.78	\$21.10	\$22.46	\$23.81	\$25.31	\$26.83
% Change	-5.3	-4.5	-0.1	-13.4	6.3	1.5	6.5	6.0	6.3	6.0
Employment (thousands)	980.4	959.0	927.5	906. I	887.0	872.I	868.7	872.5	853.0	838.0
% Change	-0.2%	-2.2%	-3.3%	-2.3%	-2.1%	-1.7%	-0.4%	0.4%	-2.2%	-1.8%
Hourly Wages (\$/hour)	17.10	17.57	17.97	18.50	19.17	19.67	19.60	19.53	19.82	20.22
% Change	4.3%	2.7%	2.3%	2.9%	3.6%	2.6%	-0.4%	-0.4%	1.5%	2.2%

Sources: Bureau of the Census, Federal Reserve Board (FRB), Moore Economics, National Science Foundation, and ACC analysis.

TABLE 4
GLOBAL MACROECONOMIC OUTLOOK

% Change Y/Y unless noted otherwise	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
GDP										
North America	4.0	0.8	1.6	2.4	3.6	3.1	3.0	2.2	2.5	3.0
Latin America	4.3	0.6	-0.3	3.3	8.5	6.3	7.0	6.9	6.0	5.2
Western Europe	4.6	2.3	1.3	1.3	2.8	2.0	3.4	3.2	2.6	2.6
Emerging Europe	7.3	4.9	4.3	6.6	7.3	5.7	6.9	6.9	6.1	5.6
Africa & Middle East	4.9	1.5	4.1	5.5	5.6	5.3	5.3	5.2	5.6	5.0
Asia-Pacific	6.5	4.4	5.6	6.5	7.3	7.2	7.7	7.7	7.3	6.8
Total World GDP (PPP basis)	4.8	2.5	3.1	4.0	5.3	4.8	5.4	5.0	4.7	4.6
Word Trade Volume	12.2	0.2	3.5	5.5	10.8	7.5	9.2	6.9	7.3	6.9
Industrial Production										
North America	4.8	-3.5	0.1	0.9	4.0	3.0	3.8	1.8	2.2	3.1
Latin America	7.2	-0.3	-0.9	3.0	9.4	5.6	6.8	6.9	6.1	5.4
Western Europe	5.6	-0.2	-1.0	0.1	1.5	0.7	3.8	3.3	2.5	2.4
Emerging Europe	9.9	4.9	3.9	7.8	8.4	4.5	6.6	7.6	6.3	5.8
Africa & Middle East	5.2	0.2	3.2	3.8	5.1	3.9	4.6	4.4	4.3	4.3
Asia-Pacific	9.0	2.4	6.6	9.4	10.7	9.0	10.1	9.9	9.4	8.5
Total World Industrial Production	6.8	0.1	2.3	4.2	6.3	4.7	6.2	5.6	5.2	5.0
Consumer Prices										
North America	3.8	3.1	1.9	2.5	2.8	3.4	3.1	2.8	2.6	2.4
Latin America	8.3	7.1	13.6	15.8	8.3	8.8	7.3	7.2	7.6	7.1
Western Europe	2.4	2.7	2.5	2.4	2.3	2.5	2.6	2.3	2.3	2.3
Emerging Europe	21.5	16.9	10.9	9.4	8.7	9.3	7.2	7.0	6.5	5.5
Africa & Middle East	12.3	12.5	12.1	8.9	6.3	6.3	6.5	8.0	7.0	5.9
Asia-Pacific	1.3	2.0	1.3	1.9	3.2	2.8	3.2	3.5	3.3	3.2
Total World Inflation	4.2	4.0	3.3	3.5	3.6	3.7	3.6	4.3	<b>4</b> . I	3.9

Sources: IMF, OECD, various national statistical offices,, and ACC analysis.

