

ASIA-PACIFIC

Economic **BOOM CONTINUES**, but forecasts reflect concern

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IN 2006, the once-sleepy port of Macau became the world's gambling capital when gaming revenues in this southern China port exceeded those of the Las Vegas strip. Last month, residential land sold at auction by the Hong Kong government fetched \$5,400 per sq ft, the highest price ever paid in the city. In India's major cities, meanwhile, luxurious restaurants are opening that serve U.S. steaks for more than \$100 a plate and bottles of fine French wine for several times more.

As wealth spreads across Asia, so do worries that the prosperity will not last. In the past 10 years, the region has experienced four major economic setbacks: the Asian financial crisis of 1997-98, the bursting of the Internet bubble in 2000, the shock waves from the attacks on the World Trade Center and Pentagon in 2001, and the SARS health crisis in 2003. Most Asian countries were affected; the major exception was China, which mostly sailed through it all unscathed. That the region has enjoyed four uninterrupted years of strong and synchronized economic growth seems almost unnatural.

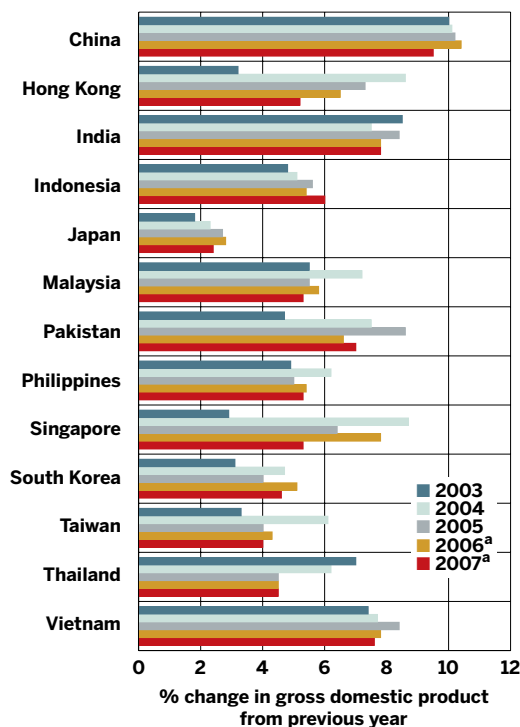
BASF provides an example of careful optimism about Asia in 2007. The giant company, with businesses spanning almost all sectors of the chemical industry, tells C&EN that "Asia will be the growth driver, especially China, where we are well-positioned." But the company adds that "uncertainties remain, such as geopolitical tensions as well as the development of the oil price and the U.S. dollar."

Asian petrochemical companies also exhibit contradictory feelings of euphoria and concern. The most optimistic firms are those from China and India and those that are well-positioned in China. The most pessimistic are found in Japan, although there is wide disparity in the sentiment of Japanese firms.

Mumbai-based Reliance Industries noted in its first-half results for the fiscal year ending March 31, 2007, that its sales increased 30% compared with the year-ear-

lier period and its net profit increased 10%. For its chemical business, which accounts for about a third of sales, Reliance reported a 32% improvement in margins despite having to close its large Hazira complex for several weeks because of a flood. Reliance attributed its performance to the high level of integration at its large facilities in India.

GDP
Rapid growth will moderate slightly this year



^a C&EN estimates. SOURCE: Asian Development Bank

In the first nine months of 2006, China Petroleum & Chemical Corp. (Sinopec) achieved a 51% improvement in profit compared with a year ago. In the third quarter, Sinopec's petrochemicals business achieved a 10% improvement in gross profit compared with the same quarter a year ago.

The company does not make forecasts about its future performance, but its actions show confidence. Near the end of 2006, Sinopec's board approved a \$375

million increase in the funds earmarked for the construction of new chemical plants.

Last June, Sinopec began building a 1 million-metric-ton-per-year ethylene cracker in the northeastern city of Tianjin, one of many plants the giant group is in the process of erecting. And in a sign other firms have confidence in the Chinese petrochemical market, BASF said in September that it is interested in spending more than \$500 million with Sinopec to expand their Nanjing joint venture.

