

FOREIGN TRADE GROWS IN MOST AREAS

The value of chemical **TRADE** increased, and often, the trade balance improved

IT WAS A GOOD YEAR for foreign trade, as it was for many of the measures of chemical industry health. Exports and imports generally rose, and often, exports increased more than imports, either widening a trade surplus or cutting a deficit.

In the U.S., total chemical trade showed double-digit growth for both exports and imports. The value of exports, according to Commerce Department data, rose 12.6% to \$138.6 billion in 2006, as imports of chemicals into the country improved 11.3% to \$142.8 billion. The result was a \$972.0 million reduction in the chemical trade deficit to \$4.20 billion.

Once again, the U.S. chemical trade balance was largely hurt by two industry sectors: pharmaceuticals and organic chemicals. Pharmaceuticals posted a deficit of \$16.8 billion, and the organic chemicals sector, which has a large pharmaceutical intermediates component, had a deficit of \$11.9 billion. Excluding pharmaceuticals, the remainder of the chemical industry posted a surplus of \$12.7 billion, despite modest deficits in inorganic chemicals and fertilizers.

Canadian chemical exports rose 7.7% in 2006 to \$25.5 billion, while im-

ports increased 4.6% to \$34.5 billion, making a deficit of \$8.97 billion—better than the \$9.27 billion shortfall in 2005.

The European Union's trade surplus in chemicals increased 11.0%, according to the European Chemical Industry Council. CEFIC economists say the increase in the trade surplus with the North American Free Trade Agreement area was most remarkable.

Of the EU's seven major chemical-producing countries, only Italy and Spain showed deficits in the chemical trade balance. But even in those two countries, the increase in trade was impressive. Spain's exports rose 12.0% to \$24.9 billion, and imports increased 5.8% to \$34.7 billion. Spain's deficit was down to \$9.86 billion from \$10.6 billion in 2005.

Italy's trade deficit increased to \$15.0 billion from \$13.3 billion in 2005, as exports rose 8.0% to \$40.8 billion, while imports increased 9.1% to \$55.8 billion.

Germany had the most impressive growth among the seven countries. Its exports increased 15.3% to \$150.2 billion and imports increased 15.2% to \$105.9 billion. Germany is the largest trader among the seven countries, and its chemical

trade surplus is also the largest. In 2006, Germany's surplus rose 15.7% to \$44.3 billion.

Japan's foreign trade also was very healthy. In 2006, exports totaled \$74.2 billion, an 8.9% increase from the previous year. Meanwhile, imports rose 9.1% to \$49.4 billion. But the greater increase in imports was not enough to stall improvement in the country's total chemical trade surplus, which rose 8.7% to \$24.9 billion.

Until 2005, organic chemicals were Japan's largest chemical export group, but last year, they were replaced by synthetic resins. In 2006, exports of resins rose 12.7% to \$19.6 billion. Exports of organic chemicals rose just 3.9% to \$18.6 billion.

Synthetic resins imports increased 10.1% to \$9.43 billion, while imports of organic chemicals rose 6.7% to \$12.3 billion. Thus, the trade surplus for resins increased 15.1% to \$10.2 billion, or 41% of the country's total chemical trade surplus. Meanwhile, the organic chemicals surplus fell 1.0% to \$6.33 billion.

China continued to absorb chemicals from around the world. Its imports surged by 11.1% to \$56.2 billion. Chinese chemical exports rose 18.5% to \$37.8 billion.

The organic chemicals sector is where China incurred its largest chemical trade deficit, but it's also where the country's exports are growing fastest. China imported \$29.9 billion worth of organics in 2006 versus the \$15.5 billion exported. But in percentage terms, exports of organics increased by 28.1%, whereas imports were up just 6.6%.