TABLE 5
GLOBAL CHEMISTRY OUTLOOK

% Change Y/Y unless noted otherwise	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Business of Chemistry Output										
United States	1.5	-1.8	7.2	1.4	4.3	2.2	2.1	1.3	2.1	2.3
Canada	11.0	3.1	3.5	4.2	4.6	0.9	1.4	-0.3	1.6	2.8
Mexico	3.9	-3.2	-1.0	1.1	2.7	1.7	1.4	1.6	2.3	1.9
North America	2.1	-1.6	6.7	1.5	4.2	2.1	2.1	1.2	2.1	2.3
Brazil	1.5	-0.3	1.1	0.7	8.6	5.5	-0.4	1.2	2.5	2.8
Other	8.1	3.9	-0.3	7.1	10.3	7.2	6.7	3.9	4.2	4.1
Latin America	5.1	2.1	0.3	4.3	9.5	6.5	3.7	2.7	3.5	3.5
France	5.1	2.9	0.9	3.1	3.2	2.5	3.2	3.9	2.4	2.4
Germany	3.3	-1.5	2.9	0.6	2.3	5.4	3.9	5.1	3.0	2.6
Italy	2.2	-2.5	2.8	-1.3	1.0	-0.4	3.3	-1.3	1.6	2.0
United Kingdom	5.4	6.0	-0.1	0.8	3.5	0.0	3.3	-0.3	1.9	2.6
Belgium	11.9	-2.4	8.8	6.1	6.6	-4.2	2.1	1.2	1.9	2.5
Ireland	12.7	25.5	27.0	1.7	-3.2	-4.8	5.7	6.2	4.7	4.1
Netherlands	4.6	11.1	10.3	0.9	6.5	-1.2	4.5	2.8	2.8	3.1
Spain	-0.4	0.6	2.2	4.6	-0.9	0.2	3.6	1.5	2.6	2.9
Sweden	8.6	11.4	7.7	9.8	5.8	0.6	6.7	-8.3	3.1	3.2
Switzerland	9.1	4.8	5.9	8.0	5.3	7.9	10.0	3.7	4.7	3.3
Other	7.1	3.6	3.1	1.0	-1.2	5.6	0.9	2.0	2.2	2.1
Western Europe	4.9	2.7	4.2	2.1	2.5	1.8	4.0	2.3	2.7	2.7
Russia	14.0	6.9	5.9	5.5	7.0	2.8	2.1	7.2	4.5	3.9
Other	6.1	2.8	5.0	6.9	6.2	4.0	9.0	6.8	4.8	5.2
Emerging Europe	10.2	5.0	5.5	6.1	6.6	3.3	5.2	7.0	4.6	4.5
Africa & Middle East	5.9	7.1	16.0	7.9	15.6	6.8	7.5	4.7	5.6	5.7
Japan	1.8	0.2	-1.1	1.9	1.7	-0.3	-1.8	0.0	1.0	1.5
Asia-Pacific (ex Japan)	13.9	7.4	8.8	10.1	10.3	11.8	11.8	11.1	9.1	8.4
China	15.9	10.1	11.5	18.4	13.5	19.0	21.1	19.2	12.4	11.3
India	7.4	4.3	6.0	3.4	17.0	10.7	7.4	10.0	7.6	8.0
Australia	0.7	2.2	4.0	1.5	-3.5	-0.7	-7.9	1.2	3.8	3.6
Korea	37.7	23.2	15.0	1.2	5.3	6.9	2.4	4.5	8.2	6.6
Singapore	1.3	1.9	8.2	7.2	7.3	3.9	1.9	4.4	7.3	6.7
Taiwan	9.6	-5.9	1.1	10.0	5.8	-2.1	2.2	4.5	5.5	6.0
Other	2.2	-5.1	-2.0	5.6	8.6	9.0	2.6	4.2	5.0	4.9
Asia/Pacific	8.0	4.1	4.4	6.6	6.8	7.1	6.9	6.4	5.7	5.5
Total Output by Nation/Region	5.1	2.0	5.3	3.6	5.3	4.0	4.5	4.1	4.3	4.2
Other Chemistry Indicators										
Global Business of Chemistry Capital Spending (\$ billions)	\$113.5	\$111.7	\$117.0	\$125.0	\$145.2	\$166.3	\$190.6	\$220.2	\$252.7	\$283.8
% Change	-4.2%	-1.6%	4.7%	6.8%	16.2%	14.5%	14.6%	15.5%	14.8%	12.3%