Still, Sinopec's latest results announcement carried some words of caution. The company noted that the advantage provided by its position in the booming Chinese market is tempered by uncertainties over "market fluctuation and intensified competition."

Indeed, in the Middle East over the next two years, several major new petrochemical facilities that have targeted China as a major market are scheduled to open. Given that China's gross domestic product growth approached 11% in the third quarter of 2006, the Chinese economy appears likely to be headed for a slowdown.

IN JAPAN, the short-term business outlook of major chemical companies offers a cacophony of opinions. Most firms provided profit forecasts in November when they released their results for the first half of the fiscal year, which will end March 31. Several reported record half-year earnings. For the full year, most Japanese firms expect better profits than last year's—as much as 61% in the case of Teijin, a producer of textile fibers, high-performance fibers, and chemicals.

Shin-Etsu Chemical, on track to deliver its 12th straight year of record profits, is optimistic about the future performance of its main businesses, silicon wafers and polyvinyl chloride. The company is the world's largest

producer of both materials and is investing heavily to expand capacity. At the other extreme, petrochemical producer Mitsui Chemicals expects a "very severe environment" that will pressure its profitability.

Some patterns can be discerned in the results and forecasts of Japanese companies. Almost all express concern over the volatility of oil and gas prices. In addition, those that make materials for the electronics industry are enjoying bumper profits

from that business and are upbeat about future conditions.

Net profit at JSR, a synthetic rubber producer with a substantial electronic chemicals business, jumped 14% compared with a year ago. The company opened its first electronic materials plant in Taiwan only last June and, by November, had decided to expand it. At Asahi Kasei, operating profit from the electronic materials business surged 49% compared with the year-earlier period.

Japan is home to several of the world's largest producers of electronic materials, and conditions are booming for their customers. California-based iSuppli, a market research firm focused on electronics, predicts that sales of big thin-film-transistor liquid-crystal displays will be 24% higher in the first half of 2007 than in the first half of 2006. Most LCDs are made in Asia with materials that are largely supplied by Japanese companies.

The trade association Semiconductor Equipment & Manufacturers International compiled a survey last fall of the market expectations of silicon wafer manufacturers. Such firms expect that silicon wafer shipments will grow 10% per year on average from 2006 to 2009.

Several Japanese companies credited the strength of their latest results on the enduring recovery of the Japanese economy. In an economic outlook published in November, the Organization for Economic Cooperation & Development noted optimistically that "the current economic recovery, the longest in Japan's postwar history, has matured into a self-sustained expansion driven by private domestic demand." Companies have been hiring more workers in Japan, thus contributing to a boost in consumption that further fuels economic activity.

Japanese firms disagree in their assessment of the outlook for the Chinese econo-

SOUTH KOREA						
Most major chemicals enjoyed some improvement last year						
THOUSANDS OF METRIC TONS	2002	2003	2004	2005	2006 ^a	CHANGE 2005-06
INORGANIC CHEMICALS						
Carbon black	460	465	474	472	485	2.8%
Sodium hydroxide	1,340	1,365	1,508	1,455	1,472	1.2
ORGANIC CHEMICALS						
Benzene	2,852	3,246	3,462	3,594	3,685	2.5
Butadiene	816	860	917	939	967	3.0
Ethylene	5,636	5,872	5,945	6,058	6,067	0.1
Propylene	3,557	3,753	3,892	3,945	4,156	5.3
Vinyl chloride	1,416	1,441	1,498	1,501	1,514	0.9
PLASTICS						
Acrylonitrile-butadiene-styrene	1,120	1,143	1,105	980	1,086	10.8
Polyethylene, high density	1,871	1,925	1,882	1,949	1,939	-0.5
Polyethylene, low density	1,624	1,627	1,707	1,744	1,745	0.0
Polypropylene	2,622	2,811	2,930	3,013	3,047	1.1
Polystyrene	1,354	1,427	1,176	1,093	1,022	-6.5
Polyvinyl chloride	1,244	1,278	1,306	1,184	1,201	1.4
FORMULATED PRODUCTS						
Paint	618	693	749	705	760	7.8
Composite fertilizers	2,105	2,207	2,255	2,349	2,210	-5.9
Synthetic detergents	450	452	466	494	495	0.2