U.S. TOTAL TRADE

Chemical industry kept the number two spot among exporting sectors

\$ BILLIONS	U.S. EXPORTS				U.S. IMPORTS			
	2003	2004	2005	2006	2003	2004	2005	2006
Machinery & transport equipment	\$351.8	\$393.3	\$433.7	\$494.5	\$523.6	\$596.8	\$649.9	\$709.8
Miscellaneous manufactures	84.9	95.7	103.8	116.0	218.9	241.2	259.8	276.4
Chemicals	94.2	112.9	123.1	138.6	101.1	112.9	128.3	142.8
Manufactured goods classified by material	67.7	78.7	89.2	103.5	132.9	170.2	190.8	223.0
Food & live animals	43.3	45.5	48.3	54.3	42.9	47.0	51.4	56.1
Crude materials, inedible (except fuels)	33.5	37.0	41.2	50.1	20.0	26.3	28.6	30.4
Mineral fuels & lubricants	14.0	18.9	26.4	34.9	155.6	205.9	286.4	333.5
Beverages & tobacco	4.8	4.8	4.5	5.1	12.0	12.7	13.9	15.8
Animal & vegetable oils, fats & waxes	2.0	2.0	1.8	2.1	1.6	2.3	2.4	2.9
Other	27.5	29.1	32.5	38.2	50.8	54.3	59.5	64.4
TOTAL	\$723.7	\$817.9	\$904.5	\$1,037.3	\$1,259.4	\$1,469.6	\$1,671.0	\$1,855.1

NOTE: Totals may not add because of rounding. SOURCE: Department of Commerce

TRADE

U.S. CHEMICAL TRADE, BY REGION

Exports grew strongly, backed by trade with Europe and Latin America

\$ MILLIONS	2003		2004		2005		2006		CHANGE, 2005-06	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Europe	\$30,796	\$61,304	\$36,896	\$67,267	\$39,853	\$73,136	\$45,398	\$79,653	13.9%	8.9%
Canada	17,891	13,492	20,053	16,674	22,413	19,727	24,583	22,172	9.7	12.4
Latin America	18,030	5,220	22,484	6,901	25,459	8,616	30,064	10,385	18.1	20.5
Japan	6,804	8,013	7,702	8,325	8,166	8,500	8,653	8,029	6.0	-5.5
China-Vietnam	3,731	3,029	4,831	3,770	5,549	5,216	6,402	6,286	15.4	20.5
Rest of Asia	12,587	6,259	15,442	6,276	15,904	8,023	17,095	10,589	7.5	32.0
Australia	1,809	526	2,189	587	2,435	620	2,400	755	-1.4	21.8
Middle East	1,392	2,249	1,789	2,481	1,848	3,602	2,057	4,052	11.3	12.5
Africa	736	496	910	558	983	747	1,206	686	22.7	-8.2
Other	377	462	564	103	508	100	720	168	41.7	68.0
TOTAL	\$94,153	\$101,050	\$112,860	\$112,942	\$123,118	\$128,287	\$138,578	\$142,775	12.6%	11.3%

NOTE: Totals may not sum because of rounding. SOURCE: Department of Commerce

EUROPE CHEMICAL TRADE

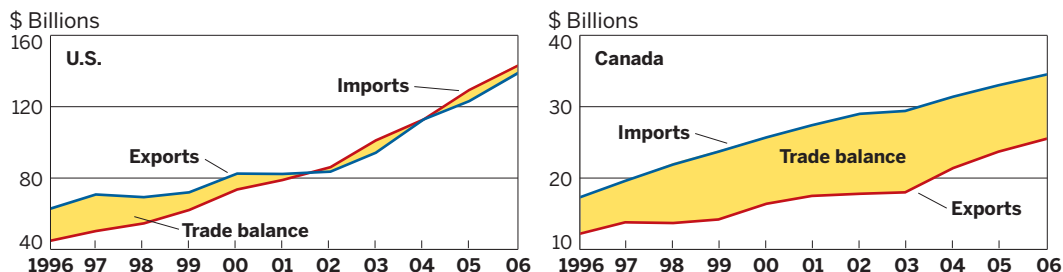
Rebound in German economy spurred highest growth in imports, exports