Source: ACC

# APPENDIX TABLE I GLOBAL ECONOMIC GROWTH OUTLOOK

% Change Y/Y	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States	3.7	0.8	1.6	2.5	3.6	3.1	2.9	2.1	2.4	3.0
Canada	5.2	1.8	2.9	1.9	3.1	3.1	2.8	2.5	2.5	2.7
Mexico	6.6	0.0	0.8	1.4	4.2	2.8	4.8	3.0	3.6	3.6
Brazil	4.3	1.3	2.7	1.1	5.7	2.9	3.7	4.6	4.3	4.0
Argentina	-0.8	-4.4	-10.9	8.8	9.0	9.2	8.5	7.3	5.7	4.8
Chile	4.5	3.5	2.2	4.0	6.0	5.7	4.0	5.8	5.1	5.0
Colombia	2.9	1.5	1.9	3.9	4.9	4.7	6.8	6.2	5.1	4.5
Ecuador	2.8	5.3	4.2	3.6	8.0	6.0	3.9	2.8	3.0	3.0
Peru	3.0	0.2	5.0	4.0	5.1	6.7	7.6	7.2	6.1	5.1
Uruguay	-1.4	-3.4	-11.0	2.2	11.8	6.6	7.0	5.5	4.3	4.0
Venezuela	3.7	3.4	-8.9	-7.8	18.3	10.3	10.3	7.6	5.3	4.4
France	3.9	1.9	1.0	1.1	2.5	1.7	2.0	1.9	1.9	2.0
	3.1	1.2			1.1	0.8	2.9	2.6	2.2	
Germany			0.0	-0.3						2.1
Italy	3.6	1.8	0.3	0.0	1.2	0.1	1.9	1.7	1.4	1.5
United Kingdom	3.8	2.4	2.1	2.8	3.3	1.8	2.8	3.0	2.1	2.5
Belgium	3.9	0.7	1.4	1.0	2.8	1.4	3.0	2.5	2.1	2.1
Ireland	9.1	5.9	6.4	4.3	4.3	5.9	5.7	5.1	3.9	4.0
Netherlands	3.9	1.9	0.1	0.3	2.2	1.5	3.0	2.5	2.3	2.2
Spain	5.0	3.6	2.7	3.1	3.3	3.6	3.9	3.7	2.8	2.4
Sweden	4.3	1.1	2.0	1.7	4.1	2.9	4.2	3.6	3.1	2.7
Switzerland	3.6	1.2	0.4	-0.2	2.5	2.4	3.2	2.4	2.1	1.9
Austria	3.4	0.8	0.9	1.2	2.3	2.0	3.3	3.3	2.6	2.3
Denmark	3.5	0.7	0.5	0.4	2.1	3.1	3.5	1.8	1.7	1.9
Finland	5.0	2.6	1.6	1.8	3.7	2.9	5.0	3.9	3.0	2.7
Greece	4.5	4.5	3.9	4.9	4.7	3.7	4.3	3.8	3.5	3.2
Norway	3.3	2.0	1.5	1.0	3.9	2.7	2.8	3.3	2.9	2.4
Portugal	3.9	2.0	0.8	-0.7	1.5	0.5	1.3	1.8	1.9	2.1
Russia	10.0	5.1	4.7	7.3	7.2	6.4	6.7	7.2	6.3	5.7
Bulgaria	5.4	4.1	4.5	5.0	6.6	6.2	6.1	5.9	5.8	5.4
Czech Republic	3.6	2.5	1.9	3.6	4.6	6.5	6.4	5.5	4.7	5.1