^a C&EN estimates. SOURCE: Korea National Statistical Office

my. China may have an economy one-third the size of Japan's, but it is a major importer of chemicals and a sizable number of Japanese firms own plants there. Teijin, for example, expects that Chinese growth will remain strong enough to favorably impact its results. But Mitsubishi Chemical expects a slowdown in China.

In its latest forecast for Asia, the Asian Development Bank (ADB) notes that the Chinese economy grew 11% in the second quarter of 2006, its fastest pace in 12 years. ADB says conditions in the global economy continue to favor China's exports and that inflation in China remains tame despite the high growth. The low inflation rate is

partly the result of continual production capacity expansion on the part of Chinese companies.

But unless Chinese companies slow the pace of capital spending, ADB points out, China could develop a serious overcapacity problem that would derail its economic progress. The bank notes that China's central authorities do not have many tools at their disposal to control the runaway pace of the economy and that "structural reforms" will be needed to implement effective control mechanisms.

And China's central government in Beijing may not be interested in slowing the economy all that much anyway, ADB notes.

CHINA TRADE										
Imports of chemicals grew 8% overall, but organics progressed at half that rate										
\$ MILLIONS	2003		2004		2005		2006 ^a		CHANGE 2005-06	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Inorganic chemicals ^b	\$3,595	\$2,729	\$4,840	\$3,961	\$6,944	\$4,816	\$7,371	\$6,157	6.2%	27.9%
Organic chemicals	7,140	16,007	9,092	23,846	12,120	28,020	15,222	29,127	25.6	4.0
Pharmaceutical products	913	1,392	1,100	1,572	1,364	1,959	1,485	2,325	8.8	18.7
Fertilizers	800	1,763	1,309	2,288	1,011	3,051	1,022	2,289	1.0	-25.0
Dyes & pigments	1,527	2,583	1,927	2,975	2,483	3,081	2,954	3,462	19.0	12.4
ALL CHEMICALS	\$18,531	\$31,791	\$24,580	\$42,602	\$31,853	\$50,578	\$36,773	\$54,830	15.4%	8.4%

^a C&EN estimates. ^b Includes compounds of precious metals and rare earths. SOURCE: Customs General Administration of the People's Republic of China

JAPAN

Production of most major chemicals declined, especially for phenol-based products because of maintenance work