\$ MILLIONS	2003		2004		2005		2006		CHANGE, 2005-06	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Belgium	\$85,476	\$69,129	\$93,947	\$76,799	\$105,190	\$88,594	\$112,143	\$96,107	6.6%	8.5%
France	65,671	52,976	69,187	55,551	73,368	60,679	78,649	63,713	7.2	5.0
Germany	108,499	74,005	124,773	83,922	130,278	91,961	150,253	105,906	15.3	15.2
Italy	32,738	45,006	34,136	47,820	37,815	51,131	40,830	55,780	8.0	9.1
Netherlands	48,788	31,429	55,111	35,924	59,926	40,830	66,710	45,604	11.3	11.7
Spain	18,951	29,228	19,882	30,669	22,215	32,820	24,875	34,734	12.0	5.8
U.K.	83,867	69,002	58,941	50,630	61,278	52,911	68,552	56,345	11.9	6.5

NOTE: Monetary statistics for all years were converted to U.S. dollars at the 2006 average exchange rates of \$1.00 U.S. = 0.796 euros and 0.542 pounds sterling. SOURCES: European Chemical Industry Council, national agencies

NORTH AMERICAN CHEMICALS

Trade gap narrowed slightly for both U.S. and Canada



NOTE: Canadian trade for all years was converted at the 2006 average exchange rate of \$1.00 U.S. = \$1.134 Canadian. SOURCES: Department of Commerce, Industry Canada, Statistics Canada

U.S. CHEMICAL TRADE, BY PRODUCT

Growth in exports exceeded that of imports in most categories

\$ MILLIONS	2003		2004		2005		2006		CHANGE, 2005-06	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Organic chemicals	\$20,451	\$32,876	\$26,377	\$35,212	\$26,836	\$38,140	\$30,401	\$42,301	13.3%	10.9%
Plastics in primary form	15,127	7,366	18,512	8,654	21,458	11,078	24,444	11,969	13.9	8.0
Medicinals & pharmaceuticals	19,209	31,516	23,982	35,105	25,952	39,039	29,109	45,957	12.2	17.7
Inorganic chemicals	5,756	7,419	6,440	8,273	7,854	10,169	9,219	11,391	17.4	12.0
Plastics in nonprimary form	6,504	4,794	7,252	5,570	7,992	6,314	8,744	6,845	9.4	8.4
Perfume, toilet & cleaning materials	6,857	5,611	7,745	6,951	8,409	7,926	9,495	8,332	12.9	5.1
Dyeing, tanning & coloring materials	4,282	2,481	4,690	2,669	5,018	2,970	5,461	3,055	8.8	2.9
Fertilizers	2,552	2,130	2,846	2,530	3,203	3,699	3,170	3,441	-1.0	-7.0
Other	13,415	6,857	15,016	7,978	16,398	8,952	18,537	9,484	13.0	5.9
TOTAL	\$94,153	\$101,050	\$112,860	\$112,942	\$123,120	\$128,287	\$138,580	\$142,775	12.6%	11.3%

NOTE: Totals may not sum because of rounding. SOURCE: Department of Commerce

CANADA CHEMICAL TRADE, BY PRODUCT

Exports rose more than imports did in 2006, especially in trading with the U.S.

\$ MILLIONS	2003		2004		2005		2006		CHANGE, 2005-06	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Basic chemicals	\$5,439.2	\$6,681.7	\$7,073.2	\$7,754.9	\$8,275.1	\$8,250.4	\$8,941.8	\$8,756.6	8.1%	6.1%
Resins, synthetic rubber & fibers	5,361.6	5,567.9	6,039.7	5,901.2	6,575.0	6,478.8	6,812.2	6,399.5	3.6	-1.2
Pesticides, fertilizers & other agricultural chemicals	1,013.2	1,347.4	1,240.7	1,309.5	1,472.7	1,339.5	1,379.2	1,361.6	-6.3	1.6
Pharmaceuticals & medicine	2,999.1	7,975.3	3,537.0	8,425.9	3,824.5	8,840.4	4,798.9	9,854.5	25.5	11.5
Other chemical products	3,174.6	7,775.1	3,525.6	7,970.0	3,550.3	8,060.8	3,583.8	8,117.3	0.9	0.7
TOTAL	\$17,987.7	\$29,347.4	\$21,416.2	\$31,360.7	\$23,696.6	\$32,970.0	\$25,516.8	\$34,489.4	7.7%	4.6%
TOTAL WITH U.S.	\$14,959.4	\$20,123.5	\$17,355.4	\$20,975.3	\$18,860.7	\$21,543.2	\$20,039.7	\$21,657.8	6.3%	0.5%
U.S. SHARE	83.2%	68.6%	81.0%	66.9%	79.6%	65.3%	78.5%	62.8%		