Estonia	10.8	7.7	8.0	7.2	8.3	10.2	11.2	8.0	6.5	6.0
Hungary	5.2	4.1	4.4	4.2	4.8	4.2	3.9	2.3	3.1	3.8
	9.8	13.5	9.8	9.3	9.6	9.7	10.7	9.1	8.9	8.6
Kazakhstan	6.9			7.2				9.9		
Latvia		8.0	6.5		8.7	10.6	11.9		7.2	6.5
Lithuania	4.1	6.6	6.9	10.3	7.3	7.6	7.5	7.9	6.9	6.2
Poland	4.3	1.2	1.4	3.9	5.3	3.6	6.1	6.5	5.5	4.8
Romania	2.1	5.7	5.1	5.2	8.5	4.1	7.7	5.9	5.7	5.4
Slovak Republic	0.7	3.2	4.1	4.2	5.4	6.0	8.3	8.7	7.0	5.7
Slovenia	4.1	3.1	3.7	2.8	4.4	4.1	5.7	5.1	4.4	4.3
Ukraine	5.9	9.2	5.2	9.6	12.1	2.7	7.1	7.1	6.1	5.7
Egypt	5.4	3.5	3.2	3.2	4.1	4.5	6.8	6.9	6.9	6.1
Israel	8.9	-0.4	-0.6	2.3	5.2	5.3	5.2	5.0	4.2	4.2
South Africa	4.2	2.7	3.7	3.1	4.8	5.1	5.0	4.8	4.6	4.8
Turkey	7.4	-7.5	7.9	5.8	8.9	7.4	6.1	5.3	5.8	5.6
Japan	2.9	0.2	0.3	1.4	2.7	1.9	2.2	2.1	2.0	2.0
China	8.4	8.3	9.1	10.0	10.1	10.4	11.1	11.3	10.6	9.8
India	5.4	3.9	4.5	6.9	7.9	9.0	9.7	8.7	8.3	8.1
Australia	3.4	2.1	4.1	3.1	3.7	2.8	2.7	4.0	3.4	3.3
Korea	8.5	3.8	7.0	3.1	4.7	4.2	5.0	4.7	5.0	5.1
Singapore	10.1	-2.4	4.2	3.1	8.8	6.6	7.9	7.5	6.0	5.4
Taiwan	5.8	-2.2	4.6	3.5	6.2	4.1	4.7	4.3	4.4	4.6
Bangladesh	5.6	4.8	4.8	5.8	6.1	6.3	6.4	6.3	6.2	6.1
Hong Kong	10.0	0.6	1.8	3.2	8.6	7.5	6.9	5.8	5.4	5.0
	5.4	3.6	4.5	4.8	5.0	7.3 5.7	5.5	6. l	6.0	5.4
Indonesia Malaysia										
Malaysia	8.9	0.3	4.4	5.5	7.2	5.2	5.9	5.7	5.7	5.5
New Zealand	3.9	2.7	5.2	3.5	4.4	2.7	1.6	2.5	2.4	2.7
Pakistan	4.3	2.0	3.2	4.8	7.4	7.7	6.9	6.6	6.2	5.9
Philippines	6.0	1.8	4.4	4.9	6.4	4.9	5.4	6.4	5.6	5.2
Sri Lanka	6.0	-1.5	4.0	6.0	5.4	6.0	7.4	5.8	6.0	6.1
Thailand	4.8	2.2	5.3	7.1	6.3	4.5	5.0	4.2	4.8	4.9
Vietnam	6.8	6.9	7.1	7.3	7.8	8.4	8.2	8.2	8.0	7.7