THOUSANDS OF METRIC TONS UNLESS OTHERWISE INDICATED	2002	2003	2004	2005	2006 ^a	CHANGE 2005-06
INORGANIC CHEMICALS						
Ammonia	1,450	1,291	1,340	1,318	1,316	-0.2%
Ammonium sulfate ^b	1,564	1,570	1,526	1,458	1,457	-0.1
Carbon black	755	788	804	805	825	2.5
Chlorine, liquid	754	723	619	601	579	-3.7
Hydrochloric acid	2,317	2,363	2,324	2,276	2,281	0.2
Hydrogen peroxide	167	176	196	197	211	7.1
Nitrogen ^c	10,455	10,835	11,281	11,435	11,890	4.0
Oxygen ^c	10,720	11,250	11,278	11,371	11,708	3.0
Sodium hydroxide	4,271	4,369	4,493	4,552	4,399	-3.4
Sodium silicate	622	596	577	546	517	-5.3
Sulfuric acid	6,763	6,534	6,444	6,546	6,984	6.7
Titanium dioxide	240	253	253	259	244	-5.8
ORGANIC CHEMICALS						
Acetic acid	569	592	589	599	585	-2.3
Acetone	472	492	539	546	516	-5.5
Acrylonitrile	708	780	711	742	653	-12.0
Benzene ^d	4,313	4,551	4,758	4,980	4,726	-5.1
Butadiene	993	1,062	1,041	1,040	981	-5.7
Butanol	476	519	506	513	499	-2.7
Caprolactam	508	530	503	458	485	5.9
Cyclohexane	607	685	676	723	746	3.2
Ethylene	7,152	7,367	7,570	7,618	7,406	-2.8
Ethylene dichloride	3,352	3,463	3,594	3,689	3,517	-4.7
Ethylene glycol	733	814	786	841	766	-8.9
Ethylene oxide	868	939	941	1,005	973	-3.2
Octanol	302	306	307	279	265	-5.0
Phenol	891	926	966	938	823	-12.3
Phthalate plasticizers	377	382	357	315	281	-10.8
Phthalic anhydride	262	262	257	239	174	-27.2
Polypropylene glycol	299	314	346	339	336	-0.9
Propylene	5,309	5,610	5,767	6,030	5,966	-1.1
Purified terephthalic acid	1,624	1,443	1,531	1,472	1,491	1.3
Styrene	3,016	3,201	3,345	3,392	3,318	-2.2
Toluene ^d	1,548	1,584	1,634	1,676	1,614	-3.7
Toluene diisocyanate	223	230	245	216	219	1.4
Xylene ^d	4,900	5,213	5,395	5,570	5,598	0.5
p-Xylene	2,920	3,097	3,164	3,358	3,384	0.8
PLASTICS						
Epoxy	201	195	215	211	226	7.1
Phenolic resins	242	261	287	280	277	-1.1
Polycarbonate	386	409	411	431	407	-5.6
Polyethylene	3,176	3,165	3,238	3,240	3,117	-3.8
Polyethylene, high density	1,181	1,169	1,172	1,129	1,041	-7.8
Polyethylene, low density	1,789	1,795	1,847	1,899	1,855	-2.3
Polyethylene terephthalate	1,211	1,076	1,195	1,126	1,117	-0.8
Polypropylene	2,641	2,751	2,908	3,063	2,986	-2.5
Polystyrene	1,837	1,801	1,824	1,734	1,705	-1.7
Polyvinyl chloride	2,225	2,164	2,153	2,151	2,074	-3.6
SYNTHETIC RUBBER						
	1,522	1,577	1,616	1,627	1,572	-3.4

^a C&EN estimates. ^b Agricultural and nonagricultural use. ^c Millions of cubic meters. ^d Petroleum and nonpetroleum sources. **SOURCE:** Ministry of Economy, Trade & Industry

“Creating jobs and reducing the widening income gaps remain high priorities and require growth,” it says. ADB predicts that China’s economy will grow more than 9% in 2007, but it is not sure how accurate this forecast will turn out to be. The major uncertainty, the bank says, is how decisive Beijing will be in its efforts to rein in growth. Growth could well turn out to be higher without contraction measures.

China’s chemical trade patterns are developing in a way that could have a deep impact on the global chemical industry. If the official numbers are to be believed—and that is a big if with Chinese statistics—the country’s trade deficit in chemicals is shrinking. Chinese chemical exports grew 15% last year, while imports grew just 8%. Looked at a different way, China increased its chemical imports by \$8 billion in 2005 but by only about half that amount in 2006.

Although Chinese chemical statistics can be suspect, at least they exist, whereas in India, hard numbers are difficult to come by. General economic indicators show that India is clearly experiencing a boom. But these domestic conditions are not necessarily beneficial to Indian companies that make fine chemicals and bulk pharmaceuticals, the two classes of chemicals for which Indians are best known internationally.

In its second-quarter results for the fiscal year ending March 31, 2007, Dr. Reddy’s Laboratories posted a 13% decrease in its sales of active pharmaceutical ingredients in India compared with the same period last year. The Hyderabad firm, however, had a 55% increase in its foreign sales of active pharmaceutical ingredients in the same period.