NOTE: Monetary statistics for all years were converted at the 2006 average exchange rate of \$1.00 U.S. = \$1.134 Canadian.
SOURCES: Statistics Canada, Industry Canada

ASIA CHEMICAL TRADE, BY PRODUCT

South Korea experienced robust overall growth in its chemical trade; in Japan, inorganics surged

\$ MILLIONS	2003		2004		2005		2006		CHANGE, 2005-06	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
JAPAN										
Organic chemicals	\$13,458	\$9,323	\$16,508	\$10,710	\$17,883	\$11,489	\$18,589	\$12,260	3.9%	6.7%
Inorganic chemicals	2,295	3,468	2,708	4,339	2,954	4,754	3,444	5,522	16.6	16.2
Synthetic resins	12,197	6,311	15,385	7,518	17,428	8,566	19,637	9,433	12.7	10.1
Photographic materials	4,104	403	4,605	325	4,681	319	4,703	365	0.5	14.4
Fertilizers	86	530	103	642	110	711	105	728	-4.5	2.4
Dyes & pigments	2,430	950	2,996	1,037	3,135	1,084	3,384	1,163	7.9	7.3
Cosmetics	785	1,809	928	2,121	977	2,129	1,025	2,002	4.9	-6.0
Rubber	6,879	2,259	7,875	2,834	8,584	3,219	9,243	4,099	7.7	27.3
Other	9,101	9,923	11,412	11,434	12,405	12,964	14,101	13,785	13.7	6.3
TOTAL	\$51,335	\$34,976	\$62,520	\$40,960	\$68,157	\$45,235	\$74,231	\$49,357	8.9%	9.1%
SOUTH KOREA										
Chemicals & chemical products	\$16,936	\$13,482	\$23,126	\$20,655	\$27,745	\$24,502	\$31,806	\$27,573	14.6%	12.5%
Petrochemicals (a)	11,917	5,821	17,015	8,015	20,811	9,507	24,099	10,388	15.8	9.3

a Defined as synthetic resins, synthetic fiber raw materials, and synthetic rubber.

SOURCES: Japan Chemical Importers & Exporters Association; Korea National Statistical Office, Republic of Korea; Korea Petrochemical Industry Association

CHINA CHEMICAL TRADE, BY PRODUCT

Exports of organics and dyes grow faster than imports

\$ MILLIONS	2003		2004		2005		2006		CHANGE, 2005-06	
	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS	EXPORTS	IMPORTS
Inorganic chemicals	\$3,595	\$2,729	\$4,840	\$3,961	\$6,944	\$4,812	\$7,625	\$6,288	9.8%	30.7%
Organic chemicals	7,131	16,006	9,092	23,846	12,133	28,019	15,543	29,857	28.1	6.6
Pharmaceutical products	918	1,392	1,100	1,572	1,364	1,959	1,531	2,401	12.2	22.6
Fertilizers	800	1,763	1,309	2,288	1,011	3,051	1,169	2,484	15.6	-18.6
Dyes & pigments	1,526	2,583	1,927	2,975	2,487	3,081	3,000	3,507	20.6	13.8
Other (a)	4,557	7,316	6,312	7,960	7,914	9,661	8,885	11,684	12.3	20.9
TOTAL	\$18,527	\$31,789	\$24,580	\$42,602	\$31,853	\$50,583	\$37,753	\$56,221	18.5%	11.1%

a Calculated by C&EN. SOURCE: Customs General Administration of the People's Republic of China

U.S. CHEMICAL TRADE BALANCE, BY PRODUCT

Trade deficit narrowed, thanks to improvements in plastics, perfumery, and coloring segments