# APPENDIX TABLE 2 GLOBAL INDUSTRIAL PRODUCTION OUTLOOK

% Change Y/Y	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States	4.3	-3.5	0.0	1.1	2.5	3.2	4.1	2.0	2.1	3.1
Canada	8.6	-4.0	1.6	0.1	2.1	1.7	-0.4	0.3	1.8	2.0
Mexico	5.9	-3.3	-0.1	-0.2	3.8	2.1	5.0	1.8	3.5	3.3
Brazil	6.6	1.6	2.7	0.0	8.1	3.4	2.9	4.8	4.2	4.1
Argentina	-0.3	-7.6	-10.5	16.2	10.7	8.0	8.3	6.7	5.7	4.4
Chile	5.8	5.3	1.5	1.7	7.6	3.4	2.1	5.3	4.9	4.4
Colombia	9.7	1.2	0.2	2.4	6.2	3.8	11.0	7.1	5.4	4.5
Ecuador	0.8	6.4	4.3	3.8	13.4	4.9	2.0	1.4	3.4	3.1
Peru	6.7	-0.8	4.2	2.2	6.9	6.9	9.5	7.0	6.1	5.9
Uruguay	-2.3	-6.I	-12.8	0.9	15.7	8.7	7.4	7.0	4.6	4.2
Venezuela	3.8	3.2	-11.8	-9.8	16.7	7.6	9.3	8.3	5.9	3.1
France	4.5	1.2	-11.0	-0.3	1.9	0.2	0.9	1.4	1.5	1.5
	4.9	-0.5	-1.2	0.1	2.5	2.8	5.9	5.0	3.0	
Germany										2.6
Italy	4.3	-1.0	-1.4	-0.6	-0.3	-0.8	2.6	1.3	1.3	1.4
United Kingdom	1.9	-1.5	-1.9	-0.3	0.8	-2.0	0.0	0.7	0.8	1.1
Belgium	4.9	-0.3	1.2	0.7	3.2	-0.2	5.1	3.2	2.2	2.1
Ireland	15.3	10.2	7.1	4.8	0.3	3.0	5.2	5.3	4.6	4.3
Netherlands	5.4	1.0	0.9	-1.4	4.1	-1.1	1.1	2.3	1.9	1.9
Spain	4.4	-1.5	0.2	1.4	1.6	0.7	3.9	3.3	2.3	2.5
Sweden	6.4	-0.5	1.3	2.5	3.2	2.2	5.2	4.3	3.2	2.5
Switzerland	8.6	-0.7	-5.5	0.3	4.0	3.1	7.9	5.7	4.3	3.2
Austria	9.1	2.9	0.7	2.0	6.2	4.4	8.2	6.8	4.1	2.9
Denmark	5.4	1.6	1.4	0.2	0.0	1.6	3.5	3.2	1.9	1.8
Finland	12.0	0.1	2.0	1.5	4.8	0.6	7.9	2.9	3.0	2.8
Greece	6.9	-1.5	0.8	0.2	0.7	-0.3	0.5	2.0	2.1	1.9
Norway	3.2	-1.6	0.9	-4.0	2.2	-0.8	-2.5	0.5	2.2	2.6
Portugal	0.5	3.1	-0.5	0.0	-2.3	0.0	2.8	1.9	1.7	2.1
Russia	11.8	5.0	3.8	7.0	7.3	4.0	3.9	6.1	5.0	4.7
Bulgaria	10.2	2.2	4.6	14.0	17.1	6.7	5.9	6.9	6.3	5.3
Czech Republic	5.4	6.8	8.6	6.4	9.7	6.7	9.7	9.1	6.8	8.0