Overall, the company achieved a 214% increase in net income on the back of a 245% surge in global sales. Like other Indian companies, Dr. Reddy’s did not provide a near-term financial forecast.

According to ADB, Indian manufacturers are, like Dr. Reddy’s, experiencing strong export growth. In the four years up to 2006, Indian exports grew by 20% annually. In the first quarter of 2006, the growth slackened a bit to 17%.

ADB forecasts that the Indian economy will grow almost 8% in 2007 but adds that India could fail to make it happen. ADB says there is a good chance that the central bank will raise interest rates, to the detriment of investment. Furthermore, the central government may succumb to popular pressure and back off from a plan to phase out fuel subsidies, a failure that would reduce its

CORPORATE PERFORMANCE

Most companies expect profit growth, but their assessments of future conditions vary widely

	NET PROFIT TO SEPT. 30, 2006		EXPECTED FULL-YEAR PROFIT ^a		COMPANY OUTLOOK ^a
	\$ MILLIONS	CHANGE FROM 2005 PERIOD	\$ MILLIONS	CHANGE FROM 2005 PERIOD	
Asahi Kasei ^b (Japan)	\$245	13.9%	\$542	7.3%	Cost-cutting will sustain profits. Polymer margins will be pressured. Total sales growth will moderate.
Dainippon Ink ^b (Japan)	90	nm	186	316.0	Expects strong performance in its printing inks and environmentally friendly resins businesses.
JSR ^b (Japan)	147	13.6	301	16.2	Will cut costs and develop new rubbers and electronic materials to offset rising raw material prices.
Mitsubishi Chemical ^b (Japan)	525	34.5	831	14.5	High naphtha prices and economic slowdowns in China and the U.S. will pose challenges.
Mitsui Chemicals ^b (Japan)	172	18.0	374	10.3	Expects a "very severe environment" due to global economic slow-down and rising costs.
Ranbaxy ^c (India)	73	74.8	na	na	Optimistic about growth in global sales.
Reliance ^b (India)	1,144	9.7	na	na	Enjoying strong demand in the local market.
Shin-Etsu Chemical ^b (Japan)	635	34.7	1,271	30.4	Japanese recovery will continue, but uncertain about the U.S. economy and raw material prices.
Sinopec ^c (China)	4,280	27.7	na	na	Is expanding production facilities to meet increasing Chinese demand.
Sumitomo Chemical ^b (Japan)	452	35.4	771	0.3	Gain on asset sales will more than make up for lower income in the electronic materials business.
Takeda ^b (Japan)	1,349	-12.2	2,627	-1.0	Sales and raw margins are rising, but so are R&D costs.
Teijin ^b (Japan)	163	37.2	339	61.0	Expects strength in the U.S., Japanese, and Chinese economies, but concerned about oil prices.
Toray ^b (Japan)	238	67.5	402	-19.6	Japanese growth will continue, but other markets may weaken.

NOTE: Profits were converted at the exchange rate on Sept. 30, 2006: \$1.00 U.S. = 117.99 Japanese yen, 45.95 Indian rupees, and 7.9 Chinese renminbi. **a** Companies' own assessments. **b** Based on fiscal first half. **c** Based on fiscal first three quarters. **na** = not available. **nm** = not meaningful.

ability to invest in the additional infrastructure that industry sorely needs. Unlike in China, where ADB's uncertainty has an upside bias, in India, ADB acknowledges that growth could be lower than its forecast.

Caveats are an integral part of forecasts. But whether the forecast is made by a com-

pany or by a public organization, for 2007 there appears to be far less certainty than in previous years. A record 15% single-day drop in the value of shares listed on Bangkok's stock exchange in December provided some indication of investors' edginess.

In the Asian chemical industry in 2007,

companies are optimistic of achieving positive results. But after four years without a major crisis, they also live in fear of future sharp economic changes ranging anywhere from swings in currency exchange rates to slowdowns in the U.S. or Chinese economies to resurgent buoyancy in oil prices. ■

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