\$ MILLIONS	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Organic chemicals	\$192	-\$86	-\$3,119	-\$6,106	-\$9,632	-\$12,680	-\$13,373	-\$12,425	-\$8,835	-\$11,304	-\$11,900
Plastics in primary form	6,539	7,220	6,476	6,330	7,439	7,189	7,471	7,761	9,858	10,380	12,475
Medicinals & pharmaceuticals	254	-507	-1,224	-2,295	-1,572	-3,203	-8,570	-12,307	-11,123	-13,087	-16,848
Inorganic chemicals	-205	292	-276	-472	-582	-463	-406	-1,663	-1,833	-2,315	-2,172
Plastics in nonprimary form	1,699	2,114	1,834	1,529	1,983	1,715	1,656	1,710	1,682	1,678	1,899
Perfume, toiletries & cleaning materials	1,995	2,343	1,995	1,863	2,005	2,278	1,940	1,246	794	483	1,163
Dyeing, tanning & coloring materials	606	869	1,058	1,055	1,529	1,399	1,619	1,801	2,021	2,048	2,406
Fertilizers	1,676	1,696	1,714	1,618	796	357	643	422	316	-496	-271
Other	5,305	6,560	6,132	6,261	6,944	6,857	6,556	6,558	7,038	7,446	9,053
TOTAL	\$18,061	\$20,501	\$14,590	\$9,783	\$8,910	\$3,449	-\$2,464	-\$6,897	-\$82	-\$5,167	-\$4,195

NOTE: Totals may not add because of rounding. SOURCE: Department of Commerce

CANADA CHEMICAL TRADE BALANCE, BY PRODUCT

Surpluses of basic chemicals and resins soared

\$ MILLIONS	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Basic chemicals	-\$370.4	-\$743.4	-\$1,330.7	-\$1,650.8	-\$888.9	-\$1,112.0	-\$1,045.9	-\$1,242.5	-\$680.8	\$23.8	\$185.2
Resins, synthetic rubber & fibers	-203.7	-74.1	-512.3	-617.3	-328.0	-51.1	-368.6	-207.2	137.6	96.1	412.7
Pesticides, fertilizers & other agricultural chemicals	-81.1	-101.4	-364.2	-118.2	-158.7	-306.9	-222.2	-334.2	-67.9	133.2	17.6
Pharmaceuticals & medicine	-1,752.2	-1,738.1	-2,322.8	-3,002.6	-3,623.5	-4,177.2	-4,866.8	-4,976.2	-4,888.9	-5,015.9	-5,055.6
Other chemical products	-2,725.7	-3,163.1	-3,737.2	-4,134.0	-4,313.9	-4,264.6	-4,710.8	-4,600.5	-4,444.4	-4,510.6	-4,533.5
TOTAL	-\$5,133.2	-\$5,820.1	-\$8,267.2	-\$9,522.9	-\$9,313.1	-\$9,911.8	-\$11,214.3	-\$11,360.7	-\$9,944.4	-\$9,273.4	-\$8,973.5

NOTE: Monetary statistics for all years were converted at the 2006 average exchange rate of \$1.00 U.S. = \$1.134 Canadian.

SOURCES: Industry Canada, Statistics Canada

EUROPE CHEMICAL TRADE BALANCE

Italy and Spain continued trade-deficit streak

\$ MILLIONS	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Belgium	\$8,869	\$10,764	\$9,211	\$11,816	\$13,542	\$12,263	\$15,344	\$16,347	\$17,148	\$16,596	\$19,096
France	9,025	9,504	9,432	10,827	11,000	12,414	12,738	12,695	13,636	12,689	14,936
Germany	26,564	31,816	27,430	26,578	30,017	30,230	29,449	34,494	40,851	38,317	44,347
Italy	-8,935	-10,125	-12,584	-10,723	-11,250	-10,275	-10,470	-12,268	-13,684	-13,317	-14,950
Netherlands	10,739	11,450	10,981	11,484	15,039	15,239	16,726	17,360	19,187	19,096	21,106
Spain	-6,132	-7,065	-7,868	-7,852	-8,052	-8,471	-9,371	-10,277	-10,787	-10,604	-9,859
U.K.	6,993	8,436	9,400	9,317	9,506	10,484	9,866	10,131	8,262	8,367	12,207

NOTE: Monetary statistics for all years were converted at the 2006 average exchange rates of \$1.00 U.S. = 0.796 euros and 0.542 pounds sterling.

SOURCES: European Chemical Industry Council, national agencies