Estonia	14.6	8.9	8.2	10.9	10.5	11.0	8.0	7.6	6.4	6.9
Hungary	18.2	3.6	2.7	6.4	7.4	6.9	10.0	8.6	7.2	5.9
Kazakhstan	25.2	21.7	14.6	8.7	14.0	10.2	6.6	7.2	8.4	9.4
Latvia	3.2	6.9	5.8	6.6	6.0	5.7	4.8	5.0	5.0	5.7
Lithuania	2.2	16.0	3.1	16.1	10.8	7.1	7.3	6.1	6.5	6.4
Poland	6.7	0.6	1.1	8.3	12.6	3.7	11.3	10.9	9.0	7.5
Romania	7.1	8.3	4.3	3.1	5.3	2.0	7.1	6.4	5.3	6.0
Slovak Republic	8.3	7.0	6.4	5.0	4.2	3.7	9.8	13.4	8.7	7.3
Slovenia	6.2	2.9	2.5	1.4	5.5	3.3	6.1	7.3	5.1	5.0
Ukraine	13.6	14.0	4.4	15.8	12.5	3.1	6.2	8.6	6.6	6.0
Egypt	6.5	3.5	3.0	2.3	1.6	3.7	10.5	8.0	6.7	6.1
Israel	10.0	-5.0	-1.9	-0.3	6.9	3.6	4.7	5.7	4.7	4.3
South Africa	3.6	2.9	4.5	-1.8	4.1	3.6	4.8	5.8	6.0	6.0
Turkey	6.0	-8.4	9.4	8.5	9.4	5.9	6.0	5.4	5.8	5.7
Japan	5.2	-6.5	-1.3	3.3	5.3	1.5	4.5	2.5	2.9	2.1
China	11.5	9.7	12.7	16.7	16.3	15.9	16.2	16.8	15.4	13.6
India	6.0	2.7	4.9	6.6	8.5	7.9	10.5	9.9	8.7	8.1
Australia	5.4	0.4	2.9	0.2	0.3	1.1	0.0	4.4	3.5	3.3
	17.2	0.3	8.3	5.3	10.1	5.8	10.8	6.0	6.7	6.5
Korea	17.2		10.7		10.1	9.5		6.9		
Singapore		-1.4		-6.6			11.9		6.6	7.0
Taiwan	6.9	-7.8	7.9	7.1	9.8	4.6	5.0	5.1	5.4	5.7
Bangladesh	8.9	2.6	7.3	4.8	9.9	13.1	9.0	7.5	6.4	6.0
Hong Kong	-0.5	-4.4	-9.7	-9.3	2.9	2.5	2.2	-0.2	0.6	0.7
Indonesia	6.1	4.2	3.3	5.5	3.3	1.3	-1.2	5.8	5.8	5.3
Malaysia	19.2	-4.2	4.6	9.3	11.7	4.1	5.0	3.1	5.4	6.0
New Zealand	3.8	-0.4	6.5	1.8	3.7	-2.7	-1.2	1.3	2.0	2.3
Pakistan	-2.8	10.3	3.1	17.9	14.1	14.5	9.7	6.0	5.6	5.6
Philippines	2.4	-5.7	-6.1	0.0	5.6	5.6	-2.3	4.5	4.6	5.0
Sri Lanka	7.5	-2.1	1.0	5.5	5.2	8.3	7.1	8.5	8.1	8.9
Thailand	6.7	2.7	9.0	14.0	11.7	9.1	7.4	6.1	5.7	6.2
Vietnam	12.7	12.7	14.5	16.0	16.0	17.2	17.0	14.0	12.7	13.3

# APPENDIX TABLE 3 GLOBAL CONSUMER INFLATION OUTLOOK

% Change Y/Y	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
United States	3.4	2.8	1.6	2.3	2.7	3.4	3.2	2.8	2.5	2.3
Canada	2.7	2.5	2.3	2.7	1.8	2.2	2.0	2.2	2.1	2.1
Mexico	9.5	6.4	5.0	4.5	4.7	4.0	3.6	3.7	3.6	3.3
Brazil	7.1	6.8	8.4	14.8	6.6	6.9	4.2	3.6	3.9	3.9
Argentina	-0.9	-1.1	25.9	13.4	4.4	9.6	10.9	9.4	10.4	9.8
Chile	3.8	3.6	2.5	2.8	1.1	3.1	3.4	4.1	3.5	3.0
Colombia	9.2	8.0	6.3	7.1	5.9	5.0	4.3	5.4	4.3	4.2
Ecuador	96.1	37.7	12.6	7.9	2.7	2.1	3.3	2.3	3.3	3.6
Peru	3.8	2.0	0.2	2.3	3.7	1.6	2.0	1.8	2.4	2.3
Uruguay	4.8	4.4	14.0	19.4	9.2	4.7	6.4	8.2	6.5	5.1
Venezuela	16.2	12.5	22.4	31.1	21.7	16.0	13.7	19.8	20.2	19.3
France	1.8	1.8	1.9	2.2	2.3	1.9	1.9	1.4	1.7	1.8
Germany	1.4	1.9	1.4	1.0	1.8	1.9	1.8	2.0	1.7	1.7
Italy	2.6	2.3	2.6	2.8	2.3	2.2	2.2	1.9	2.0	2.0
United Kingdom	0.9	1.2	1.3	1.4	1.3	2.0	2.3	2.2	2.0	2.0
	2.7	2.4	1.6	1.5	1.9	2.5	2.3	1.7	1.8	1.8
Belgium Ireland	5.2	4.0	4.7	4.0	2.3	2.3	2.3	3.7	2.8	2.5
	2.3				1.4	1.5	1.7	1.8		
Netherlands Seein		5.1	3.8	2.2					1.9	2.1
Spain	3.5	2.8	3.6	3.1	3.1	3.4	3.6	2.5	2.7	2.5
Sweden	1.3	2.7	1.9	2.3	1.0	0.8	1.5	1.8	2.1	2.0
Switzerland	1.6	1.0	0.6	0.6	0.8	1.2	1.0	0.7	1.1	1.4
Austria	2.0	2.3	1.7	1.3	2.0	2.1	1.7	1.9	1.9	1.8
Denmark	2.9	2.4	2.4	2.1	1.2	1.8	1.9	1.8	2.1	2.1
Finland	2.9	2.7	2.0	1.3	0.1	8.0	1.3	2.0	2.0	1.8
Greece	2.9	3.7	3.9	3.4	3.0	3.5	3.3	2.7	2.8	2.7
Norway	3.1	3.0	1.3	2.5	0.4	1.6	2.3	1.0	2.3	2.2
Portugal	2.8	4.4	3.7	3.3	2.5	2.1	3.0	2.3	2.2	2.2
Russia	20.8	21.5	15.8	13.7	10.9	12.7	9.7	8.5	7.6	6.8
Bulgaria	8.2	7.5	5.8	2.3	6.1	5.0	7.3	6.6	5.8	3.8
Czech Republic	3.8	4.7	1.8	0.1	2.8	1.8	2.5	2.8	3.8	3.1
Estonia	4.0	5.8	3.6	1.3	3.0	4.1	4.4	5.9	6.6	4.6
Hungary	9.8	9.2	5.3	4.6	6.8	3.6	3.9	7.5	4.2	3.1
Kazakhstan	13.3	8.4	5.9	6.4	6.9	7.6	8.6	8.2	7.7	6.5
Latvia	2.6	2.5	1.9	2.9	6.2	6.7	6.5	8.7	7.6	5.2
Lithuania	1.1	1.6	0.3	-1.1	1.2	2.7	3.8	4.9	4.8	3.9
Poland	10.1	5.5	1.9	0.8	3.5	2.1	1.0	2.4	2.9	2.7
Romania	45.7	34.5	22.5	15.3	11.9	9.0	6.6	4.4	4.8	4.2
Slovak Republic	12.0	7.1	3.3	8.5	7.5	2.8	4.4	2.4	2.3	2.9
Slovenia	8.8	8.4	7.5	5.6	3.6	2.5	2.5	2.8	2.8	2.6
Ukraine	28.2	12.0	0.8	5.2	9.0	13.5	9.0	10.9	9.1	7.4
Egypt	2.8	2.4	2.4	3.2	8.1	8.8	4.2	9.9	6.1	4.7
Israel	1.1	1.1	5.7	0.7	-0.4	1.3	2.1	0.2	2.5	2.4
South Africa	5.4	5.7	9.2	5.8	1.4	3.4	4.7	6.2	5.5	4.5
Turkey	55.0	54.2	45.1	25.3	8.6	8.2	9.6	8.5	6.2	5.2
Japan	-0.8	-0.7	-0.9	-0.3	0.0	-0.3	0.3	0.0	0.4	0.8
China	0.4	0.7	-0.8	1.2	3.9	1.8	1.5	4.4	3.4	2.9
India	4.0	3.8	4.3	3.8	3.8	4.2	6.1	5.6	5.1	5.4
Australia	4.5	4.4	3.0	2.8	2.3	2.7	3.5	2.4	2.8	2.6
Korea	2.3	4.1	2.8	3.5	3.6	2.8	2.2	2.5	2.7	2.8
Singapore	1.3	1.0	-0.4	0.5	1.7	0.5	1.0	1.4	1.5	1.2
Taiwan	1.3	0.0	-0.2	-0.3	1.6	2.3	0.6	1.2	1.6	1.8
Bangladesh	2.5	1.9	3.7	5.4	6.1	7.0	6.5	3.9	6.7	5.8
Hong Kong	-3.7	-1.6	-3.0	-2.6	-0.4	0.9	2.0	1.9	2.9	2.8
Indonesia	3.8	11.5	11.8	6.8	6.1	10.5	13.1	6.2	6.2	6.2
Malaysia	1.6	1.4	1.8	1.1	1.4	3.0	3.6	2.0	2.3	2.2
New Zealand	2.6	2.6	2.6	1.7	2.3	3.0	3.4	2.5	2.6	2.5
Pakistan	3.6	4.4	2.5	3.1	4.6	9.3	7.9	7.2	6.6	6.2
Philippines	4.0	6.8	2.9	3.5	6.0	7.6	6.2	2.8	3.8	4.5
Sri Lanka	1.5	12.1	10.2	2.6	7.9	10.6	9.5	6.5	5.3	4.6
Thailand	1.6	1.7	0.6	1.8	2.8	4.5	4.6	2.1	2.3	2.5
	-1.6	-0.4	4.0	3.2	7.7	8.3	7.5	7.5	7.2	6.3

### Methodology

This report presents an up-to-date assessment of current conditions and likely 2008 and 2009 prospects for the global business of chemistry, with particular emphasis on the United States. The analysis reflects the ACC Global Index of Business of Chemistry Activity and other economic data and publicly available information through early-November. The ACC Global Production Index measures the production volume of the business of chemistry for 33 key nations, sub-regions, and regions, all aggregated to the world total. The index is comparable to the Federal Reserve Board (FRB) production indices and features a similar base year where 2002=100. This index is developed from government industrial production indices for chemicals from over 65 nations accounting for about 97% of the total global business of chemistry. The ACC Global Index measures production activity generally consistent with the overall industry nomenclature of NAICS 325, the EU NACE 24, and the UN's ISIC 351 and 352 industries. That is, the index measures production of pharmaceuticals, soaps & detergents, personal care products, fertilizers, and other downstream products in addition to measuring inorganic chemicals, organic chemicals, plastic resins, synthetic fibers, synthetic rubber, adhesives and sealants, coatings, and other specialty chemicals.

In looking ahead, a model of global output for the business of chemistry in employed. Also taken into account are the

forecasts made by economists at the various national chemical associations in Europe (the expertise of whom ACC gratefully acknowledges) and from economic forecasting consultants and other institutions. Also gratefully acknowledged is the macroeconomic and chemical industry expertise of Oxford Economic Forecasting Ltd. (OEF), a leading provider of independent economic advice and consultancy services. OEF's Global Model is a quarterly linked international econometric model that provides an analyst with the ability to examine how economies react to shocks to the economic environment, perform scenario analyses, and produce forecasts. These were supplemented by forecasts provided by the Asian Development Bank, Global Insight, IMF, OECD, the WTO, and various banks. But in the end, the forecasts that are presented in this analysis are our own.

The ACC Global Index and the US chemical industry production data are available in spreadsheet. Annual data for Appendix tables 1, 2 and 3 are also available in spreadsheet as well

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